



May 17, 2018

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Air Permit Support Section
300 Sower Boulevard, First Floor
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC – Permit Renewal Application
Source ID: 21-015-00125
AI#: 137
Permit: F-13-023 R4

Dear Ms. Cooke:

Pursuant to 401 KAR 52:030, Section 4, Safran Landing Systems Kentucky LLC (Safran) is submitting the enclosed renewal application for our facility located at One Carbon Way, Walton, Kentucky 41094. Permit F-13-023 R4 is set to expire on November 19th, 2018; therefore, this application is being submitted prior to May 19th (six months before expiration of the current permit). The information provided in this renewal application package includes only the information that is new and/or different from the most recent source-wide permit application as instructed by 401 KAR 52:030, Section 4(2)(c). Updated PTE calculations will be submitted for insignificant activities at a later date.

Renewal Application Package

This permit package consists of the following:

- DEP7007AI Administrative Information
- DEP7007A Indirect Heat Exchanger, Turbine, Internal Combustion Engine
 - EU 01 – Boilers
 - Boiler #1 & #2 – 32.658 MMBtu/h each
 - Boiler #3 – 31.434 MMBtu/hr
 - Boiler #4 – 1.595 MMBtu/hr
 - EU 04 – Cooling Towers (6 systems, 18 towers)
 - Three (3) Non-Contact Systems with 8 cooling towers
 - Three (3) Contact Systems with 10 cooling towers
 - EU 07 – Emergency Generator #1
 - EU 22 – Two (2) 156 HP Emergency Diesel Pumps
- DEP7007N Emissions, Stacks, and Controls Information

- DEP7007DD Insignificant Activities

Changes to be Incorporated:

In compilation of this renewal application, we have discovered the following inconsistencies with the permit and equipment specifications that we would like to be incorporated into the new permit:

- Update the sizes of Boilers #1 - #4:
 - Boilers #1 & #2 – From 27.8 MMBtu/hr to 32.658 MMBtu/h (each)
 - Boiler #3 – From 27.8 MMBtu/hr to 31.434 MMBtu/hr
 - Boiler #4 – From 1.6269 MMBtu/hr to 1.595 MMBtu/hr
- Update the number of contact and non-contact cooling tower systems from 8 systems with 23 towers, to 6 systems with 18 towers.
- Update the size of Emergency Generator #1 for EU 07 from 838 HP to 939 HP (700 kW);
- Update the quantity of emergency diesel pump engines from one (1) to two (2) 156 HP engines for EU 22;
- Update the insignificant activities list to include Electric Curing Ovens 703 & 802 and Nitrogen Scrubbers (703 & 802);
- Update the total capacity of the Misc. Natural Gas HVAC Equipment on the Insignificant Activities list from 1.137 MMBtu/hr to 3.3 MMBtu/hr; and
- Update the description of the A360 Coating System (EU 23) to include the A360 Mixing Booth as outlined in the approval letter dated February 13, 2018 (attached).
- Include Final Machining Line #6 into EU24, per the air permit application submitted to the agency on February 16, 3018.

If you have any additional questions, please contact me at 859-817-3110.

Sincerely,
Safran Landing Systems Kentucky LLC



Christopher R. Bowman
EH&S Specialist

Enclosures

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

Division for Air Quality
300 Sower Blvd. Second Floor
Frankfort, Kentucky 40601
(502) 564-3999
<http://air.ky.gov/>

PERMIT APPLICATION

The completion of this form is required under Regulations 401 KAR 52:020, 52:030, and 52:040 pursuant to KRS 224. Applications are incomplete unless accompanied by copies of all plans, specifications, and drawings requested herein. Failure to supply information required or deemed necessary by the division to enable it to act upon the application shall result in denial of the permit and ensuing administrative and legal action. Applications shall be submitted in triplicate.

DEP7007AI

Administrative
Information

Enter if known

AFS Plant ID#

Agency Use Only

Date Received

Log#

Permit#

1) APPLICATION INFORMATION

Note: The applicant must be the owner or operator. (The owner/operator may be individual(s) or a corporation.)

Name: Safran Landing Systems Kentucky LLC

Title: N/A

Phone: 859-525-8583

(If applicant is an individual)

Mailing Address: One Carbon Way
Company

Street or P.O. Box: _____

City: Walton

State: KY Zip Code: 41094

Is the applicant (check one): ☐ Owner ☐ Operator ☐ Owner & Operator ☒ Corporation/LLC* ☐ LP**

* If the applicant is a Corporation or a Limited Liability Corporation, submit a copy of the current Certificate of Authority from the Kentucky Secretary of State.

** If the applicant is a Limited Partnership, submit a copy of the current Certificate of Limited Partnership from the Kentucky Secretary of State.

Person to contact for technical information relating to application:

Name: Chris Bowman

Title: EH&S Specialist

Phone: 859-817-3110

2) OPERATOR INFORMATION

Note: The applicant must be the owner or operator. (The owner/operator may be individual(s) or a corporation.)

Name: Safran Landing Systems Kentucky LLC

Title: NA

Phone: 859-525-8583

Mailing Address: One Carbon Way
Company

Street or P.O. Box: _____

City: Walton

State: KY Zip Code: _____

3) TYPE OF PERMIT APPLICATION

For new sources that currently *do not* hold any air quality permits in Kentucky and are required to obtain a permit prior to construction pursuant to 401 KAR 52:020, 52:030, or 52:040.

☐ Initial Operating Permit (the permit will authorize both construction and operation of the new source)

Type of Source (Check all that apply): ☐ Major ☐ Conditional Major ☐ Synthetic Minor ☐ Minor

For existing sources that do not have a source-wide Operating Permit required by 401 KAR 52:020, 52:030, or 52:040.

Type of Source (Check all that apply): ☐ Major ☐ Conditional Major ☐ Synthetic Minor ☐ Minor

(Check one only)

☐ Initial Source-wide Operating Permit ☐ Modification of Existing Facilities at Existing Plant

☐ Construction of New Facilities at Existing Plant

☐ Other (explain) _____

For existing sources that currently have a source-wide Operating Permit.

Type of Source (Check all that apply): ☐ Major ☒ Conditional Major ☐ Synthetic Minor ☐ Minor

Current Operating Permit # F-13-023-R4

☐ Administrative Revision (describe type of revision requested, e.g. name change): _____

☒ Permit Renewal ☐ Significant Revision ☐ Minor Revision

☐ Addition of New Facilities ☐ Modification of Existing Facilities

For all construction and modification requiring a permit pursuant to 401 KAR 52:020, 52:030, or 52:040.

Proposed Date for Start
of Construction or Modification: _____

Proposed date for
Operation Start-up: _____

4) SOURCE INFORMATION

Source Name: Safran Landing Systems Kentucky LLC

Source Street Address: One Carbon Way

City: Walton

Zip Code: 41094

County: Boone

Primary Standard Industrial

Classification (SIC) Category: Aircraft Parts and Auxiliary Equipment Primary SIC #: 3728

Property Area

(Acres or Square Feet): 40 acres

Number of

Employees: 198

Description of Area Surrounding Source (check one):

☐ Commercial Area ☐ Residential Area ☐ Industrial Area ☒ Industrial Park ☐ Rural Area ☐ Urban Area

Approximate Distance to Nearest

Residence or Commercial Property: 1/8 Mile

UTM or Standard Location Coordinates: (Include topographical map showing property boundaries)

UTM Coordinates: Zone _____ Horizontal (km) _____ Vertical (km) _____

Standard Coordinates: Latitude 38 Degrees 53 Minutes 22 Seconds

Longitude 84 Degrees 37 Minutes 36 Seconds

4) SOURCE INFORMATION (CONTINUED)Is any part of the source located on federal land? ☐ Yes ☒ No

What other environmental permits or registrations does this source currently hold in Kentucky?

LQG Registration KYR000022525; General KPDES Storm Water Permit KYR00; Wastewater Permits (Sanitation District One (IND-00068 and IND-00088); Hazardous Materials Certificate of Registration (US DOT) #050409551031R

What other environmental permits or registrations does this source need to obtain in Kentucky? None

5) OTHER REQUIRED INFORMATION

Indicate the type(s) and number of forms attached as part of this application.

<u>5</u> DEP7007A Indirect Heat Exchanger, Turbine, Internal Combustion Engine	☐ DEP7007R Emission Reduction Credit
<u>1</u> DEP7007B Manufacturing or Processing Operations	☐ DEP7007S Service Stations
☐ DEP7007C Incinerators & Waste Burners	☐ DEP7007T Metal Plating & Surface Treatment Operations
☐ DEP7007F Episode Standby Plan	☐ DEP7007V Applicable Requirements & Compliance Activities
☐ DEP7007J Volatile Liquid Storage	☐ DEP7007Y Good Engineering Practice (GEP) Stack Height Determination
☐ DEP7007K Surface Coating or Printing Operations	☐ DEP7007AA Compliance Schedule for Noncomplying Emission Units
☐ DEP7007L Concrete, Asphalt, Coal, Aggregate, Feed, Corn, Flour, Grain, & Fertilizer	☐ DEP7007BB Certified Progress Report
☐ DEP7007M Metal Cleaning Degreasers	☐ DEP7007CC Compliance Certification
<u>1</u> DEP7007N Emissions, Stacks, and Controls Information	<u>1</u> DEP7007DD Insignificant Activities
☐ DEP7007P Perchloroethylene Dry Cleaning Systems	

Check other attachments that are part of this application.

Required Data

- ☐ Map or Drawing Showing Location
- ☐ Process Flow Diagram and Description
- ☐ Site Plan Showing Stack Data and Locations
- ☐ Emission Calculation Sheets
- ☐ Material Safety Data Sheets (MSDS)

Supplemental Data

- ☐ Stack Test Report
- ☐ Certificate of Authority from the Secretary of State (for Corporations and Limited Liability Companies)
- ☐ Certificate of Limited Partnership from the Secretary of State (for Limited Partnerships)
- ☐ Claim of Confidentiality (See 400 KAR 1:060)
- ☐ Other (Specify) _____

Indicate if you expect to emit, in any amount, hazardous or toxic materials or compounds or such materials into the atmosphere from any operation or process at this location.

- | | |
|--|--|
| ☒ Pollutants regulated under 401 KAR 57:002 (NESHAP) | ☒ Pollutants listed in 401 KAR 63:060 (HAPS) |
| ☐ Pollutants listed in 40 CFR 68 Subpart F [112(r) pollutants] | ☐ Other |

Has your company filed an emergency response plan with local and/or state and federal officials outlining the measures that would be implemented to mitigate an emergency release?

☒ Yes ☐ No

Check whether your company is seeking coverage under a permit shield. If "Yes" is checked, applicable requirements must be identified on Form DEP7007V. Identify any non-applicable requirements for which you are seeking permit shield coverage on a separate attachment to the application.

☐ Yes ☒ No ☐ A list of non-applicable requirements is attached

6)

OWNER INFORMATION

Note: If the applicant is the owner, write "same as applicant" on the name line.

Name: Same as Applicant

Title: _____ Phone: _____

Mailing Address: _____
Company _____

Street or P.O. Box: _____

City: _____ State: _____ Zip Code: _____

List names of owners and officers of your company who have an interest in the company of 5% or more.

Name

Position (owner, partner, president, CEO, treasurer, etc.)

(attach another sheet if necessary)

7)

SIGNATURE BLOCK

I, the undersigned, hereby certify under penalty of law, that I am a responsible official, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

BY: P. Garnier
(Authorized Signature)

17 MAY 18
(Date)

Philippe Garnier
(Typed or Printed Name of Signatory)

CEO
(Title of Signatory)

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A

**INDIRECT HEAT EXCHANGER,
TURBINE, INTERNAL
COMBUSTION ENGINE**

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Two Cleaver Brooks Model CB-LE 1700

Date Installed: September 10, 1998 / October 1, 2000 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Boiler #1 / Boiler #2

2a) Kind of Unit (Check one):

1. Indirect Heat Exchanger ☒
2. Gas Turbine for Electricity Generation _____
3. Pipe Line Compressor Engines: _____
 _____ Gas Turbine
 _____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
4. Industrial Engine _____

2b)

Rated Capacity: (Refer to manufacturer's specifications)

1. Fuel input (mmBTU/hr): 32.658 each (65.316 total)
2. Power output (hp): _____
Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- _____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
_____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
_____ H. Diesel ☒ I. Other (specify) Process off-gas from CVI furnaces - Natural Gas Equivalent (NGE)

4) Secondary Fuel (if any, specify type): Natural Gas

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary			800 mmBtu/scf	
Secondary			1,000 mmBtu/scf	

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Constellation (Proliance)

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

24 hours/day 7 days/week 52 weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____ % Process Heat _____ % Power _____ %

10) Control options for turbine/IC engine (Check)

☐ (1) Water Injection	☐ (2) Steam Injection
☐ (3) Selective Catalytic Reduction (SCR)	☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Combustion Modification	☐ (5) Other (Specify) _____

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS

11) Coal-Fired Units

_____ Pulverized Coal Fired:

☐ Dry Bottom ☐ Wall Fired
☐ Wet Bottom ☐ Tangentially Fired

_____ Cyclone Furnace

_____ Overfeed Stoker

_____ Fluidized Bed Combustor:
 _____ Circulating Bed
 _____ Bubbling Bed

Fly Ash Rejection:

☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☒ Low NO_x Burners: ☒ Yes ☐ No

☐ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure 32.4 lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) 6 %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☒ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☒ Yes ☐ No

C. List other units vented to this stack None

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

Process Off-Gas (NGE) via pipelines from process CVI furnaces. Natural Gas via pipeline.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A

**INDIRECT HEAT EXCHANGER,
TURBINE, INTERNAL
COMBUSTION ENGINE**

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Cleaver Brooks Model CB-LE 1700

Date Installed: 2012 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Boiler #3

2a) Kind of Unit (Check one):

1. Indirect Heat Exchanger ☒
2. Gas Turbine for Electricity Generation _____
3. Pipe Line Compressor Engines: _____
 _____ Gas Turbine
 _____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
4. Industrial Engine _____

2b)

Rated Capacity: (Refer to manufacturer's specifications)

1. Fuel input (mmBTU/hr): 31,434
2. Power output (hp): _____
 Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- _____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
_____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
_____ H. Diesel ☒ _____ I. Other (specify) Process off-gas from CVI furnaces – Natural Gas Equivalent (**NGE**)

4) Secondary Fuel (if any, specify type): Natural Gas

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary			800 mmBtu/scf	
Secondary			1,000 mmBtu/scf	

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Constellation (Proliance)

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

24 hours/day 7 days/week 52 weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____% Process Heat _____% Power _____%

10) Control options for turbine/IC engine (Check)

☐ (1) Water Injection ☐ (3) Selective Catalytic Reduction (SCR) ☐ (5) Combustion Modification	☐ (2) Steam Injection ☐ (3) Non-Selective Catalytic Reduction (NSCR) ☐ (5) Other (Specify) _____
--	---

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS
11) Coal-Fired Units

_____ Pulverized Coal Fired: ☐ Dry Bottom ☐ Wall Fired ☐ Wet Bottom ☐ Tangentially Fired _____ Cyclone Furnace _____ Overfeed Stoker _____ Fluidized Bed Combustor: _____ Circulating Bed _____ Bubbling Bed	Fly Ash Rejection: ☐ Yes ☐ No _____ Spreader Stoker _____ Underfeed Stoker _____ Hand-fed _____ Other (specify) _____
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12) Oil-Fired Unit

_____ Tangentially (Corner) Fired _____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven _____ Stoker _____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☒ Low NO_x Burners: ☒ Yes ☐ No

_____ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure 32.4 lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) 6 %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☒ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☒ Yes ☐ No

C. List other units vented to this stack None

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

Process off-gas (NGE) via pipelines from process CVI furnaces. Natural Gas via pipeline.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A INDIRECT HEAT EXCHANGER, TURBINE, INTERNAL COMBUSTION ENGINE
--

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Fulton Steam Boiler

Date Installed: June 2007 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Boiler #4 (Anodizing Boiler #4)

- 2a) Kind of Unit (Check one):
1. Indirect Heat Exchanger ☒
 2. Gas Turbine for Electricity Generation _____
 3. Pipe Line Compressor Engines:
 _____ Gas Turbine
 _____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
 4. Industrial Engine _____
- 2b) Rated Capacity: (Refer to manufacturer's specifications)
1. Fuel input (mmBTU/hr): 1,595
 2. Power output (hp): _____
 Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

_____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
_____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
_____ H. Diesel ☒ _____ I. Other (specify) Process off-gas Natural Gas Equivalent (NGE)

4) Secondary Fuel (if any, specify type): Natural Gas

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary			800 mmBtu/scf	
Secondary			1,000 mmBtu/scf	

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Constellation (Proliance)

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

24 hours/day 7 days/week 52 weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____ % Process Heat _____ % Power _____ %

10) Control options for turbine/IC engine (Check)

- | | |
|--|---|
| ☐ (1) Water Injection
☐ (3) Selective Catalytic Reduction (SCR)
☐ (5) Combustion Modification | ☐ (2) Steam Injection
☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Other (Specify) _____ |
|--|---|

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS
11) Coal-Fired Units

_____ Pulverized Coal Fired:

- | | |
|--|--|
| ☐ Dry Bottom
☐ Wet Bottom | ☐ Wall Fired
☐ Tangentially Fired |
|--|--|

_____ Cyclone Furnace

_____ Overfeed Stoker

- _____ Fluidized Bed Combustor:
- | | |
|---|--|
| ☐ Circulating Bed
☐ Bubbling Bed | |
|---|--|

Fly Ash Rejection:

- ☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☒ Low NO_x Burners: ☒ Yes ☐ No

_____ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure 32.4 lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) 6 %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☒ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☒ Yes ☐ No

C. List other units vented to this stack _____

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

Process Off-Gas (NGE) via pipelines from process CVI furnaces. Natural Gas via pipeline.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

DEP7007B

MANUFACTURING OR
PROCESSING OPERATIONS

(Please read instructions before completing this form)

Emission Point # (1)	Process Description (2)	Continuous or Batch (3)	Maximum Operating Schedule (Hours/Day, Days/Week, Weeks/Year) (4)	Process Equipment (Make, Model, Etc.) (5)	Date Installed (6)
Three Contact (Condensate) Cooling Towers	Three Contact Cooling Systems with 8 towers	Continuous	24 hrs/day, 7 days/wk, 52 wks/yr		1998, 2001, 2007, 2011
Three Main Plant Non-Contact Cooling Towers	Three Non-Contact Cooling Systems with 10 towers	Continuous	24 hrs/day, 7 days/wk, 52 wks/yr		2011, 2018

Emission Point # (1)	List Raw Material(s) Used (7)	Maximum Quantity Input Of Each Raw Material (Specify Units/Hour) (8) See Item 18	Type of Products (9) See Item 18	Quantity Output* (Specify Units)	
				Maximum Hourly Rated Capacity (Specify Units) (10a)	Maximum Annual (Specify Units) (10b)
Three Contact (Condensate) Cooling Towers	Contact Cooling Towers	Continuous		491,000 gallons	
Three Main Plant Non-Contact Cooling Towers	Non-Contact Cooling Towers	Continuous		978,000 gallons	

*(10a) Rated Capacity of Equipment

(10b) Should be entered only if applicant requests operating restrictions through federally enforceable limitations

DEP7007B
(Continued)

IMPORTANT: Form DEP7007N, Emission, Stacks, and Controls Information must be completed for each emission unit listed below.

Emission Point # (1)	Fuel Type for Process Heat (11)	Rated Burner Capacity (BTU/Hour) (12)	Fuel Composition		Fuel Usage Rates		Note:
			% Sulfur (13a)	% Ash (13b)	Maximum Hourly (14a)	Maximum Annual* (14b)	
Cooling Towers (1-8)	NA	NA	NA	NA	NA	NA	If the combustion products are emitted along with the process emissions, indicate so in this column by writing "combined." (15)
Main Plant Cooling Towers (1-3)	NA	NA	NA	NA	NA	NA	NA

16) Make a complete list of all wastes generated by each process (e.g. wastewater, scrap, rejects, cleanup waste, etc.). List the hourly (or daily) and annual quantities of each waste and the method of final disposal. (Use a separate sheet of paper, if necessary)

The total amount of water to the contact (condensate) cooling tower system is approximately 491 thousand gallons of water per hour and the total amount of water to the non-contact (Main plant) cooling tower systems is approximately 978 thousand gallons of water per hour.

17) **IMPORTANT:** Submit a process flow diagram. Label all materials, equipment and emission point numbers.

18) Material Safety Data Sheets with complete chemical compositions are required for each process.

*(14b) Should be entered only if applicant requests operating restrictions through federally enforceable permit conditions.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A
INDIRECT HEAT EXCHANGER, TURBINE, INTERNAL COMBUSTION ENGINE

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): 700 KW Caterpillar #3412DITA

Date Installed: February 3, 2000 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Emergency Diesel Generator #1

- 2a) Kind of Unit (Check one):
1. Indirect Heat Exchanger _____
 2. Gas Turbine for Electricity Generation _____
 3. Pipe Line Compressor Engines:
 _____ Gas Turbine
 _____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
 4. Industrial Engine ☒ _____
- 2b) Rated Capacity: (Refer to manufacturer's specifications)
1. Fuel input (mmBTU/hr): _____
 2. Power output (hp): 700 kW (939 HP)
 Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

_____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
_____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
☒ _____ H. Diesel _____ I. Other (specify) _____

4) Secondary Fuel (if any, specify type): _____

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary		0.0015% (15ppm)		
Secondary				

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Brinkman/Lykins

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

_____ hours/day _____ days/week _____ weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____ % Process Heat _____ % Power _____ %

10) Control options for turbine/IC engine (Check)

- | | |
|--|---|
| ☐ (1) Water Injection
☐ (3) Selective Catalytic Reduction (SCR)
☐ (5) Combustion Modification | ☐ (2) Steam Injection
☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Other (Specify) _____ |
|--|---|

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS
11) Coal-Fired Units

_____ Pulverized Coal Fired:

- | | |
|--|--|
| ☐ Dry Bottom
☐ Wet Bottom | ☐ Wall Fired
☐ Tangentially Fired |
|--|--|

_____ Cyclone Furnace

_____ Overfeed Stoker

- _____ Fluidized Bed Combustor:
- | | |
|---|--|
| ☐ Circulating Bed
☐ Bubbling Bed | |
|---|--|

Fly Ash Rejection:

- ☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☐ Low NO_x Burners: ☐ Yes ☐ No

☐ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

- 15) Combustion Air Draft: _____ Natural _____ Induced
Forced Pressure _____ lbs/sq. in.
Percent excess air (air supplied in excess of theoretical air) _____ %

SECTION III

16) Additional Stack Data

- A. Are sampling ports provided? ☐ Yes ☐ No
B. If yes, are they located in accordance with 40 CFR 60*? ☐ Yes ☐ No
C. List other units vented to this stack _____

- 17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

- 18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A

INDIRECT HEAT EXCHANGER,
TURBINE, INTERNAL
COMBUSTION ENGINE

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Two Emergency Diesel Pump Engines (Compression Ignition 4-cylinder, 4 stroke engine)

Date Installed: 2018 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
EU 22 - Two Emergency Diesel Pump Engines #3 & #4

- 2a) Kind of Unit (Check one):
1. Indirect Heat Exchanger _____
 2. Gas Turbine for Electricity Generation _____
 3. Pipe Line Compressor Engines:
 ____ Gas Turbine
 ____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
 4. Industrial Engine ✓ _____
- 2b) Rated Capacity: (Refer to manufacturer's specifications)
1. Fuel input (mmBTU/hr): _____
 2. Power output (hp): 156 HP each (312 HP total)
- Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- ____ A. Coal ____ B. Fuel Oil # (Check one) ____ 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6
____ C. Natural Gas ____ D. Propane ____ E. Butane ____ F. Wood ____ G. Gasoline
✓ ____ H. Diesel ____ I. Other (specify) _____

4) Secondary Fuel (if any, specify type): _____

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary		0.0015% (15ppm)		
Secondary				

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Brinkman/Lykins

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

___ hours/day ___ days/week ___ weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat ___ % Process Heat ___ % Power ___ %

10) Control options for turbine/IC engine (Check)

☐ (1) Water Injection	☐ (2) Steam Injection
☐ (3) Selective Catalytic Reduction (SCR)	☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Combustion Modification	☐ (5) Other (Specify) _____

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS

11) Coal-Fired Units

___ Pulverized Coal Fired:	Fly Ash Rejection:
___ Dry Bottom ___ Wall Fired	☐ Yes ☐ No
___ Wet Bottom ___ Tangentially Fired	
___ Cyclone Furnace	___ Spreader Stoker
___ Overfeed Stoker	___ Underfeed Stoker
___ Fluidized Bed Combustor:	___ Hand-fed
___ Circulating Bed	___ Other (specify) _____
___ Bubbling Bed	

12) Oil-Fired Unit

___ Tangentially (Corner) Fired ___ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

___ Dutch Oven/Fuel Cell Oven ___ Stoker ___ Suspension Firing

___ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

___ Low NO_x Burners: ☐ Yes ☐ No

___ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure _____ lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) _____ %

SECTION III

16) Additional Stack Data

- A. Are sampling ports provided? ☐ Yes ☐ No
B. If yes, are they located in accordance with 40 CFR 60*? ☐ Yes ☐ No
C. List other units vented to this stack _____

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

DIVISION FOR AIR QUALITY

Applicant Name: Safitan Landing Systems Kentucky LLC Log #

DEP7007N

Emissions, Stacks, and
Controls Information

SECTION I. Emissions Unit and Emission Point Information										
KYEIS ID #	Emissions Unit and Emission Point Descriptions				Maximum Operating Parameters			Permitted Operating Parameters		
					Hourly Operating Rate (SCC Units/hr)	Annual Operating Hours (hrs/yr)	Hourly Operating Rate (SCC Units/hr)	Annual Operating Rate (SCC Units/yr)	Annual Operating Hours (hrs/yr)	
	Emission Unit Name: EU 01	Boiler #1 & Boiler #2 Agency Interest ID 137 SCC Code: 1-02-006-02 lbs/MMSCF Boiler #1 & Boiler #2 Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			0.0653	8,760	MMCF/hr		8760	
Date Constructed: HAPs present? Yes										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 01	Boiler #3 Agency Interest ID 137 SCC Code: 1-02-006-02 lbs/MMSCF Boiler #3 Stack Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			0.0314	8,760	MMCF/hr	275	8760	
Date Constructed: HAPs present? Yes										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 01	Boiler #4 Agency Interest ID 137 SCC Code: 1-02-006-02 lbs/MMSCF Boiler #4 Stack Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			0.0016	8,760	MMCF/hr	14	8760	
Date Constructed: HAPs present? Yes										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 04	401 KAR 59.015, 40 CFR 60 Subpart Dc Three Contact Cooling Systems, 8 towers Agency Interest ID 137 KYEIS lbs/1000 gal processed NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			491,000	8,760			8760	
Date Constructed: HAPs present? No										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU04	401 KAR 60.010 Three Non-Contact Cooling Systems, 10 towers Agency Interest ID 137 KYEIS lbs/1000 gal processed NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			978,000	8,760			8760	
Date Constructed: HAPs present? No										
Emission Point Name:										
Source ID:										
SCC Code:										

DIVISION FOR AIR QUALITY

DEP7007N

Emissions, Stacks, and
Controls Information

Applicant Name: Safrair Landing Systems Kentucky LLC Log #

Emission Unit Name Date Constructed HAP's present?		EU 07	Yes	939.0000	8,760	14P	469,500	500
Emission Point Name: Source ID: Agency Interest ID 137 SCC Code: SCC Unit: BOP/hr KY/EIS Stack #: Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:		Emergency Diesel Engine 3-99-999-97 NA .0015% (15ppm)						
Emission Unit Name Date Constructed HAP's present?		EU 22	Yes	312.0000	8,760	14P	156,000	500
Emission Point Name: Source ID: Agency Interest ID 137 SCC Code: SCC Unit: BOP/hr KY/EIS Stack #: Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:		Two Emergency Diesel Pump Engines 3-99-999-97 NA .0015% (15ppm)						
Emission Unit Name Date Constructed HAP's present?		Insignificant Activity - Natural Gas HVAC						
Emission Point Name: Source ID: Agency Interest ID 137 SCC Code: SCC Unit: BOP/hr KY/EIS Stack #: Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:		HVAC 1-02-006-02 BOMMSCF NA						
				0.0033	8,760	MMCF/hr	29	8760

DEP7007N
(continued)

SECTION I - Emissions Unit and Emission Point Information															
KYEIS ID #	Emissions Unit and Emission Point Descriptions		Emission Factors			Control Equipment		Hourly (lb/hr) Emissions			Annual (tons/yr) Emissions				
			Pollutant	Emission Factor (lb/SCC Units)	EF Units	Emission Factor Basis	Control Equipment Association	Pollutant Overall Efficiency (%)	Uncontrolled Potential	Controlled Limited Potential	Allowable	Uncontrolled Potential	Controlled Limited Potential	Allowable	
	EU 01		PM	1.90	lb/MMCF	AP-42	1st control device KYEIS Control ID # Collection efficiency	NA	0.12	0.12	0.54	0.54	0.54		
	Date Constructed?		PM10	7.60	lb/MMCF	AP-42			0.50	0.50	2.17	2.17	2.17		
	HAPs present?		NOx	50.00	lb/MMCF	AP-42			3.27	3.27	14.30	14.30	14.30		
	Emission Point Name:		SO2	0.60	lb/MMCF	AP-42			0.04	0.04	0.17	0.17	0.17		
	Source ID:		CO	84.00	lb/MMCF	AP-42			5.49	5.49	24.03	24.03	24.03		
	SCC Code:		VOC	5.50	lb/MMCF	AP-42			0.36	0.36	1.57	1.57	1.57		
	SCC Units:		Total Haps	1.88	lb/MMCF	AP-42			0.12	0.12	0.54	0.54	0.54		
	Fuel Ash Content:														
	Fuel Sulfur Content:														
	Fuel Heat Content Ratio:														
Applicable Regulations:		401 KAR 59 015, 40 CFR 60 Subpart Dc													
	EU 01		PM	1.90	lb/MMCF	AP-42	2nd control device KYEIS Control ID # Collection efficiency	NA	0.06	0.06	0.26	0.26	0.26		
	Date Constructed?		PM10	7.60	lb/MMCF	AP-42			0.24	0.24	1.05	1.05	1.05		
	HAPs present?		NOx	50.00	lb/MMCF	AP-42			1.57	1.57	6.88	6.88	6.88		
	Emission Point Name:		SO2	0.60	lb/MMCF	AP-42			0.02	0.02	0.08	0.08	0.08		
	Source ID:		CO	84.00	lb/MMCF	AP-42			2.64	2.64	11.57	11.57	11.57		
	SCC Code:		VOC	5.50	lb/MMCF	AP-42			0.17	0.17	0.76	0.76	0.76		
	SCC Units:		Total Haps	1.88	lb/MMCF	AP-42			0.06	0.06	0.26	0.26	0.26		
	Fuel Ash Content:														
	Fuel Sulfur Content:														
	Fuel Heat Content Ratio:														
Applicable Regulations:		401 KAR 59 015, 40 CFR 60 Subpart Dc													
	EU 01		PM	7.60	lb/MMCF	AP-42	1st control device KYEIS Control ID # Collection efficiency	NA	0.01	0.01	1.37	1.37	1.37		
	Date Constructed?		PM10	1.90	lb/MMCF	AP-42			0.00	0.00	0.34	0.34	0.34		
	HAPs present?		NOx	50.00	lb/MMCF	AP-42			0.08	0.08	8.99	8.99	8.99		
	Emission Point Name:		SO2	0.60	lb/MMCF	AP-42			0.00	0.00	0.11	0.11	0.11		
	Source ID:		CO	84.00	lb/MMCF	AP-42			0.13	0.13	15.10	15.10	15.10		
	SCC Code:		VOC	5.50	lb/MMCF	AP-42			0.01	0.01	0.99	0.99	0.99		
	SCC Units:		Total Haps	1.88	lb/MMCF	AP-42			0.00	0.00	0.01	0.01	0.01		
	Fuel Ash Content:														
	Fuel Sulfur Content:														
	Fuel Heat Content Ratio:														
Applicable Regulations:		401 KAR 59 015, 40 CFR 60 Subpart Dc													
	EU 04		PM	0.019	lb/10-3 gal	KYEIS	1st control device KYEIS Control ID # Collection efficiency	NA	9.329	9.33	40.86	40.86	40.86		
	Date Constructed?		PM10	0.019	lb/10-3 gal	KYEIS			9.329	9.33	40.86	40.86	40.86		
	HAPs present?		VOC	0.00547	lb/10-3 gal	KYEIS			2.686	2.69	11.76	11.76	11.76		
	Emission Point Name:														
	Source ID:														
	SCC Code:														
	SCC Units:														
	Fuel Ash Content:														
	Fuel Sulfur Content:														
	Fuel Heat Content Ratio:														
Applicable Regulations:		401 KAR 60 010													
	EU 04		PM	0.019	lb/10-3 gal	KYEIS	1st control device KYEIS Control ID # Collection efficiency	NA	18.582	18.58	81.39	81.39	81.39		
	Date Constructed?		PM10	0.019	lb/10-3 gal	KYEIS			18.582	18.58	81.39	81.39	81.39		
	HAPs present?														
	Emission Point Name:														
	Source ID:														
	SCC Code:														
	SCC Units:														
	Fuel Ash Content:														
	Fuel Sulfur Content:														
	Fuel Heat Content Ratio:														
Applicable Regulations:		401 KAR 60 010													

Applicant Name: Safran Landing Systems Kentucky

DEP7007N
(continued)

Emission Unit Name: Date Constructed: PAP's present?	EU 07 Yes	Emission Point Name: Emergency Diesel Engine Agency Interest ID 137 Source ID: 3-99-999-97 SCC Code: bnp-hr KY/EIS Stack #: NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations	PM PM10 NOx SO2 CO VOC Total Haps 0.002 0.002 0.001 0.002 0.007 0.003 0.006	bnp-hr AP-42 bnp-hr AP-42 bnp-hr AP-42 bnp-hr AP-42 bnp-hr AP-42	1st control device KY/EIS Control ID # Collection efficiency 2nd control device KY/EIS Control ID # Collection efficiency	1.88 1.88 29.11 1.88 6.57 2.82 5.63 0.00	1.88 1.88 29.11 1.88 6.57 2.82 5.63 0.00	0.47 0.47 7.28 0.47 1.64 0.70 1.41 0.00
Emission Unit Name: Date Constructed: PAP's present?	EU 22 Yes	Emission Point Name: Two Emergency Diesel Pump Engines Agency Interest ID 137 Source ID: 3-99-999-97 SCC Code: bnp-hr KY/EIS Stack #: NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations	PM PM10 NOx SO2 CO VOC Total Haps 0.002 0.001 0.002 0.007 0.003 0.006	bnp-hr AP-42 bnp-hr AP-42 bnp-hr AP-42 bnp-hr AP-42	1st control device KY/EIS Control ID # Collection efficiency 2nd control device KY/EIS Control ID # Collection efficiency	0.62 0.62 9.67 0.62 2.18 0.94 1.87 0.00	0.62 0.62 9.67 0.62 2.18 0.94 1.87 0.00	0.16 0.16 2.42 0.16 0.55 0.23 0.47 0.00
Emission Unit Name: Date Constructed: PAP's present?	Insignificant Activity - Natural Gas HVAC Yes	Emission Point Name: HVAC Agency Interest ID 137 Source ID: 1-02-006-02 SCC Code: bmmcf KY/EIS Stack #: NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations	PM PM10 NOx SO2 CO VOC Total Haps 1.90 7.60 50.00 0.60 84.00 5.50 1.88 120000.00 0.64 2.30	bmmcf AP-42 bmmcf AP-42 bmmcf AP-42 bmmcf AP-42 bmmcf AP-42	1st control device KY/EIS Control ID # Collection efficiency 2nd control device KY/EIS Control ID # Collection efficiency	0.01 0.03 0.17 0.00 0.28 0.02 396.00 0.00 0.01	0.01 0.03 0.17 0.00 0.28 0.02 396.00 0.00 0.01	0.03 0.11 0.72 0.01 1.21 0.08 0.03 1734.48 0.01 0.03

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
DIVISION FOR AIR QUALITY

DEP7007DD

**INSIGNIFICANT
ACTIVITIES**

INSIGNIFICANT ACTIVITY CRITERIA

1. Emissions from insignificant activities shall be counted toward the source's potential to emit;
2. Emissions from the activity shall not be subject to a federally enforceable requirement other than generally applicable requirements that apply to all activities and affected facilities such as 401 KAR 59:010, 61:020, 63:010, and others deemed generally applicable by the Cabinet;
3. The potential to emit a regulated air pollutant from the activity or affected facility shall not exceed 5 tons/yr.
4. The potential to emit of a hazardous air pollutant from the activity or affected facility shall not exceed 1,000 pounds/yr., or the de minimis level established under Section 112(g) of the Act, whichever is less;
5. The activity shall be included in the permit application, identifying generally applicable and state origin requirements.

Description of Activity Including Rated Capacity	Generally Applicable Regulations Or State Origin Requirements	Does the Activity meet the Insignificant Activity Criteria Listed Above?
1. Ultrasonic Cleaning RFPC	None	Yes
2. 1 Electric Drying Oven (801)	None	Yes
3. Anti-Oxidant Coating (A123)	401 KAR 63:010	Yes
4. 4 Electric Curing Ovens (701, 702, 703, 802)*	None	Yes
5. 3 Nitrogen Scrubbers (701/702, 703, 802)*	None	Yes
6. Anti-Oxidant Coating & Curing (A66)	401 KAR 59:010	Yes
7. NDT Line – two booths (FPI)	None	Yes
8. Paint Line – Oven 1 (W&B)	None	Yes
9. Paint Line – Oven 2 (W&B)	None	Yes
10. 3 Milling Machines (W&B)	None	Yes
11. 2 Deburring Booths (4 Stations – W&B)	None	Yes
12. Shot Peen (W&B)	None	Yes
13. Needling/Cut Fiber (Pre-Form)	401 KAR 59:010	Yes
14. Misc. Natural Gas HVAC Equipment 3.3 MMBtu.hr (total for all units)*	None	Yes
15. A 123 Residual Scraping (RFPC)	None	Yes
16. Vapor Degreaser	None	Yes
17. Natural Gas Emergency Generator (NC) 160 hp (2004)	None	Yes
18. Natural Gas Emergency Generator (W&B) 225 hp (2007)	None	Yes
19. Carbon OIP Process	401 KAR 59:010	Yes
20. RFPC Inspection Process	401 KAR 59:010	Yes
21. Gas Meter Calibration	401 KAR 63:010	Yes
22. House Vacuum System	401 KAR 59:010	Yes
23. Finished Disk Coating and Drying with Oven	None	Yes
24. Refurbishing	401 KAR 59:010	Yes
25. De-riveting	401 KAR 59:010	Yes
*Updated Insignificant Activities		

SIGNATURE BLOCK

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

BY

P. Garnier

Authorized Signature

05, 17, 18

Date

Philippe Garnier

Typed or Printed Name of Signatory

CEO

Title of Signatory



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

**ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

February 13, 2018

Mr. Christopher R. Bowman, EH&S Specialist
Safran Landing Systems Kentucky, LLC
One Carbon Way
Walton, KY 41094

RE: Inclusion of Mixing Booth in Previously Approved Construction of the A360 Coating
Operation at an Aircraft Parts and Auxiliary Equipment Manufacturing Facility
Permittee Name: Safran Landing Systems Kentucky, LLC
Source ID: 21-015-00125
Agency Interest: 137
Activity: APE20170004
Permit: F-13-023 R4

Dear Mr. Bowman:

The Division received the Safran Landing Systems Kentucky, LLC application for a permit correction on November 21, 2017, and has determined that this addition can be covered per 401 KAR 52:030, Section 17, Off-permit and Section 502(b)(10) Changes. Therefore, no permit revision is required at this time and you may proceed with the project as described by your permit application. The previously omitted equipment, the A360 Mixing Booth, will be incorporated into the permit description of the A360 coating system (Emission Unit 20) at the next revision or renewal, whichever comes first.

EU 23

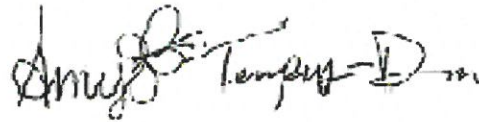
Since the overlooked equipment does not emit, there will be no impact to the Kentucky Emission Inventory System (KYEIS) for this change. All of the conditions regarding the A360 Spray Booths (EU 20) will remain unchanged from those currently specified in F-13-023 R4.

This letter does not exempt your source from the regulatory requirements of any other federal, state, or local agency which may have regulations that apply. You are reminded that if you intend to construct, reconstruct, or modify an air contaminant source in the future, you are

Mr. Chris Bowman
Page 2 of 2

required by regulation to apply for and, if required, be issued a permit, in accordance with 401 KAR 52:030 prior to the commencement of any construction. If you have any questions, please contact me at (502) 564-3999.

Sincerely,

A handwritten signature in black ink, appearing to read "Amy K. Tempus-Doom". The signature is stylized with a large, looped initial "A" and a long, horizontal stroke extending to the right.

Amy K. Tempus-Doom, P.E.
Metallurgy Section Supervisor
Permit Review Branch
Division for Air Quality

SMC/akt



May 17, 2018

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Air Permit Support Section
300 Sower Boulevard, First Floor
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC – Permit Renewal Application
Source ID: 21-015-00125
AI#: 137
Permit: F-13-023 R4

Dear Ms. Cooke:

Pursuant to 401 KAR 52:030, Section 4, Safran Landing Systems Kentucky LLC (Safran) is submitting the enclosed renewal application for our facility located at One Carbon Way, Walton, Kentucky 41094. Permit F-13-023 R4 is set to expire on November 19th, 2018; therefore, this application is being submitted prior to May 19th (six months before expiration of the current permit). The information provided in this renewal application package includes only the information that is new and/or different from the most recent source-wide permit application as instructed by 401 KAR 52:030, Section 4(2)(c). Updated PTE calculations will be submitted for insignificant activities at a later date.

Renewal Application Package

This permit package consists of the following:

- DEP7007AI Administrative Information
- DEP7007A Indirect Heat Exchanger, Turbine, Internal Combustion Engine
 - EU 01 – Boilers
 - Boiler #1 & #2 – 32.658 MMBtu/h each
 - Boiler #3 – 31.434 MMBtu/hr
 - Boiler #4 – 1.595 MMBtu/hr
 - EU 04 – Cooling Towers (6 systems, 18 towers)
 - Three (3) Non-Contact Systems with 8 cooling towers
 - Three (3) Contact Systems with 10 cooling towers
 - EU 07 – Emergency Generator #1
 - EU 22 – Two (2) 156 HP Emergency Diesel Pumps
- DEP7007N Emissions, Stacks, and Controls Information

- DEP7007DD Insignificant Activities

Changes to be Incorporated:

In compilation of this renewal application, we have discovered the following inconsistencies with the permit and equipment specifications that we would like to be incorporated into the new permit:

- Update the sizes of Boilers #1 - #4:
 - Boilers #1 & #2 – From 27.8 MMBtu/hr to 32.658 MMBtu/h (each)
 - Boiler #3 – From 27.8 MMBtu/hr to 31.434 MMBtu/hr
 - Boiler #4 – From 1.6269 MMBtu/hr to 1.595 MMBtu/hr
- Update the number of contact and non-contact cooling tower systems from 8 systems with 23 towers, to 6 systems with 18 towers.
- Update the size of Emergency Generator #1 for EU 07 from 838 HP to 939 HP (700 kW);
- Update the quantity of emergency diesel pump engines from one (1) to two (2) 156 HP engines for EU 22;
- Update the insignificant activities list to include Electric Curing Ovens 703 & 802 and Nitrogen Scrubbers (703 & 802);
- Update the total capacity of the Misc. Natural Gas HVAC Equipment on the Insignificant Activities list from 1.137 MMBtu/hr to 3.3 MMBtu/hr; and
- Update the description of the A360 Coating System (EU 23) to include the A360 Mixing Booth as outlined in the approval letter dated February 13, 2018 (attached).
- Include Final Machining Line #6 into EU24, per the air permit application submitted to the agency on February 16, 2018.

If you have any additional questions, please contact me at 859-817-3110.

Sincerely,
Safran Landing Systems Kentucky LLC



Christopher R. Bowman
EH&S Specialist

Enclosures

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

Division for Air Quality
300 Sower Blvd. Second Floor
Frankfort, Kentucky 40601
(502) 564-3999
<http://air.ky.gov/>

PERMIT APPLICATION

The completion of this form is required under Regulations 401 KAR 52:020, 52:030, and 52:040 pursuant to KRS 224. Applications are incomplete unless accompanied by copies of all plans, specifications, and drawings requested herein. Failure to supply information required or deemed necessary by the division to enable it to act upon the application shall result in denial of the permit and ensuing administrative and legal action. Applications shall be submitted in triplicate.

DEP7007AI

Administrative
Information

Enter if known

AFS Plant ID#

Agency Use Only

Date Received

Log#

Permit#

1) APPLICATION INFORMATION

Note: The applicant must be the owner or operator. (The owner/operator may be individual(s) or a corporation.)

Name: Safran Landing Systems Kentucky LLC

Title: N/A

Phone: 859-525-8583

(If applicant is an individual)

Mailing Address: One Carbon Way
Company

Street or P.O. Box: _____

City: Walton

State: KY Zip Code: 41094

Is the applicant (check one): ☐ Owner ☐ Operator ☐ Owner & Operator ☒ Corporation/LLC* ☐ LP**

* If the applicant is a Corporation or a Limited Liability Corporation, submit a copy of the current Certificate of Authority from the Kentucky Secretary of State.

** If the applicant is a Limited Partnership, submit a copy of the current Certificate of Limited Partnership from the Kentucky Secretary of State.

Person to contact for technical information relating to application:

Name: Chris Bowman

Title: EH&S Specialist

Phone: 859-817-3110

2) OPERATOR INFORMATION

Note: The applicant must be the owner or operator. (The owner/operator may be individual(s) or a corporation.)

Name: Safran Landing Systems Kentucky LLC

Title: NA

Phone: 859-525-8583

Mailing Address: One Carbon Way
Company

Street or P.O. Box: _____

City: Walton

State: KY Zip Code: _____

3) TYPE OF PERMIT APPLICATION

For new sources that currently *do not* hold any air quality permits in Kentucky and are required to obtain a permit prior to construction pursuant to 401 KAR 52:020, 52:030, or 52:040.

☐ Initial Operating Permit (the permit will authorize both construction and operation of the new source)

Type of Source (Check all that apply): ☐ Major ☐ Conditional Major ☐ Synthetic Minor ☐ Minor

For existing sources that do not have a source-wide Operating Permit required by 401 KAR 52:020, 52:030, or 52:040.

Type of Source (Check all that apply): ☐ Major ☐ Conditional Major ☐ Synthetic Minor ☐ Minor

(Check one only)

☐ Initial Source-wide Operating Permit ☐ Modification of Existing Facilities at Existing Plant

☐ Construction of New Facilities at Existing Plant

☐ Other (explain) _____

For existing sources that currently have a source-wide Operating Permit.

Type of Source (Check all that apply): ☐ Major ☒ Conditional Major ☐ Synthetic Minor ☐ Minor

Current Operating Permit # F-13-023-R4

☐ Administrative Revision (describe type of revision requested, e.g. name change): _____

☒ Permit Renewal ☐ Significant Revision ☐ Minor Revision

☐ Addition of New Facilities ☐ Modification of Existing Facilities

For all construction and modification requiring a permit pursuant to 401 KAR 52:020, 52:030, or 52:040.

Proposed Date for Start
of Construction or Modification: _____

Proposed date for
Operation Start-up: _____

4) SOURCE INFORMATION

Source Name: Safran Landing Systems Kentucky LLC

Source Street Address: One Carbon Way

City: Walton

Zip Code: 41094

County: Boone

Primary Standard Industrial

Classification (SIC) Category: Aircraft Parts and Auxiliary Equipment Primary SIC #: 3728

Property Area

(Acres or Square Feet): 40 acres

Number of

Employees: 198

Description of Area Surrounding Source (check one):

☐ Commercial Area ☐ Residential Area ☐ Industrial Area ☒ Industrial Park ☐ Rural Area ☐ Urban Area

Approximate Distance to Nearest

Residence or Commercial Property: 1/8 Mile

UTM or Standard Location Coordinates: (Include topographical map showing property boundaries)

UTM Coordinates: Zone _____ Horizontal (km) _____ Vertical (km) _____

Standard Coordinates: Latitude 38 Degrees 53 Minutes 22 Seconds

Longitude 84 Degrees 37 Minutes 36 Seconds

4) SOURCE INFORMATION (CONTINUED)Is any part of the source located on federal land? ☐ Yes ☒ No

What other environmental permits or registrations does this source currently hold in Kentucky?

LQG Registration KYR000022525; General KPDES Storm Water Permit KYR00; Wastewater Permits (Sanitation District One (IND-00068 and IND-00088); Hazardous Materials Certificate of Registration (US DOT) #050409551031R

What other environmental permits or registrations does this source need to obtain in Kentucky? None

5) OTHER REQUIRED INFORMATION

Indicate the type(s) and number of forms attached as part of this application.

<u>5</u> DEP7007A Indirect Heat Exchanger, Turbine, Internal Combustion Engine	☐ DEP7007R Emission Reduction Credit
<u>1</u> DEP7007B Manufacturing or Processing Operations	☐ DEP7007S Service Stations
☐ DEP7007C Incinerators & Waste Burners	☐ DEP7007T Metal Plating & Surface Treatment Operations
☐ DEP7007F Episode Standby Plan	☐ DEP7007V Applicable Requirements & Compliance Activities
☐ DEP7007J Volatile Liquid Storage	☐ DEP7007Y Good Engineering Practice (GEP) Stack Height Determination
☐ DEP7007K Surface Coating or Printing Operations	☐ DEP7007AA Compliance Schedule for Noncomplying Emission Units
☐ DEP7007L Concrete, Asphalt, Coal, Aggregate, Feed, Corn, Flour, Grain, & Fertilizer	☐ DEP7007BB Certified Progress Report
☐ DEP7007M Metal Cleaning Degreasers	☐ DEP7007CC Compliance Certification
<u>1</u> DEP7007N Emissions, Stacks, and Controls Information	<u>1</u> DEP7007DD Insignificant Activities
☐ DEP7007P Perchloroethylene Dry Cleaning Systems	

Check other attachments that are part of this application.

Required Data

- ☐ Map or Drawing Showing Location
- ☐ Process Flow Diagram and Description
- ☐ Site Plan Showing Stack Data and Locations
- ☐ Emission Calculation Sheets
- ☐ Material Safety Data Sheets (MSDS)

Supplemental Data

- ☐ Stack Test Report
- ☐ Certificate of Authority from the Secretary of State (for Corporations and Limited Liability Companies)
- ☐ Certificate of Limited Partnership from the Secretary of State (for Limited Partnerships)
- ☐ Claim of Confidentiality (See 400 KAR 1:060)
- ☐ Other (Specify) _____

Indicate if you expect to emit, in any amount, hazardous or toxic materials or compounds or such materials into the atmosphere from any operation or process at this location.

- | | |
|--|--|
| ☒ Pollutants regulated under 401 KAR 57:002 (NESHAP) | ☒ Pollutants listed in 401 KAR 63:060 (HAPS) |
| ☐ Pollutants listed in 40 CFR 68 Subpart F [112(r) pollutants] | ☐ Other |

Has your company filed an emergency response plan with local and/or state and federal officials outlining the measures that would be implemented to mitigate an emergency release?

☒ Yes ☐ No

Check whether your company is seeking coverage under a permit shield. If "Yes" is checked, applicable requirements must be identified on Form DEP7007V. Identify any non-applicable requirements for which you are seeking permit shield coverage on a separate attachment to the application.

☐ Yes ☒ No ☐ A list of non-applicable requirements is attached

6)

OWNER INFORMATION

Note: If the applicant is the owner, write "same as applicant" on the name line.

Name: Same as Applicant

Title: _____ Phone: _____

Mailing Address: _____
Company _____

Street or P.O. Box: _____

City: _____ State: _____ Zip Code: _____

List names of owners and officers of your company who have an interest in the company of 5% or more.

NamePosition (owner, partner, president, CEO, treasurer, etc.)

(attach another sheet if necessary)

7)

SIGNATURE BLOCK

I, the undersigned, hereby certify under penalty of law, that I am a responsible official, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

BY: P. Garnier
(Authorized Signature)17 MAY 18
(Date)Philippe Garnier
(Typed or Printed Name of Signatory)CEO
(Title of Signatory)

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A

**INDIRECT HEAT EXCHANGER,
TURBINE, INTERNAL
COMBUSTION ENGINE**

Emission Point # _____

Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Two Cleaver Brooks Model CB-LE 1700

Date Installed: September 10, 1998 / October 1, 2000

Cost of Unit: _____

(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:

Boiler #1 / Boiler #2

2a) Kind of Unit (Check one):

1. Indirect Heat Exchanger ☒

2. Gas Turbine for Electricity Generation _____

3. Pipe Line Compressor Engines:

____ Gas Turbine

____ Reciprocating engines

(a) 2-cycle lean burn _____

(b) 4-cycle lean burn _____

(c) 4-cycle rich burn _____

4. Industrial Engine _____

2b)

Rated Capacity: (Refer to manufacturer's specifications)

1. Fuel input (mmBTU/hr): 32.658 each (65.316 total)

2. Power output (hp): _____

Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

____ A. Coal

____ B. Fuel Oil # (Check one)

____ 1

____ 2

____ 3

____ 4

____ 5

____ 6

____ C. Natural Gas

____ D. Propane

____ E. Butane

____ F. Wood

____ G. Gasoline

____ H. Diesel

☒

I. Other (specify) Process off-gas from CVI furnaces - Natural Gas Equivalent (NGE)

4) Secondary Fuel (if any, specify type): Natural Gas

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary			800 mmBtu/scf	
Secondary			1,000 mmBtu/scf	

a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)

b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)

c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)

d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Constellation (Proliance)

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

24 hours/day 7 days/week 52 weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____ % Process Heat _____ % Power _____ %

10) Control options for turbine/IC engine (Check)

☐ (1) Water Injection	☐ (2) Steam Injection
☐ (3) Selective Catalytic Reduction (SCR)	☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Combustion Modification	☐ (5) Other (Specify) _____

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS

11) Coal-Fired Units

_____ Pulverized Coal Fired:

☐ Dry Bottom ☐ Wall Fired
☐ Wet Bottom ☐ Tangentially Fired

_____ Cyclone Furnace

_____ Overfeed Stoker

_____ Fluidized Bed Combustor:
 _____ Circulating Bed
 _____ Bubbling Bed

Fly Ash Rejection:

☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☒ Low NO_x Burners: ☒ Yes ☐ No

☐ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure 32.4 lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) 6 %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☒ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☒ Yes ☐ No

C. List other units vented to this stack None

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

Process Off-Gas (NGE) via pipelines from process CVI furnaces. Natural Gas via pipeline.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A

**INDIRECT HEAT EXCHANGER,
TURBINE, INTERNAL
COMBUSTION ENGINE**

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Cleaver Brooks Model CB-LE 1700

Date Installed: 2012 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Boiler #3

2a) Kind of Unit (Check one):

1. Indirect Heat Exchanger ☒
2. Gas Turbine for Electricity Generation _____
3. Pipe Line Compressor Engines: _____
 _____ Gas Turbine
 _____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
4. Industrial Engine _____

2b)

Rated Capacity: (Refer to manufacturer's specifications)

1. Fuel input (mmBTU/hr): 31,434
2. Power output (hp): _____
 Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- _____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
_____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
_____ H. Diesel ☒ _____ I. Other (specify) Process off-gas from CVI furnaces – Natural Gas Equivalent (**NGE**)

4) Secondary Fuel (if any, specify type): Natural Gas

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary			800 mmBtu/scf	
Secondary			1,000 mmBtu/scf	

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Constellation (Proliance)

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

24 hours/day 7 days/week 52 weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____% Process Heat _____% Power _____%

10) Control options for turbine/IC engine (Check)

- | | |
|--|---|
| ☐ (1) Water Injection
☐ (3) Selective Catalytic Reduction (SCR)
☐ (5) Combustion Modification | ☐ (2) Steam Injection
☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Other (Specify) _____ |
|--|---|

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS
11) Coal-Fired Units

_____ Pulverized Coal Fired:

- | | |
|-------------------------------------|---|
| ☐ Dry Bottom | ☐ Wall Fired |
| ☐ Wet Bottom | ☐ Tangentially Fired |

_____ Cyclone Furnace

_____ Overfeed Stoker

_____ Fluidized Bed Combustor:

- ☐ Circulating Bed
☐ Bubbling Bed

Fly Ash Rejection:

- ☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☒ Low NO_x Burners: ☒ Yes ☐ No

☐ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure 32.4 lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) 6 %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☒ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☒ Yes ☐ No

C. List other units vented to this stack None

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

Process off-gas (NGE) via pipelines from process CVI furnaces. Natural Gas via pipeline.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A INDIRECT HEAT EXCHANGER, TURBINE, INTERNAL COMBUSTION ENGINE
--

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Fulton Steam Boiler

Date Installed: June 2007 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Boiler #4 (Anodizing Boiler #4)

- 2a) Kind of Unit (Check one):
1. Indirect Heat Exchanger ☒
 2. Gas Turbine for Electricity Generation _____
 3. Pipe Line Compressor Engines:
 - _____ Gas Turbine
 - _____ Reciprocating engines
 - (a) 2-cycle lean burn _____
 - (b) 4-cycle lean burn _____
 - (c) 4-cycle rich burn _____
 4. Industrial Engine _____
- 2b) Rated Capacity: (Refer to manufacturer's specifications)
1. Fuel input (mmBTU/hr): 1,595
 2. Power output (hp): _____
Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- _____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
- _____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
- _____ H. Diesel ☒ _____ I. Other (specify) Process off-gas Natural Gas Equivalent (NGE)

4) Secondary Fuel (if any, specify type): Natural Gas

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary			800 mmBtu/scf	
Secondary			1,000 mmBtu/scf	

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Constellation (Proliance)

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

24 hours/day 7 days/week 52 weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____ % Process Heat _____ % Power _____ %

10) Control options for turbine/IC engine (Check)

- | | |
|--|---|
| ☐ (1) Water Injection
☐ (3) Selective Catalytic Reduction (SCR)
☐ (5) Combustion Modification | ☐ (2) Steam Injection
☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Other (Specify) _____ |
|--|---|

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS
11) Coal-Fired Units

_____ Pulverized Coal Fired:

- | | |
|-------------------------------------|---|
| ☐ Dry Bottom | ☐ Wall Fired |
| ☐ Wet Bottom | ☐ Tangentially Fired |

_____ Cyclone Furnace

_____ Overfeed Stoker

_____ Fluidized Bed Combustor:

- ☐ Circulating Bed
☐ Bubbling Bed

Fly Ash Rejection:

- ☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☒ Low NO_x Burners: ☒ Yes ☐ No

_____ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure 32.4 lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) 6 %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☒ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☒ Yes ☐ No

C. List other units vented to this stack _____

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

Process Off-Gas (NGE) via pipelines from process CVI furnaces. Natural Gas via pipeline.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

DEP7007B

MANUFACTURING OR
PROCESSING OPERATIONS

(Please read instructions before completing this form)

Emission Point # (1)	Process Description (2)	Continuous or Batch (3)	Maximum Operating Schedule (Hours/Day, Days/Week, Weeks/Year) (4)	Process Equipment (Make, Model, Etc.) (5)	Date Installed (6)
Three Contact (Condensate) Cooling Towers	Three Contact Cooling Systems with 8 towers	Continuous	24 hrs/day, 7 days/wk, 52 wks/yr		1998, 2001, 2007, 2011
Three Main Plant Non-Contact Cooling Towers	Three Non-Contact Cooling Systems with 10 towers	Continuous	24 hrs/day, 7 days/wk, 52 wks/yr		2011, 2018

Emission Point # (1)	List Raw Material(s) Used (7)	Maximum Quantity Input Of Each Raw Material (Specify Units/Hour) (8) See Item 18	Type of Products (9) See Item 18	Quantity Output* (Specify Units)	
				Maximum Hourly Rated Capacity (Specify Units) (10a)	Maximum Annual (Specify Units) (10b)
Three Contact (Condensate) Cooling Towers	Contact Cooling Towers	Continuous		491,000 gallons	
Three Main Plant Non-Contact Cooling Towers	Non-Contact Cooling Towers	Continuous		978,000 gallons	

*(10a) Rated Capacity of Equipment

(10b) Should be entered only if applicant requests operating restrictions through federally enforceable limitations

DEP7007B
(Continued)

IMPORTANT: Form DEP7007N, Emission, Stacks, and Controls Information must be completed for each emission unit listed below.

Emission Point # (1)	Fuel Type for Process Heat (11)	Rated Burner Capacity (BTU/Hour) (12)	Fuel Composition		Fuel Usage Rates		Note: If the combustion products are emitted along with the process emissions, indicate so in this column by writing "combined." (15)
			% Sulfur (13a)	% Ash (13b)	Maximum Hourly (14a)	Maximum Annual* (14b)	
Cooling Towers (1-8)	NA	NA	NA	NA	NA	NA	NA
Main Plant Cooling Towers (1-3)	NA	NA	NA	NA	NA	NA	NA

16) Make a complete list of all wastes generated by each process (e.g. wastewater, scrap, rejects, cleanup waste, etc.). List the hourly (or daily) and annual quantities of each waste and the method of final disposal. (Use a separate sheet of paper, if necessary)

The total amount of water to the contact (condensate) cooling tower system is approximately 491 thousand gallons of water per hour and the total amount of water to the non-contact (Main plant) cooling tower systems is approximately 978 thousand gallons of water per hour.

17) **IMPORTANT:** Submit a process flow diagram. Label all materials, equipment and emission point numbers.

18) Material Safety Data Sheets with complete chemical compositions are required for each process.

*(14b) Should be entered only if applicant requests operating restrictions through federally enforceable permit conditions.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A
INDIRECT HEAT EXCHANGER, TURBINE, INTERNAL COMBUSTION ENGINE

Emission Point # _____
Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): 700 KW Caterpillar #3412DITA

Date Installed: February 3, 2000 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
Emergency Diesel Generator #1

- 2a) Kind of Unit (Check one):
1. Indirect Heat Exchanger _____
 2. Gas Turbine for Electricity Generation _____
 3. Pipe Line Compressor Engines:
 _____ Gas Turbine
 _____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
 4. Industrial Engine ☒ _____
- 2b) Rated Capacity: (Refer to manufacturer's specifications)
1. Fuel input (mmBTU/hr): _____
 2. Power output (hp): 700 kW (939 HP)
 Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- _____ A. Coal _____ B. Fuel Oil # (Check one) _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6
- _____ C. Natural Gas _____ D. Propane _____ E. Butane _____ F. Wood _____ G. Gasoline
- ☒ _____ H. Diesel _____ I. Other (specify) _____

4) Secondary Fuel (if any, specify type): _____

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary		0.0015% (15ppm)		
Secondary				

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Brinkman/Lykins

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

_____ hours/day _____ days/week _____ weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat _____ % Process Heat _____ % Power _____ %

10) Control options for turbine/IC engine (Check)

- | | |
|--|---|
| ☐ (1) Water Injection
☐ (3) Selective Catalytic Reduction (SCR)
☐ (5) Combustion Modification | ☐ (2) Steam Injection
☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Other (Specify) _____ |
|--|---|

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS
11) Coal-Fired Units

_____ Pulverized Coal Fired:

- | | |
|--|--|
| ☐ Dry Bottom
☐ Wet Bottom | ☐ Wall Fired
☐ Tangentially Fired |
|--|--|

_____ Cyclone Furnace

_____ Overfeed Stoker

- _____ Fluidized Bed Combustor:
- | | |
|---|--|
| ☐ Circulating Bed
☐ Bubbling Bed | |
|---|--|

Fly Ash Rejection:

- ☐ Yes ☐ No

_____ Spreader Stoker

_____ Underfeed Stoker

_____ Hand-fed

_____ Other (specify) _____

12) Oil-Fired Unit

_____ Tangentially (Corner) Fired

_____ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

_____ Dutch Oven/Fuel Cell Oven

_____ Stoker

_____ Suspension Firing

_____ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

☐ Low NO_x Burners: ☐ Yes ☐ No

☐ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure _____ lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) _____ %

SECTION III

16) Additional Stack Data

A. Are sampling ports provided? ☐ Yes ☐ No

B. If yes, are they located in accordance with 40 CFR 60*? ☐ Yes ☐ No

C. List other units vented to this stack _____

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection

DIVISION FOR AIR QUALITY

(Submit copies of this form for each individual unit.
Make additional copies as needed)

DEP7007A

INDIRECT HEAT EXCHANGER,
TURBINE, INTERNAL
COMBUSTION ENGINE

Emission Point # _____

Emission Unit # _____

1) Type of Unit (Make, Model, Etc.): Two Emergency Diesel Pump Engines (Compression Ignition 4-cylinder, 4 stroke engine)

Date Installed: 2018 Cost of Unit: _____
(Date unit was installed, modified or reconstructed, whichever is later.)

Where more than one unit is present, identify with Company's identification or code for this unit:
EU 22 - Two Emergency Diesel Pump Engines #3 & #4

2a) Kind of Unit (Check one): 2b) Rated Capacity: (Refer to manufacturer's specifications)

1. Indirect Heat Exchanger _____
2. Gas Turbine for Electricity Generation _____

1. Fuel input (mmBTU/hr): _____
2. Power output (hp): 156 HP each (312 HP total)

3. Pipe Line Compressor Engines:
____ Gas Turbine
____ Reciprocating engines
 (a) 2-cycle lean burn _____
 (b) 4-cycle lean burn _____
 (c) 4-cycle rich burn _____
4. Industrial Engine ✓

Power output (MW): _____

SECTION 1. FUEL

3) Type of Primary Fuel (Check):

- ____ A. Coal ____ B. Fuel Oil # (Check one) ____ 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6
____ C. Natural Gas ____ D. Propane ____ E. Butane ____ F. Wood ____ G. Gasoline
✓ ____ H. Diesel ____ I. Other (specify) _____

4) Secondary Fuel (if any, specify type): _____

5) Fuel Composition

Type	Percent Ash ^a	Percent Sulfur ^b	Heat Content Corresponding to: ^{c, d}	
	Maximum	Maximum	Maximum Ash	Maximum Sulfur
Primary		0.0015% (15ppm)		
Secondary				

- a. As received basis. Proximate Analysis for Ash. (May use values in your fuel contract)
b. As received basis. Ultimate Analysis for Sulfur. (May use values in your fuel contract)
c. Higher Heating Value, BTU/Unit. (May use values in your fuel contract)
d. Suggested units are: Pounds for solid fuel, gallon for liquid fuels, and cu. Ft. for gaseous fuels. If other units are used, please specify.

6) Maximum Annual Fuel Usage Rate (please specify units)*: _____

7) Fuel Source or supplier: Brinkman/Lykins

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

8) MAXIMUM OPERATING SCHEDULE FOR THIS UNIT*

___ hours/day ___ days/week ___ weeks/year

9) If this unit is multipurpose, describe percent in each use category:

Space Heat ___ % Process Heat ___ % Power ___ %

10) Control options for turbine/IC engine (Check)

☐ (1) Water Injection	☐ (2) Steam Injection
☐ (3) Selective Catalytic Reduction (SCR)	☐ (3) Non-Selective Catalytic Reduction (NSCR)
☐ (5) Combustion Modification	☐ (5) Other (Specify) _____

IMPORTANT: Form DEP7007N must also be completed for this unit.

SECTION II COMPLETE ONLY FOR INDIRECT HEAT EXCHANGERS

11) Coal-Fired Units

___ Pulverized Coal Fired:	Fly Ash Rejection:
___ Dry Bottom ___ Wall Fired	☐ Yes ☐ No
___ Wet Bottom ___ Tangentially Fired	
___ Cyclone Furnace	___ Spreader Stoker
___ Overfeed Stoker	___ Underfeed Stoker
___ Fluidized Bed Combustor:	___ Hand-fed
___ Circulating Bed	___ Other (specify) _____
___ Bubbling Bed	

12) Oil-Fired Unit

___ Tangentially (Corner) Fired ___ Horizontally Opposed (Normal) Fired

13) Wood-Fired Unit

Fly-Ash Reinjection: ☐ Yes ☐ No

___ Dutch Oven/Fuel Cell Oven ___ Stoker ___ Suspension Firing

___ Fluidized Bed Combustion (FBC)

14) Natural Gas-Fired Units

___ Low NO_x Burners: ☐ Yes ☐ No

___ Flue Gas Recirculation: ☐ Yes ☐ No

*Should be entered only if applicant requests operating restriction through federally enforceable limitations.

15) Combustion Air Draft: _____ Natural _____ Induced

Forced Pressure _____ lbs/sq. in.

Percent excess air (air supplied in excess of theoretical air) _____ %

SECTION III

16) Additional Stack Data

- A. Are sampling ports provided? ☐ Yes ☐ No
B. If yes, are they located in accordance with 40 CFR 60*? ☐ Yes ☐ No
C. List other units vented to this stack _____

17) Attach manufacturer's specifications and guaranteed performance data for the indirect heat exchanger. Include information concerning fuel input, burners and combustion chamber dimensions.

18) Describe fuel transport, storage methods and related dust control measures, including ash disposal and control.

*Applicant assumes responsibility for proper location of sampling ports if the Division for Air Quality requires a compliance demonstration stack test.

DIVISION FOR AIR QUALITY

Applicant Name: Safitan Landing Systems Kentucky LLC Log #

DEP7007N

Emissions, Stacks, and
Controls Information

SECTION I. Emissions Unit and Emission Point Information										
KYEIS ID #	Emissions Unit and Emission Point Descriptions				Maximum Operating Parameters			Permitted Operating Parameters		
					Hourly Operating Rate (SCC Units/hr)	Annual Operating Hours (hrs/yr)	Hourly Operating Rate (SCC Units/hr)	Annual Operating Rate (SCC Units/yr)	Annual Operating Hours (hrs/yr)	
	Emission Unit Name: EU 01	Boiler #1 & Boiler #2 Agency Interest ID 137 SCC Code: 1-02-006-02 lbs/MMSCF Boiler #1 & Boiler #2 Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			0.0653	8,760	MMCF/hr		8760	
Date Constructed: HAPs present? Yes										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 01	Boiler #3 Agency Interest ID 137 SCC Code: 1-02-006-02 lbs/MMSCF Boiler #3 Stack Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			0.0314	8,760	MMCF/hr	275	8760	
Date Constructed: HAPs present? Yes										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 01	Boiler #4 Agency Interest ID 137 SCC Code: 1-02-006-02 lbs/MMSCF Boiler #4 Stack Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			0.0016	8,760	MMCF/hr	14	8760	
Date Constructed: HAPs present? Yes										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 04	401 KAR 59.015, 40 CFR 60 Subpart Dc Three Contact Cooling Systems, 8 towers Agency Interest ID 137 KYEIS lbs/1000 gal processed NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			491,000	8,760			8760	
Date Constructed: HAPs present? No										
Emission Point Name:										
Source ID:										
SCC Code:										
	Emission Unit Name: EU 04	401 KAR 60.010 Three Non-Contact Cooling Systems, 10 towers Agency Interest ID 137 KYEIS lbs/1000 gal processed NA Fuel Ash Content: Fuel Sulfur Content: Fuel Heat Content Ratio: Applicable Regulations:			978,000	8,760			8760	
Date Constructed: HAPs present? No										
Emission Point Name:										
Source ID:										
SCC Code:										

DIVISION FOR AIR QUALITY

Applicant Name: Safrair Landing Systems Kentucky LLC Log #

DEP7007N

Emissions, Stacks, and
Controls Information

Emission Unit Name Date Constructed HAP's present?	EU 07 Yes				
Emission Point Name Source ID Agency Interest ID SCC Code SCC Unit KY/EIS Stack # Fuel Ash Content Fuel Sulfur Content Fuel Heat Content Ratio Applicable Regulations	Emergency Diesel Engine Agency Interest ID 137 3-99-999-97 BHP-Hr NA .0015% (15ppm)				
Emission Unit Name Date Constructed HAP's present?	EU 22 Yes				
Emission Point Name Source ID Agency Interest ID SCC Code SCC Unit KY/EIS Stack # Fuel Ash Content Fuel Sulfur Content Fuel Heat Content Ratio Applicable Regulations	Two Emergency Diesel Pump Engines Agency Interest ID 137 3-99-999-97 BHP-Hr NA .0015% (15ppm)				
Emission Unit Name Date Constructed HAP's present?	Insignificant Activity - Natural Gas HVAC Yes				
Emission Point Name Source ID Agency Interest ID SCC Code SCC Unit KY/EIS Stack # Fuel Ash Content Fuel Sulfur Content Fuel Heat Content Ratio Applicable Regulations	HVAC Agency Interest ID 137 1-02-006-02 BSNMMSCF NA				

DEP7007N
(continued)

SECTION I - Emissions Unit and Emission Point Information													
KYEIS ID #	Emissions Unit and Emission Point Descriptions	Emission Factors			Control Equipment		Hourly (lb/hr) Emissions			Annual (tons/yr) Emissions			
		Pollutant	Emission Factor (lb/SCTC Units)	EF Units	Emission Factor Basis	Control Equipment Association	Pollutant Overall Efficiency (%)	Uncontrolled Potential	Controlled Limited Potential	Allowable	Uncontrolled Potential	Controlled Limited Potential	Allowable
	Emission Unit Name: EU01	PM	1.90	lb/MMCF	AP-42	1st control device KYEIS Control ID # Collection efficiency	NA	0.12	0.12	0.54	0.54	0.54	
	Date Constructed: Yes	PM10	7.60	lb/MMCF	AP-42			0.50	0.50	2.17	2.17	14.30	14.30
	HAPs present?	NOx	50.00	lb/MMCF	AP-42			3.27	3.27	14.30	14.30	0.17	0.17
	Emission Point Name: Boiler #1 & Boiler #2	SO2	0.60	lb/MMCF	AP-42			0.04	0.04	0.17	0.17	24.03	24.03
	Source ID: Agency Interest ID 137	CO	84.00	lb/MMCF	AP-42			5.49	5.49	24.03	24.03	1.57	1.57
	SCTC Code: 1-02-006-02	VOC	5.50	lb/MMCF	AP-42			0.36	0.36	1.57	1.57	0.54	0.54
	SCTC Units: lb/MMMSCF	Total Haps	1.88	lb/MMCF	AP-42			0.12	0.12	0.54	0.54		
	Fuel Ash Content: Boiler #1 & Boiler #2												
	Fuel Sulfur Content:												
	Fuel Heat Content Ratio: Applicable Regulations: 401 KAR 59.015, 40 CFR 60 Subpart Dc												
	Emission Unit Name: EU01	PM	1.90	lb/MMCF	AP-42	2nd control device KYEIS Control ID # Collection efficiency	NA	0.06	0.06	0.26	0.26	0.26	
	Date Constructed: Yes	PM10	7.60	lb/MMCF	AP-42			0.24	0.24	1.05	1.05	6.88	6.88
	HAPs present?	NOx	50.00	lb/MMCF	AP-42			1.57	1.57	6.88	6.88	0.08	0.08
	Emission Point Name: Boiler #3	SO2	0.60	lb/MMCF	AP-42			0.02	0.02	0.08	0.08	11.57	11.57
	Source ID: Agency Interest ID 137	CO	84.00	lb/MMCF	AP-42			2.64	2.64	11.57	11.57	0.76	0.76
	SCTC Code: 1-02-006-02	VOC	5.50	lb/MMCF	AP-42			0.17	0.17	0.76	0.76	0.26	0.26
	SCTC Units: lb/MMMSCF	Total Haps	1.88	lb/MMCF	AP-42			0.06	0.06	0.26	0.26		
	Fuel Ash Content: Boiler #3 Stack												
	Fuel Sulfur Content:												
	Fuel Heat Content Ratio: Applicable Regulations: 401 KAR 59.015, 40 CFR 60 Subpart Dc												
	Emission Unit Name: EU01	PM	7.60	lb/MMCF	AP-42	1st control device KYEIS Control ID # Collection efficiency	NA	0.01	0.01	1.37	1.37	1.37	
	Date Constructed: Yes	PM10	1.90	lb/MMCF	AP-42			0.00	0.00	0.34	0.34	8.99	8.99
	HAPs present?	NOx	50.00	lb/MMCF	AP-42			0.08	0.08	0.11	0.11	15.10	15.10
	Emission Point Name: Boiler #4	SO2	0.60	lb/MMCF	AP-42			0.00	0.00	0.01	0.01	0.99	0.99
	Source ID: Agency Interest ID 137	CO	84.00	lb/MMCF	AP-42			0.13	0.13	0.01	0.01	0.01	0.01
	SCTC Code: 1-02-006-02	VOC	5.50	lb/MMCF	AP-42			0.01	0.01	0.01	0.01	0.01	0.01
	SCTC Units: lb/MMMSCF	Total Haps	1.88	lb/MMCF	AP-42			0.00	0.00	0.01	0.01		
	Fuel Ash Content: Boiler #4 Stack												
	Fuel Sulfur Content:												
	Fuel Heat Content Ratio: Applicable Regulations: 401 KAR 59.015, 40 CFR 60 Subpart Dc												
	Emission Unit Name: EU04	PM	0.019	lb/10-3 gal	KYEIS	1st control device KYEIS Control ID # Collection efficiency	NA	9.329	9.33	40.86	40.86	40.86	
	Date Constructed: No	PM10	0.019	lb/10-3 gal	KYEIS			9.329	9.33	40.86	40.86	11.76	11.76
	HAPs present?	VOC	0.00547	lb/10-3 gal	KYEIS			2.686	2.69				
	Emission Point Name: Three Contact Cooling Systems, 8 towers												
	Source ID: Agency Interest ID 137												
	SCTC Code: KYEIS												
	SCTC Units: lbs/1000 gal processed												
	Fuel Ash Content: NA												
	Fuel Sulfur Content:												
	Fuel Heat Content Ratio: Applicable Regulations: 401 KAR 60.010												
	Emission Unit Name: EU04	PM	0.019	lb/10-3 gal	KYEIS	1st control device KYEIS Control ID # Collection efficiency	NA	18.582	18.58	81.39	81.39	81.39	
	Date Constructed: No	PM10	0.019	lb/10-3 gal	KYEIS			18.582	18.58	81.39	81.39		
	HAPs present?												
	Emission Point Name: Three Non-Contact Cooling Systems, 10 towers												
	Source ID: Agency Interest ID 137												
	SCTC Code: KYEIS												
	SCTC Units: lbs/1000 gal processed												
	Fuel Ash Content: NA												
	Fuel Sulfur Content:												
	Fuel Heat Content Ratio: Applicable Regulations: 401 KAR 60.010												

Applicant Name: Safran Landing Systems Kentucky

DEP7007N
(continued)

Emission Unit Name		EU 07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
DIVISION FOR AIR QUALITY

DEP7007DD

**INSIGNIFICANT
ACTIVITIES**

INSIGNIFICANT ACTIVITY CRITERIA

1. Emissions from insignificant activities shall be counted toward the source's potential to emit;
2. Emissions from the activity shall not be subject to a federally enforceable requirement other than generally applicable requirements that apply to all activities and affected facilities such as 401 KAR 59:010, 61:020, 63:010, and others deemed generally applicable by the Cabinet;
3. The potential to emit a regulated air pollutant from the activity or affected facility shall not exceed 5 tons/yr.
4. The potential to emit of a hazardous air pollutant from the activity or affected facility shall not exceed 1,000 pounds/yr., or the de minimis level established under Section 112(g) of the Act, whichever is less;
5. The activity shall be included in the permit application, identifying generally applicable and state origin requirements.

Description of Activity Including Rated Capacity	Generally Applicable Regulations Or State Origin Requirements	Does the Activity meet the Insignificant Activity Criteria Listed Above?
1. Ultrasonic Cleaning RFPC	None	Yes
2. 1 Electric Drying Oven (801)	None	Yes
3. Anti-Oxidant Coating (A123)	401 KAR 63:010	Yes
4. 4 Electric Curing Ovens (701, 702, 703, 802)*	None	Yes
5. 3 Nitrogen Scrubbers (701/702, 703, 802)*	None	Yes
6. Anti-Oxidant Coating & Curing (A66)	401 KAR 59:010	Yes
7. NDT Line – two booths (FPI)	None	Yes
8. Paint Line – Oven 1 (W&B)	None	Yes
9. Paint Line – Oven 2 (W&B)	None	Yes
10. 3 Milling Machines (W&B)	None	Yes
11. 2 Deburring Booths (4 Stations – W&B)	None	Yes
12. Shot Peen (W&B)	None	Yes
13. Needling/Cut Fiber (Pre-Form)	401 KAR 59:010	Yes
14. Misc. Natural Gas HVAC Equipment 3.3 MMBtu.hr (total for all units)*	None	Yes
15. A 123 Residual Scraping (RFPC)	None	Yes
16. Vapor Degreaser	None	Yes
17. Natural Gas Emergency Generator (NC) 160 hp (2004)	None	Yes
18. Natural Gas Emergency Generator (W&B) 225 hp (2007)	None	Yes
19. Carbon OIP Process	401 KAR 59:010	Yes
20. RFPC Inspection Process	401 KAR 59:010	Yes
21. Gas Meter Calibration	401 KAR 63:010	Yes
22. House Vacuum System	401 KAR 59:010	Yes
23. Finished Disk Coating and Drying with Oven	None	Yes
24. Refurbishing	401 KAR 59:010	Yes
25. De-riveting	401 KAR 59:010	Yes
*Updated Insignificant Activities		

SIGNATURE BLOCK

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

BY

P. Garnier

Authorized Signature

05, 17, 18

Date

Philippe Garnier

Typed or Printed Name of Signatory

CEO

Title of Signatory



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

**ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

February 13, 2018

Mr. Christopher R. Bowman, EH&S Specialist
Safran Landing Systems Kentucky, LLC
One Carbon Way
Walton, KY 41094

RE: Inclusion of Mixing Booth in Previously Approved Construction of the A360 Coating
Operation at an Aircraft Parts and Auxiliary Equipment Manufacturing Facility
Permittee Name: Safran Landing Systems Kentucky, LLC
Source ID: 21-015-00125
Agency Interest: 137
Activity: APE20170004
Permit: F-13-023 R4

Dear Mr. Bowman:

The Division received the Safran Landing Systems Kentucky, LLC application for a permit correction on November 21, 2017, and has determined that this addition can be covered per 401 KAR 52:030, Section 17, Off-permit and Section 502(b)(10) Changes. Therefore, no permit revision is required at this time and you may proceed with the project as described by your permit application. The previously omitted equipment, the A360 Mixing Booth, will be incorporated into the permit description of the A360 coating system (Emission Unit 20) at the next revision or renewal, whichever comes first.

EU 23

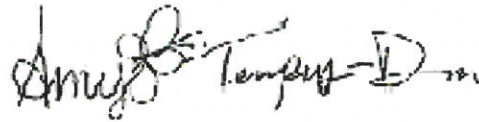
Since the overlooked equipment does not emit, there will be no impact to the Kentucky Emission Inventory System (KYEIS) for this change. All of the conditions regarding the A360 Spray Booths (EU 20) will remain unchanged from those currently specified in F-13-023 R4.

This letter does not exempt your source from the regulatory requirements of any other federal, state, or local agency which may have regulations that apply. You are reminded that if you intend to construct, reconstruct, or modify an air contaminant source in the future, you are

Mr. Chris Bowman
Page 2 of 2

required by regulation to apply for and, if required, be issued a permit, in accordance with 401 KAR 52:030 prior to the commencement of any construction. If you have any questions, please contact me at (502) 564-3999.

Sincerely,

A handwritten signature in black ink, appearing to read "Amy K. Tempus-Doom". The signature is fluid and cursive, with the last name being more prominent.

Amy K. Tempus-Doom, P.E.
Metallurgy Section Supervisor
Permit Review Branch
Division for Air Quality

SMC/akt

September 17, 2018

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Sandra Cooke
300 Sower Boulevard, First Floor
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC – Permit Renewal Application
Source ID: 21-015-00125
AI#: 137
Activity: APE20180004
Permit: F-13-023 R4 (current), F-18-030 (renewal)

Dear Ms. Cooke:

As requested in the letter dated July 27, 2018, we have collected as much information as possible and prepared emission calculations for all applicable insignificant activities. A summary of this information and the emission calculations are included as Attachment A. A summary of insignificant activities included in the recently submitted renewal application are included below:

Insignificant Activities:

- n Ultrasonic Cleaning (RFPC);
- n 1 Electric Curing Oven – A66 Curing (801);
- n Anti-Oxidant Coating (A123);
- n 4 Electric Curing Ovens w/ Nitrogen Scrubbers (701, 702, 703, & 802);
- n Anti-Oxidant Coating & Curing (A66);
- n NDT Line – Two Booths (FPI);
- n Paint Line – Oven 1 (W&B);
- n Paint Line – Oven 2 (W&B);
- n 3 Milling Machines (W&B);
- n 2 Deburring Booths (4 Stations – W&B);
- n Shot Peen (W&B);
- n Needling/Cut Fiber (Pre-Form);
- n Misc. Natural Gas HVAC (3.3. MMBtu/hr total for all units);
- n A123 Residual Scraping (RFPC);
- n Vapor Degreaser;
- n Natural Gas Emergency Generator (NC) – 160 HP (2004);

Terracon Consultants Inc. 611 Lunken Park Drive Cincinnati, Ohio 45226
P 513-321-5816 F 513-321-0294 terracon.com



Insignificant Activities Additional Information

SAFRAN Landing Systems ■ Walton, Kentucky

September 17, 2018 ■ Terracon Project No. N1187035



- n Natural Gas Emergency Generator (W&B) – 225 HP (2007);
- n Carbon OIP Process w/ Dust Collection;
- n RFPC Inspection Process w/ Dust Collection;
- n Gas meter Calibration (propane);
- n House Vacuum System w/ filter;
- n Finished Disk Coating and Drying with Oven;
- n Refurbishing; and
- n De-riveting.

Based on review of product safety data sheets (SDSs) and process information we have determined that the emissions from the following insignificant activities are trivial and/or negligible and should be removed from the insignificant activities list:

- n Ultrasonic Cleaning (RFPC);
- n 1 Electric Curing Oven – A66 Curing (801);
- n Anti-Oxidant Coating (A123);
- n 4 Electric Curing Ovens w/ Nitrogen Scrubbers (701, 702, 703, & 802);
- n Anti-Oxidant Coating & Curing (A66);
- n Paint Line – Oven 1 (W&B);
- n Paint Line – Oven 2 (W&B);
- n 3 Milling Machines (W&B);
- n A123 Residual Scraping (RFPC);
- n Gas Meter Calibration (propane);
- n House Vacuum System w/ filter;
- n Finished Disk Coating and Drying with Oven;
- n Refurbishing; and
- n De-riveting.

If you have any additional questions, please contact either of the undersigned at (513)

Sincerely,

for Laura K. Eaton, CPESC
Project Manager

Jodi J. Keller, CESCO
Regulatory Compliance Group Manager

Cc: Zach Luber, EHS Supervisor Safran Landing Systems

Attachment(s): Attachment A – Insignificant Activities Summary & Calculations

ATTACHMENT A
Insignificant Activities Summary & Calculations

Attachment A Insignificant Activities (IA) - Uncontrolled Potential Emissions											Additional Emission Unit Information/Comments
IA	Description	PM	PM10	NOx	SO2	CO	VOC	Total HAPs	Hydrogen Cyanide	Total PAH	
#		ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	
1	Ultrasonic Cleaning (RFPC)										No HAPs/Non-VOC Liquid - assume no emissions
2	1 Electric Curing Oven - A66 Curing (801)										Cures A66 (titanium/silica mix) onto disks; No HAPs/Non-VOC - assume no emissions
3	Anti-Oxidant Coating (A123)										No HAPs/Non-VOC - assume no emissions [50% water, 50% Phosphoric acid, aluminum salt (3:1)]
4	4 Electric Curing Ovens w/ Nitrogen & Scrubbers (701, 702, 703, & 802)										Cures A123 onto disks (MALP SDS); scrubbers are used to drop pH; nitrogen is used in the furnace during the curing porcess; No HAPs/Non-VOC Liquid - assume no emissions
5	Anti-Oxidant Coating & Curing (A66)										No HAPs/Non-VOC - assume no emissions
6	NDT Line - two booths (FPI)										Androx 9704 (60% distillates)/ Androx 9D4A (faciliy used 1/2 a 55-gallon drum in the past 5 years) - assume emissions are negligible.
7	Paint Line - Oven 1 (W&B)										Electric Oven - trivial activity #29 (VOC emissions already accounted for)
8	Paint Line - Oven 2 (W&B)										Electric Oven - trivial activity #29 (VOC emissions already accounted for)
9	3 Milling Machines (W&B)										Mikron & Okuma (closed loop system, B-cool 755 coolant, VOC content 8.3 g/l, no process vents/enclosed) - assume emissions are negligible
10	2 Deburring Booths (4 Stations - W&B)	0.12	0.12	0.12							Open in the front, vents to dust collector
11	Shot Peen (W&B)	0.06	0.06	0.06							1 part every 17 minutes, 0.22 lb shot per part collected
12	Needling/Cut Fiber (Pre-Form)	12.00	12.00	12.00							Vents to dust collector/vents inside
13	Misc. natural gas HVAC 3.3 MMBtu/hr (total for all units)	0.11	0.03	0.71	0.01	1.19	0.08	0.03			See Calculations
14	A 123 Residual Scraping (RFPC)										No HAPs/Non-VOC Liquid - assume no emisisions
15	Vapor Degreaser						0.04				Perchloroethylene solution only; boiler & chiller are electric; closed-loop system; cycle usage not measurable (only 2 55 gallon drums were used in the last 10 years)
16	Natural Gas Emergency Generator (NC) - 160 HP (2004)	0.00	0.00	1.14	0.00	0.09	0.03	0.02		0.00	See Calculations
17	Natural Gas Emergency Generator (W&B) - 225 HP (2007)	0.00	0.00	1.61	0.00	0.12	0.05	0.03		0.00	See Calculations
18	Carbon OIP Process w/ dust collection system, vents inside	0.98									Emissions assumed based on 2011 application; increased by 30%
19	RFPC Inspection Process w/ dust collection system, vents inside	0.20									Emissions assumed based on 2011 application; increased by 30%
20	Gas Meter Calibration (propane)										Emissions are negligible/considered routine maintenance
21	House Vacuum System w/ filter										PM emissions are already accounted for
22	Finished Disk Coating and Drying with Oven										No HAPS/Non-VOC Liquid (same as A66 and 801 curring) - assume no emisisions
23	Refurbishing										Remove from IA list; vent to same dust collection as Mazacs
24	De-riveting										Remove from IA list; vent to same dust collection as Mazacs
Total		13.47	12.22	15.65	0.01	1.40	0.19	0.08	0.00	0.00	

Pre-Form (Needling/Cutting Machines)

Emission Factor = 18 Based on the uncontrolled EF located in the "PTE-Actuals" spreadsheet at M:\EHS\Environmental\Air\Permitting\Facility Conditional Major
Control Efficiency = 0.999 Permit\2006 Renewal, (0.009 x 2000) = 18 lbs. PT per ton processed

Pre-Form Potential-to-Emit Calculations

Basis:

Uncontrolled Emissions (tons /yr) = EF (lb PM/1,000 lb abrasive) x Maximum Usage (lb x 10⁻³) (1 ton/2000 lbs)

Equipment ID	Dust Collector (CFM)	Control Efficiency %	Ventilation	Filter Type	Exempt?
Pre-Form	UKN	99%	Inside	Cartridge	IA

Variables	Value	Units	Source
Maximum Tons Process	1,334	ton	Facility Data ¹
Emission Factor	18	lb/ton processed	Facility Data ¹
Maximum Operating hours	8,760	hrs/yr	-

1,026.00 tons processed in 2018
1,333.80 SF of 30%

Pollutant	Uncontrolled Emissions Summary			Controlled Emissions Summary		
	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr
PM ²	2.74	24,008	12.00	0.03	240	0.12

¹Calculated from data provided by facility.

²PMTotal = PM10 = PM2.5

Natural Gas Emergency Pump #1

Emergency Generator Data Inputs	
Total Max. Input Capacity	UOM
500	hrs/yr
160	hp/hr
1.12000	Btu/hr

Note: 1 kW = 1.34102 hp
7,000 Btu per 1 hp-hr

Emission Factors			
Pollutant	EF	UOM	Source
PM	9.91E-03	lb/MMBtu	AP-42, Table 3.2-2
PM10	7.71E-05	lb/MMBtu	AP-42, Table 3.2-2
NOx	4.08E+00	lb/MMBtu	AP-42, Table 3.2-2
SO2	5.88E-04	lb/MMBtu	AP-42, Table 3.2-2
CO	3.17E-01	lb/MMBtu	AP-42, Table 3.2-2
VOC	1.18E-01	lb/MMBtu	AP-42, Table 3.2-2
Total PAH	2.69E-05	lb/MMBtu	See NG 4-Stroke Lean Tab
Total HAPs	7.22E-02	lb/MMBtu	See NG 4-Stroke Lean Tab

Potential Emissions			
Pollutant	Uncontrolled		
	lb/hr	lb/day	ton/year
PM	0.01	0.27	0.00
PM10	0.00	0.00	0.00
NOx	4.57	109.67	1.14
SO2	0.00	0.02	0.00
CO	0.36	8.52	0.09
VOC	0.13	3.17	0.03
Total PAH	0.00	0.00	0.00
Total HAPs	0.08	1.94	0.02

Natural Gas Emergency Pump #2

Emergency Generator Data Inputs	
Total Max. Input Capacity	UOM
500	hrs/yr
225	hp/hr
1.57500	Btu/hr

Note: 1 kW = 1.34102 hp
7,000 Btu per 1 hp-hr

Emission Factors			
Pollutant	EF	UOM	Source
PM	9.91E-03	lb/MMBtu	AP-42, Table 3.2-2
PM10	7.71E-05	lb/MMBtu	AP-42, Table 3.2-2
NOx	4.08E+00	lb/MMBtu	AP-42, Table 3.2-2
SO2	5.88E-04	lb/MMBtu	AP-42, Table 3.2-2
CO	3.17E-01	lb/MMBtu	AP-42, Table 3.2-2
VOC	1.18E-01	lb/MMBtu	AP-42, Table 3.2-2
Total PAH	2.69E-05	lb/MMBtu	See NG 4-Stroke Lean Tab
Total HAPs	7.22E-02	lb/MMBtu	See NG 4-Stroke Lean Tab

Potential Emissions			
Pollutant	Uncontrolled		
	lb/hr	lb/day	ton/year
PM	0.02	0.37	0.00
PM10	0.00	0.00	0.00
NOx	6.43	154.22	1.61
SO2	0.00	0.02	0.00
CO	0.50	11.98	0.12
VOC	0.19	4.46	0.05
Total PAH	0.00	0.00	0.00
Total HAPs	0.11	2.73	0.03

Natural Gas HVAC

HVAC Data Inputs ¹	
Total Max. Input Capacity	UOM
3.3	MMBtu/hr
3,300,000	Btu/hr
3,235	CF NG/hr
0.0032	MMCF NG/hr

¹All HVAC units are < 1 MMBtu/hr

Note: 1 CF NG = 1,020 BTU

Emission Factors			
Pollutant	EF	UOM	Source
PM	7.6	lb/MMCF	AP-42, Table 1.4-2
PM10	1.9	lb/MMCF	AP-42, Table 1.4-2
NOx	50	lb/MMCF	AP-42, Table 1.4-1
SO2	0.6	lb/MMCF	AP-42, Table 1.4-2
CO	84	lb/MMCF	AP-42, Table 1.4-1
VOC	5.5	lb/MMCF	AP-42, Table 1.4-2
Total HAPs	See NG Comb. HAP Tab		

Potential Emissions from Misc. NG HVAC Units			
Pollutant	Uncontrolled		
	lb/hr	lb/day	ton/year
PM	0.02	0.59	0.1
PM10	0.01	0.15	0.0
NOx	0.16	3.88	0.7
SO2	0.00	0.05	0.0
CO	0.27	6.52	1.2
VOC	0.02	0.43	0.1
Total HAPs	0.01	0.15	0.0

Potential Organic Compound Emissions			
Pollutant	Uncontrolled		
	lb/hr	lb/day	ton/yr
2-Methylnaphthalene*	0.00	0.00	3.40E-07
3-Methylchloranthrene*	0.00	0.00	2.55E-08
7,12-Dimethylbenz(a)anthracene*	0.00	0.00	2.27E-07
Acenaphthene*	0.00	0.00	2.55E-08
Acenaphthylene*	0.00	0.00	2.55E-08
Anthracene*	0.00	0.00	3.40E-08
Benz(a)anthracene*	0.00	0.00	2.55E-08
Benzene*	0.00	0.00	2.98E-05
Benzo(a)pyrene*	0.00	0.00	1.70E-08
Benzo(a)fluoranthene*	0.00	0.00	2.55E-08
Benzo(g,h,i)perylene*	0.00	0.00	1.70E-08
Benzo(k)fluoranthene*	0.00	0.00	2.55E-08
Butane	0.01	0.16	2.98E-02
Chrysene*	0.00	0.00	2.55E-08
Dibenzo(a,h)anthracene*	0.00	0.00	1.70E-08
Dichlorobenzene*	0.00	0.00	1.70E-05
Ethane	0.01	0.24	4.39E-02
Fluoranthene*	0.00	0.00	4.25E-08
Fluorene*	0.00	0.00	3.97E-08
Formaldehyde*	0.00	0.01	1.06E-03
Hexane*	0.01	0.14	2.55E-02
Indeno(1,2,3-cd)pyrene*	0.00	0.00	2.55E-08
Naphthalene*	0.00	0.00	8.64E-06
Pentane	0.01	0.20	3.68E-02
Phenanthrene*	0.00	0.00	2.41E-07
Propane	0.01	0.12	2.27E-02
Pyrene*	0.00	0.00	7.09E-08
Toluene*	0.00	0.00	4.82E-05
Single Highest HAP	0.01	0.14	0.03
Total HAP	0.01	0.15	0.03

*Hazardous Air Pollutant (HAP)

Vapor Degreaser Potential-to-Emit Calculations

Basis:

Uncontrolled Emissions (tons /yr) = EF (lb VOC/ lb gal) x Maximum Usage (gal/yr) * (1 ton/2000 lbs)

Equipment ID	Dust Collector (CFM)	Control Efficiency %	Ventilation	Filter Type	Exempt?
Vapor Degreaser	UKN	0%	Inside	N/A	IA

Variables	Value	Units	Source
Maximum Usage	11	gallons/yr	Facility Data ¹
VOC Content	6.50	lb/gal	Facility Data ¹
Maximum Operating hours	8,760	hrs/yr	-

Pollutant	Uncontrolled Emissions Summary			Controlled Emissions Summary		
	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr
VOC	0.01	71.50	0.04	0.00	0.72	0.00

¹Calculated from data provided by facility (2*55 gallons/10 years).

Blasting Operations Potential-to-Emit Calculations

Basis:

Uncontrolled Emissions (tons /yr) = EF (lb PM/1,000 lb abrasive) x Maximum Usage (lb x 10⁻³) (1 ton/2000 lbs)

Equipment ID	Dust Collector (CFM)	Control Efficiency %	Ventilation	Filter Type	Exempt?
Shot Peen	UKN	95%	Inside	Cartridge	IA

Variables	Value	Units	Source
Maximum Usage (Zirblast)	172,413	lb	Facility Data ¹
Emission Factor	0.690	lb/1,000 lb abrasive	Ap-42 Table 13.2.6-1
Maximum Parts	515	Units	Facility Data ¹
Maximum Operating hours	8,760	hrs/yr	-

Pollutant	Uncontrolled Emissions Summary			Controlled Emissions Summary		
	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr
PM ²	0.01	119	0.06	0.00	6	0.00

¹Calculated from data provided by facility.

²PMTotal = PM10 = PM2.5

Blasting Operations Potential-to-Emit Calculations

Basis:

Uncontrolled Emissions (tons /yr) = EF (lb PM/1,000 lb abrasive) x Maximum Usage (lb x 10⁻³) (1 ton/2000 lbs)

Equipment ID	Dust Collector (CFM)	Control Efficiency %	Ventilation	Filter Type	Exempt?
Deburring	UKN	90%	Inside	Cartridge	IA

Variables	Value	Units	Source
Maximum Usage ¹	180,623	lb	Facility Data ¹
Emission Factor	0.690	lb/1,000 lb abrasive	Ap-42 Table 13.2.6-1
Maximum Parts	515	Units	Facility Data ¹
Maximum Operating hours	8,760	hrs/yr	-

Pollutant	Uncontrolled Emissions Summary			Controlled Emissions Summary		
	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr
PM ²	0.01	125	0.06	0.00	11	0.01

¹ Assumed the same number of parts are processed as shot peen.

² PMTotal = PM10 = PM2.5

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007DD

Insignificant Activities

Section DD.1: Table of Insignificant Activities

Section DD.2: Signature Block

Section DD.3: Notes, Comments, and Explanations

Source Name:

Safran Landing Systems Kentucky LLC

KY EIS (AFS) #:

21- 015-0025

Permit #:

F-13-023-R4

Agency Interest (AI) ID:

137

Date:

12/17/2024

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA03	Anti-Oxidant Coating	(A123)	401 KAR 63:010	PM Emissions 4.93 tons/yr
IA13	2 Deburring Booths	(4 Stations - W&B)	None	PM Emissions 2.5 tons/yr
IA14	2 Shot Peen Machines	(W&B)	None	PM Emissions 2.5 tons/yr
IA33	Anodizing Line	Controlled by SO2 scrubber w/ 2 electric ovens (W&B)	401 KAR 59:010	Sulfuric Acid Mist - 0.0073 tons/yr Nickel - 0.00193 tons/yr

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD**Insignificant Activities**

- ☒ Section DD.1: Table of Insignificant Activities
- ☒ Section DD.2: Signature Block
- ☒ Section DD.3: Notes, Comments, and Explanations

Source Name: Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/6/2024

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA01	Ultrasonic Cleaning	(RFPC)	None	No Emissions Expected
IA02	2 Electric Curing Ovens	(801 and 802)	None	No Emissions Expected
IA03	Anti-Oxidant Coating	(A123)	401 KAR 63:010	To Be Determined
IA04	2 Electric Curing Ovens w/ Nitrogen Scrubbers	(702 and 703)	None	No Emissions Expected
IA08	Anti-Oxidant Coating	(A66)	401 KAR 59:010	PM Emissions: 4.93 TPY

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA09	NDT Line - 2 Spray Booth	(FPI)	None	VOC Emissions: 0.013 TPY
IA12	6 Milling Machines	(W&B)	None	No emissions expected
IA13	2 Deburring Booths	(4 Stations - W&B)	None	To Be Determined
IA14	2 Shot Peen Machines	(W&B)	None	To Be Determined
IA15	Pre-Form Needling/Cut Fiber	(Pre-Form)	401 KAR 59:010	PM Emissions: 0.004 TPY PM10 Emissions: 1.36E-04 TPY
IA16	Misc. natural gas HVAC	3.3 MMBtu/hr. (total for all units)	None	Nox Emissions: 0.354 TPY; SO2 Emissions: 0.004 TPY; CO Emissions: 0.595 TPY; PM Emissions: 0.54 TPY; VOC Emissions: 0.039 TPY

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:

Authorized Signature

Date

Type/Print Name of Signatory

Title of Signatory

Section DD.3: Notes, Comments, and Explanations

Division for Air Quality
300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD

Insignificant Activities

- ☒ Section DD.1: Table of Insignificant Activities
- ☒ Section DD.2: Signature Block
- ☒ Section DD.3: Notes, Comments, and Explanations

Source Name: Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/6/2024

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

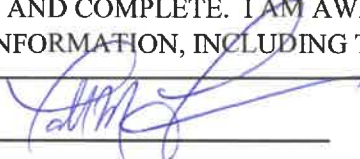
Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA18	2 Vapor Degreasers	(W&B)	None	No emissions expected
IA21	2 Carbon OIP Machines	(OIP)	401 KAR 59:010	PM Emissions: 1.5 TPY
IA22	RFPC Inspection Process	(RFPC)	401 KAR 59:010	PM Emissions: 0.15 TPY
IA23	Gas Meter Calibration (propane)	(Propane System)	401 KAR 63:010	VOC Emissions(Propane): 0.513 TPY
IA24	House Vacuum System w/ filter	(Carbon 1)	401 KAR 59:010	PM Emissions: 0.15 TPY

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA29	De-riveting	(RFPC)	401 KAR 59:010	PM Emissions: 0.0125 TPY
IA30	Shim Cleaner	(brush, no solvent)	401 KAR 59:010	PM Emissions: 1.25 TPY
IA31	A66 Mixing Booth	(water-based)	None	No Emissions Expected
IA32	Engravers ~6	(1 per line)	401 KAR 63:010	No Emissions Expected
IA33	Anodizing Line	Controlled by SO2 scrubber w/ 2 electric ovens (W&B)	401 KAR 59:010	To be Determined
IA34	2 Water-Based Clamshells (Cleaning)	(W&B)	401 KAR 59:010	No expected emissions
IA35	House Vacuum System w/ filter	(Carbon 5)	401 KAR 59:010	PM Emissions: 0.15 TPY

Section DD.2: Signature Block

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By:


Authorized Signature

Todd M. Foster
Type/Print Name of Signatory

12/6/24
Date

HSE Engineering Manager
Title of Signatory

Section DD.3: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD**Insignificant Activities**

___ Section DD.1: Table of Insignificant Activities

___ Section DD.2: Signature Block

___ Section DD.3: Notes, Comments, and Explanations

Source Name: Safran Landing Systems Kentucky LLCKY EIS (AFS) #: 21- 015-0025Permit #: F-13-023-R4Agency Interest (AI) ID: 137Date: 1/27/2026**Section DD.1: Table of Insignificant Activities**

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

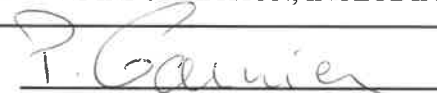
Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA 36	Electric Rework Oven (60KW) (3 parts/week)	W&B Rework Oven	401 KAR 63:020	VOC 0.1279 tons/year; xylene 0.0215 tons/year; ethylbenzene 0.0072 tons/year; MEK 0.0232 tons/year

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions

Section DD.2: Signature Block

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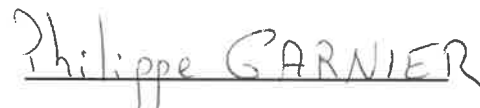
By:



Authorized Signature



Date



Type/Print Name of Signatory



Title of Signatory

Section DD.3: Notes, Comments, and Explanations

Touch ups are brushed on, no PM expected emissions from this activity. If spraying occurs for a touchup it is done inside the spray booths which capture PM in the filter system. Rework Oven temperature does not reach sufficient temperatures (1000C) to decompose and volatilize chromates (rework oven max temperature is 300F).

No strontium chromate or barium chromate emissions expected. The only emissions expected from this activity are VOC's. See section DD.1 for estimated emissions.

The rework oven has a capacity of 1 part per hour. The PTE is calculated based on max throughput of 8760 parts per year.



December 5, 2024

Kentucky Department for Environmental Protection
 Division for Air Quality
 Attn: Air Permit Support Section
 300 Sower Boulevard, First Floor
 Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC – Permit Renewal Application
 Source ID: 21-015-00125
 AI#: 137
 Permit: F-13-023 R4

Amy,

Pursuant to 401 KAR 52:030, Section 4, Safran Landing Systems Kentucky LLC (Safran) is re-submitting its air permit renewal application for our facility located at One Carbon Way, Walton, Kentucky 41094. Permit F-13-023 R4 expired on November 19, 2018, and although Safran had previously submitted a permit renewal application on May 17, 2018, this re-submission of the application is a more accurate reflection of current facility equipment and operations. This information will also help to correct or improve information currently on file with DAQ.

Below is a list of the forms submitted in this re-submittal:

Form ID	Description	Submitted
DEP7007A	Indirect Heat Exchangers - Boilers	12/3/2024
DEP7007EE	Internal Combustion Engines - Emer Gen and Pumps	12/3/2024
DEP7007N	Boiler 1	12/3/2024
DEP7007N	Boiler 2	12/3/2024
DEP7007N	Boiler 3	12/3/2024
DEP7007N	Boiler 4	12/3/2024
DEP7007N	Boiler 5	12/3/2024
DEP7007N	EG#1	12/3/2024
DEP7007N	EG#2	12/3/2024
DEP7007N	EG#3	12/3/2024
DEP7007N	EG#4	12/3/2024

DEP7007N	EP#1	12/3/2024
DEP7007N	EP#2	12/3/2024
DEP7007N	EP#3	12/3/2024
DEP7007N	EP#4	12/3/2024
DEP7007N	Carbonizing Reactors	12/3/2024
DEP7007N	Contact Cooling Towers	12/3/2024
DEP7007N	Non-Contact Cooling Towers	12/3/2024
DEP7007B	Manufacturing or Processing Operations - Carbonizing	12/5/2024
DEP7007B	Manufacturing or Processing Operations - Cooling	12/5/2024
DEP7007DD	Insignificant Activities	12/6/2024
DEP7007V	Applicable Requirements and Compliance Activities	12/5/2024
DEP7007N	Machining	12/5/2024
DEP7007GG	Control Equipment	12/5/2024
DEP7007K	Surface Coating – Paint Lines	12/6/2024
DEP7007N	Paint Lines	12/6/2024
DEP7007N	Thermal Wells (B500/600)	12/5/2024
N/A	Updated OM&M	12/5/2024
N/A	Process Diagrams	12/5/2024

Per the discussions with you during Safran's visit to DAQ offices in October, my Team and I explained in detail the intricacies of our manufacturing processes, as well as how the processes may impact emissions. We also discussed several other topics in order to better clarify Safran's position and/or to explain our reasoning. Following are brief summaries that better explain Safran's rationale:

- The 481 and 482 reactors were converted from combination reactors (Carbonization + Heat Treat processes) to Heat Treat ONLY reactors because the facility increased its Carbonization process capacity by adding 49X reactors. Since the Heat Treat process is meant solely to molecularly align the Carbon within the disks post densification (infiltration) process, there are no emissions from the Heat Treat process. Therefore, the 481 and 482 reactors are removed from the permit application as emissions sources.
- For all of the Carbonization, Infiltration, Heat Treat and Curing vessels onsite, the more appropriate term for them is "Reactor" and not "Furnace," as they have been referred to in previous permits. The term "Furnace" denotes the burning, charring or even melting of a material, and this is not the case at this site. Instead, we create chemical and/or molecular reactions in our vessels using very high temperatures (using electricity, not fuel) as the reaction catalyst. Therefore, Safran has replaced all "Furnace" terminology with the word "Reactor."
- In order to have the Boiler designations more closely align with site operations and nomenclature, Boilers 5 and 6 are renamed Boilers 4 and 5, respectively. The Anodize Boiler #4 is renamed W&B Boiler, and Boilers 1, 2 and 3 remain unchanged.

- With respect to the CVI reactor start-up venting described in Section B, Emission Unit 02 (02), venting of the natural gas-propane process gas mix is no longer expected under normal operation. When this emission was first calculated for the site's original air permit application, it was done by calculating the "worst possible instance." The previous calculation assumed that all of the process gas that was passed through the furnace during the start-up step (that has the system open to the atmosphere) was allowed to escape the system.

For this air permit renewal application, however, we performed the calculation again, but this time more accurate information was used to make the calculation:

1. The volume of the furnace and piping was taken into account;
2. The *ramping-up flowrate* of the process gas was used instead of assuming 100% process gas flows from the start; and
3. The total time that the system is open to the air was observed from the site's equipment software (12 seconds) and used in the calculation instead of using the entire start-up step time.

When these three changes were made, the results showed that not enough process gas is passed through the system at the cycle start to reach the vent before the vent is switched off. From this, it was proven that no process gas is released during any CVI furnace start-up, so this potential emission point is removed.

- For the permit limits of Hydrogen Cyanide gas (HCN) from the thermal oxidizers, Safran has determined/calculated an emission factor based upon the following:
 1. Every emissions test for each of the thermal oxidizer exhausts has shown "No Detect" levels, meaning that at the sensitivity level of the approved EPA Test Methodology used for the tests, we have never detected any level of HCN.
 2. Using the detection limit of the EPA Test Methodology, we back-calculated a DE of 99.999991% for the tests, which was then used to create an emission rate. However, Safran believes the DE to be 100% because:
 - a. HCN destructs fully at 1,000F;
 - b. The thermal oxidizer chamber temperatures vary slightly among the units, but they are all maintained at a minimum chamber temperature of 1,700F (November 2024 emissions tests); and
 - c. Safran's environmental ethos is to ensure to the best of our ability that zero HCN is emitted into the surrounding environment, so we intentionally run our thermal oxidizers at much higher temperatures than is needed to be sure that zero HCN is emitted.

- Per the KY EIS for Inventory Year 2023, the following equipment/processes are to be removed as emissions sources:

EQPT0000000002 – Carbonizing Furnaces 481 and 482: These Reactors have been converted to Heat Treat-only reactors, and the Heat Treat process does not create emissions.

EQPT0000000003 – Infiltration Boilers/Furnaces: The CVI Reactors do not emit to the environment, and the “Furnaces” of this process should not be included as emissions sources.

EQPT0000000009 – Chemical Storage and Transfer System: This process was decommissioned and removed.

EQPT0000000010 – Developmental Equipment: This process was decommissioned and removed.

EQPT0000000012 – Infiltration Furnaces #601, 602, 603: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000021 – Infiltration Furnaces 604-609: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000024 – A-360 Spray Booths: This process was never installed.

- With the removal of Infiltration Furnaces (above) as emissions sources in the air permit, it is more accurate to include these reactors within the entire scope of the Carbon Vapor Infiltration (CVI) production process. The CVI production process includes these reactors, boilers, and vacuum towers as the main process drivers. The CVI production process is symbiotic in that:
 1. The CVI reactors require vacuum to operate, and they generate natural gas effluent (NGE);
 2. The vacuum required to operate the reactors is created in the vacuum towers via steam-venturi systems;
 3. The steam utilized in the venturis is produced by the boilers; and
 4. The boilers burn the CVI reactor NGE (and natural gas) as fuel to generate the process steam.

The main contributor to CVI production process emissions is the boilers, and the boiler emissions are created from burning the NGE and natural gas.

Thermal wells (atmospheric settling tanks) and condensate towers are also required CVI production process equipment. They also emit much smaller amounts of VOC's to the environment:

- The thermal wells contain condensed steam (water) and a vapor head space that is saturated with water and 'light' VOC's. As these thermal wells are atmospheric, the tanks breathe as varying amounts of steam is condensed and as varying amounts of water is withdrawn to the recycling loop and condensate towers. Small amounts of VOC's are emitted to the environment as the vapor head space contracts.
- The condensate towers receive a water (condensed steam) slip-stream from the thermal wells, cool it for return to the process, and release some VOC's to the environment.

Even though the CVI production process comprises many reactors, boilers, vacuum towers, thermal wells and condensate towers of varying sizes and in different buildings, the entire CVI production process is interconnected – all NGE and steam have the ability to be contained in common headers. This means that the NGE produced by a single CVI reactor can be utilized as fuel in any of the five boilers, and steam produced by any of the

boilers may be used in any of the vacuum towers to create vacuum for any of the CVI reactors.

The facility tracks and records the amount of steam produced in each boiler, and this data is then used, along with natural gas usage (metered), to calculate the amount of NGE used in each boiler. Based on the total fuel usage, the facility then uses emissions factors (from emissions tests and AP-42 factors) to determine the emissions for each boiler.

If you have any additional questions, please contact me at 859-479-6943.

Sincerely,
Safran Landing Systems Kentucky LLC

Todd M. Foster
HSE Engineering Manager

Section AI.4: Type of Application

Current Status:	☐ Title V	☒ Conditional Major	☐ State-Origin	☐ General Permit	☐ Registration	☐ None
Requested Action: (check all that apply)	☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment		
	☒ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide Operating Permit		
	☐ 502(b)(10) Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice		
	☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities		
	☐ Ownership Change	☐ Closure				
Requested Status:	☐ Title V	☒ Conditional Major	☐ State-Origin	☐ PSD	☐ NSR	☐ Other: _____

Is the source requesting a limitation of potential emissions?

☒ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☒ Particulate Matter	<u>90</u>	☒ Single HAP	<u>9</u>
☒ Volatile Organic Compounds (VOC)	<u>90</u>	☒ Combined HAPs	<u>22.5</u>
☐ Carbon Monoxide	_____	☐ Air Toxics (40 CFR 68, Subpart F)	_____
☐ Nitrogen Oxides	_____	☐ Carbon Dioxide	_____
☐ Sulfur Dioxide	_____	☐ Greenhouse Gases (GHG)	_____
☐ Lead	_____	☐ Other	_____

For New Construction:

Proposed Start Date of Construction:
(MM/YYYY)

Proposed Operation Start-Up Date: (MM/YYYY)

For Modifications:

Proposed Start Date of Modification:
(MM/YYYY)

Proposed Operation Start-Up Date: (MM/YYYY)

Applicant is seeking coverage under a permit shield.

☐ Yes

☒ No

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- | | |
|--|--|
| ☒ DEP7007A Indirect Heat Exchangers and Turbines | ☐ DEP7007CC Compliance Certification |
| ☒ DEP7007B Manufacturing or Processing Operations | ☒ DEP7007DD Insignificant Activities |
| ☐ DEP7007C Incinerators and Waste Burners | ☒ DEP7007EE Internal Combustion Engines |
| ☐ DEP7007F Episode Standby Plan | ☐ DEP7007FF Secondary Aluminum Processing |
| ☐ DEP7007J Volatile Liquid Storage | ☐ DEP7007GG Control Equipment |
| ☒ DEP7007K Surface Coating or Printing Operations | ☐ DEP7007HH Haul Roads |
| ☐ DEP7007L Mineral Processes | ☐ Confidentiality Claim |
| ☐ DEP7007M Metal Cleaning Degreasers | ☐ Ownership Change Form |
| ☒ DEP7007N Source Emissions Profile | ☐ Secretary of State Certificate |
| ☐ DEP7007P Perchloroethylene Dry Cleaning Systems | ☒ Flowcharts or diagrams depicting process |
| ☐ DEP7007R Emission Offset Credit | ☐ Digital Line Graphs (DLG) files of buildings, roads, etc. |
| ☐ DEP7007S Service Stations | ☒ Site Map |
| ☐ DEP7007T Metal Plating and Surface Treatment Operations | ☒ Map or drawing depicting location of facility |
| ☒ DEP7007V Applicable Requirements and Compliance Activities | ☐ Safety Data Sheet (SDS) |
| ☐ DEP7007Y Good Engineering Practice and Stack Height Determination | ☐ Emergency Response Plan |
| ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units | ☐ Other: _____ |
| ☐ DEP7007BB Certified Progress Report | |

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature



Digitally signed by GARNIER
Philippe G (SAFRAN
LANDING SYSTEMS)
Date: 2024.07.02 09:20:21
-04'00'

Philippe Garnier

Type or Printed Name of Signatory

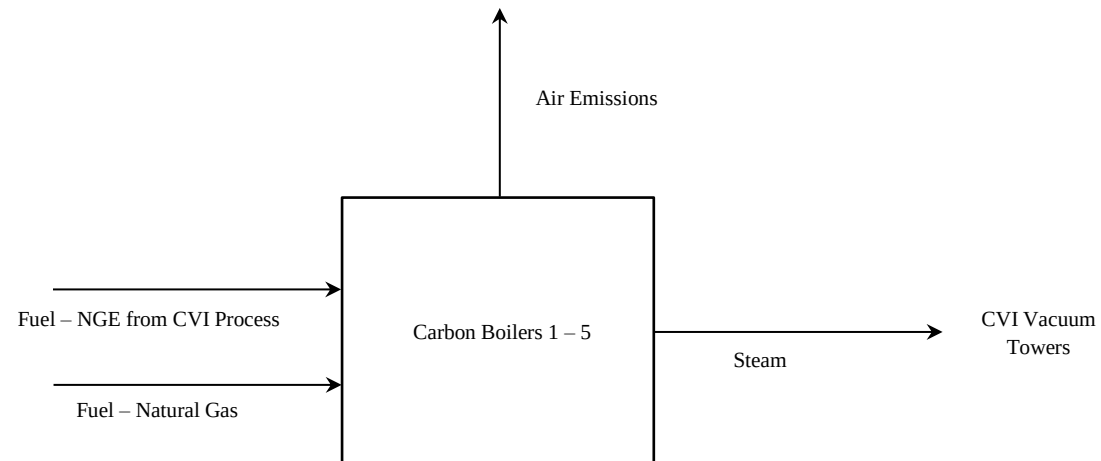
Date

CEO and General Manager

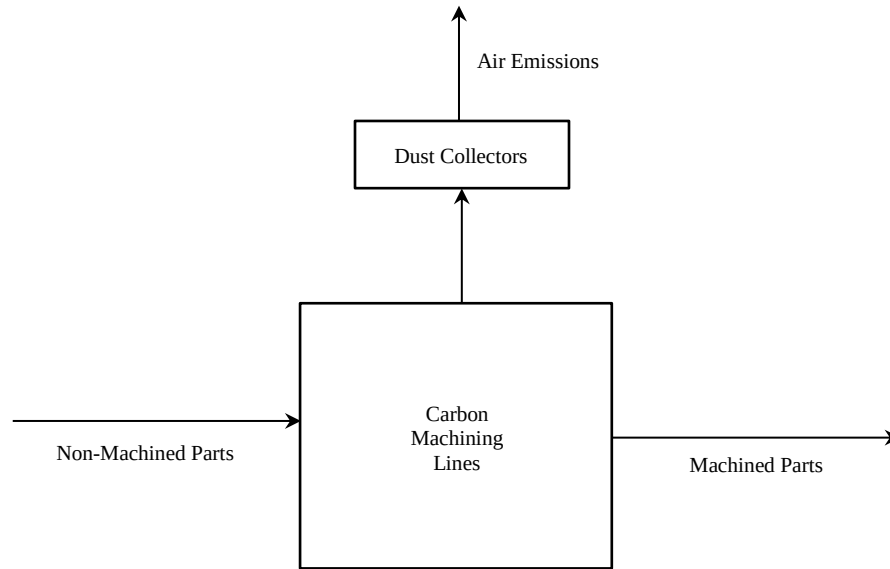
Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

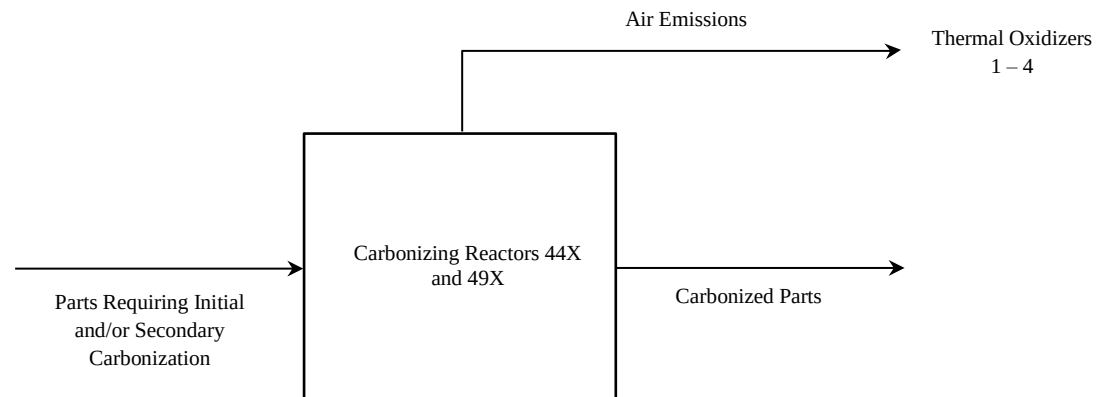
CARBON BOILERS PROCESS FLOW DIAGRAM



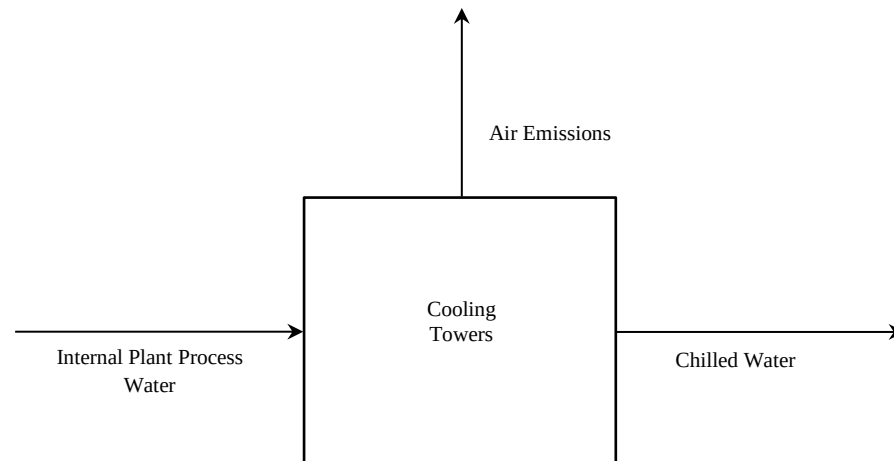
CARBON MACHINING PROCESS FLOW DIAGRAM



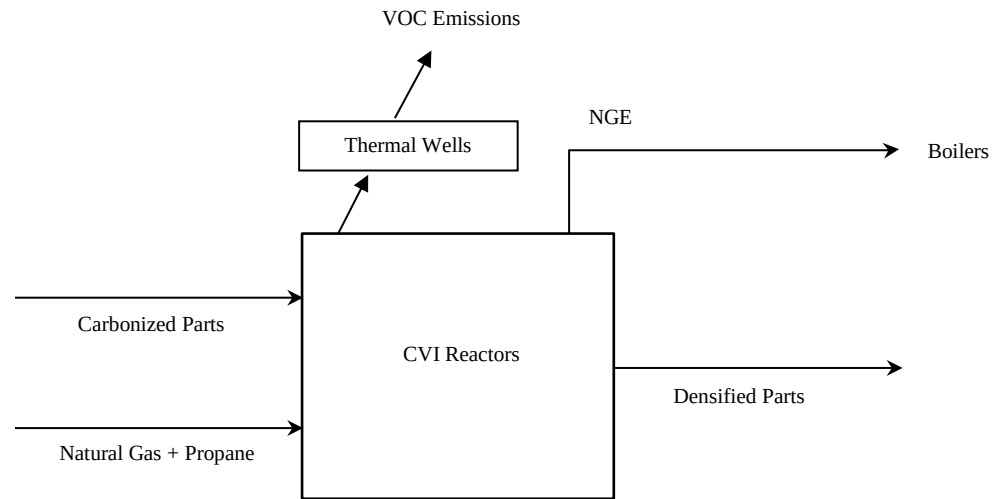
CARBONIZING REACTOR PROCESS FLOW DIAGRAM



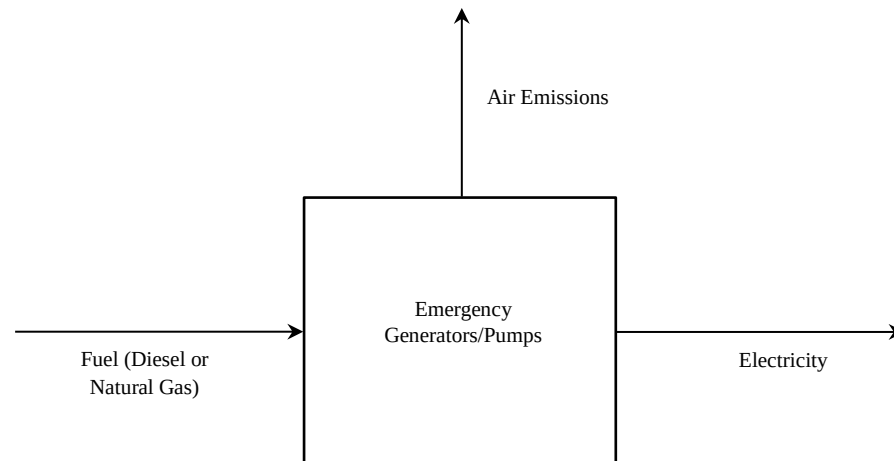
PROCESS FLOW DIAGRAM



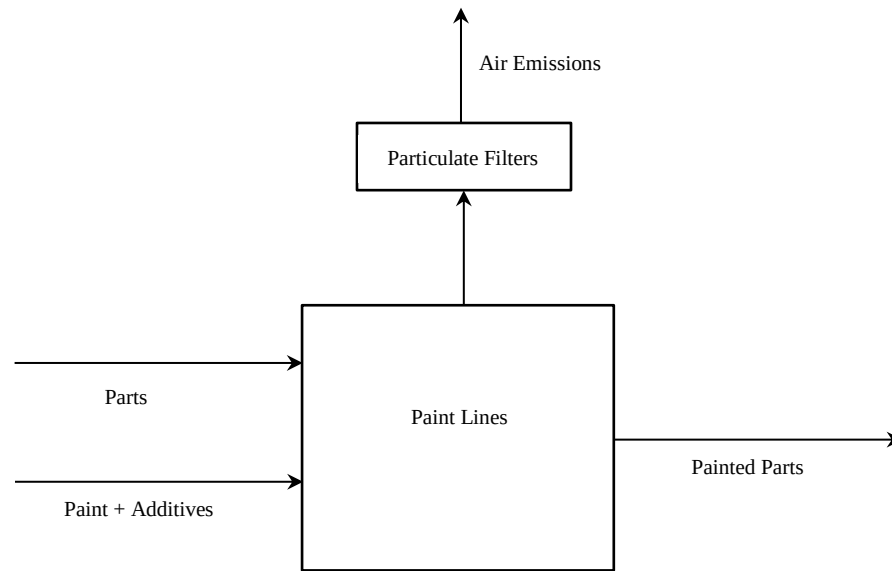
CVI PROCESS FLOW DIAGRAM



EMERGENCY GENERATOR / PUMP PROCESS FLOW DIAGRAM



PAINT PROCESS FLOW DIAGRAM



Division for Air Quality

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DEP7007A

Indirect Heat Exchangers and Turbines

- ☒ Section A.1: General Information
☒ Section A.2: Operating and Fuel Information
☒ Section A.3: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI, DEP7007N,
DEP7007V, and DEP7007GG.

☐ Manufacturer's specifications

Source Name: Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21-015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/3/2024

Section A.1: General Information

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	SCC Code	SCC Units	Control Device ID	Stack ID
EU01	Boilers	01	Boiler 1	Boiler	Gas-fired	Cleaver Brooks	CB11-700-800-250 / OLO98972	1999	1-02-006-02	MMCFt.	Low-NOx	C-B1
EU01	Boilers	01	Boiler 2	Boiler	Gas-fired	Cleaver Brooks	CB1-700-800-250 / OLO100281	2000	1-02-006-02	MMCFt.	Low-NOx	C-B2
EU01	Boilers	01	Boiler 3	Boiler	Gas-fired	Cleaver Brooks	CBLE-700-800-250ST	2012	1-02-006-02	MMCFt.	Low-NOx	C-B3
EU01	Boilers	01	W&B Boiler	Boiler	Gas-fired	Fulton	VMP40	2007	1-02-006-03	MMCFt.	Low-NOx	WB-B1
EU01	Boilers	01	Boiler 4	Boiler	Gas-fired	Cleaver Brooks	CBEX-E700-1000-250ST / T6056-1-1	2017	1-02-006-02	MMCFt.	Low-NOx	C-B4
EU01	Boilers	01	Boiler 5	Boiler	Gas-fired	Cleaver Brooks	CBEX-E700-1000-250ST / T6056-1-2	2017	1-02-006-02	MMCFt.	Low-NOx	C-B5

Section A.2: Operating and Fuel Information

Emission Unit #	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity Heat Input (MMBTU/hr)	Rated Capacity Power Output		Describe Operating Scenario (only if this unit will be used in different configurations)	Classify Fuel as Primary or Secondary	Identify Fuel Type: Coal, Natural Gas, Wood, Biomass, Landfill/Digester Gas, Fuel Oil # (specify 1-6), or Other	Heat Content (HHV)		Maximum Operating Hours	Ash Content (%)	Sulfur Content (%)
	Space Heat	Process Heat	Power	Emergency			(Specify units: hp, MW, or lb steam/hr)					(Specify units: Btu/lb, Btu/gal, or Btu/scf)			
Boiler 1	0	100	0	0	32.658	800	hp	NA	Primary	NGE (Natural Gas Effluent)	800	Btu/scf	8,760	0	0
Boiler 2	0	100	0	0	32.658	800	hp	NA	Primary	NGE (Natural Gas Effluent)	800	Btu/scf	8,760	0	0
Boiler 3	0	100	0	0	31.434	800	hp	NA	Primary	NGE (Natural Gas Effluent)	800	Btu/scf	8,760	0	0
W&B Boiler	0	100	0	0	1.595	40	hp	NA	Primary	NG (Natural Gas)	1020	Btu/scf	8,760	0	0
Boiler 4	0	100	0	0	40.823	1,000	hp	NA	Primary	NGE (Natural Gas Effluent)	800	Btu/scf	8,760	0	0
Boiler 5	0	100	0	0	40.823	1,000	hp	NA	Primary	NGE (Natural Gas Effluent)	800	Btu/scf	8,760	0	0

Section A.3: Notes, Comments, and Explanations

NGE (Natural Gas effluent) is the process gas from the Infiltration reactors.

Division for Air Quality

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DEP7007EE

Internal Combustion Engines

- ☒ Section EE.1: General Information
☒ Section EE.2: Operating Information
☒ Section EE.3: Design Information
☒ Section EE.4: Fuel Information
☒ Section EE.5: Emission Factor Information
☒ Section EE.6: Notes, Comments, and Explanations

Additional Documentation

- ☒ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG
☒ Attach EPA certification of the engine

Source Name: Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/3/2024

Section EE.1: General Information

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Date Reconstructed/ Modified	List Applicable Regulations
EU07	EG#1	n/a	n/a	Caterpillar	3412	1999	1999	02/2000	n/a	401 KAR 63:002
EU07	EG#2	n/a	n/a	Caterpillar	C32	2012	2012	02/2011	n/a	401 KAR 63:002
EU20	EP#1	n/a	n/a	John Deere	6068TF250	1999	2000	01/2018	n/a	401 KAR 63:002
EU21	EP#2	n/a	n/a	John Deere	4045TF285	2012	2012	01/2012	n/a	401 KAR 63:002
EU22	EP#3	n/a	n/a	John Deere	PE4045	2017	2017	01/2018	n/a	401 KAR 63:002
EU22	EP#4	n/a	n/a	John Deere	PE4045	2017	2017	01/2018	n/a	401 KAR 63:002
EU27	EG#3	n/a	n/a	Ford	WSG61068I6005 E-NA	2003	2003	01/2003	n/a	401 KAR 63:002

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Date Reconstructed/Modified	List Applicable Regulations
EU28	EG#4	n/a	n/a	General Motors	8.1LT	2007	2007	02/2007	n/a	401 KAR 63:002

Section EE.2: Operating Information

Emission Unit #	Engine Purpose (Identify if Non-Emergency, Emergency, Fire/Water Pump, Black-start engine for combustion turbine, Engine Testing)	Hours Operated	Is this engine a rental? (Yes/No)	Rental Time Period (hrs)	Alternate Operating Scenarios (Describe any operating scenarios in which the engine may be used in a different configuration)
EU07 EG#1	Emergency	12	No	N/A	N/A
EU07 EG#2	Emergency	12	No	N/A	N/A
EU20 EP#1	Emergency Water pump	12	No	N/A	N/A
EU21 EP#2	Emergency Water pump	12	No	N/A	N/A
EU22 EP#3	Emergency Water pump	12	No	N/A	N/A
EU22 EP#4	Emergency Water pump	12	No	N/A	N/A
EU24 EG#3	Emergency	12	No	N/A	N/A
EU24 EG#4	Emergency	12	No	N/A	N/A

Section EE.3: Design Information

Emission Unit #	Engine Type (Identify all that apply: Commercial, Institutional, Stationary, Non-Road)	Ignition Type (Identify if either Compression or Spark Ignition)	Engine Family (Identify all that apply: 2-stroke, 4-stroke, Rich Burn, Lean Burn)	Maximum Engine Power (bhp)	Maximum Engine Speed (rpm)	Total Displacement (L)	Number of Cylinders
EU07 EG#1	Commercial, Stationary	Compression	4-Stroke	939	1800	27.02	12
EU07 EG#2	Commercial, Stationary	Compression	4-Stroke	1,474	1800	32.1	12
EU20 EP#1	Commercial, Stationary	Compression	4-Stroke	178	2400	6.8	6
EU21 EP#2	Commercial, Stationary	Compression	4-Stroke	121	2400	4.5	4
EU22 EP#3	Commercial, Stationary	Compression	4-Stroke	156	2400	4.5	4
EU22 EP#4	Commercial, Stationary	Compression	4-Stroke	156	2400	4.5	4
EU24 EG#3	Commercial, Stationary	Spark	4-Stroke	160	1800	6.8	10
EU24 EG#4	Commercial, Stationary	Spark	4-Stroke	225	1800	8.1	8

Section EE.4: Fuel Information

Emission Unit #	Identify if Primary, Secondary, or Tertiary Fuel	Fuel Type (Identify if Diesel, Gasoline, Natural Gas, Liquefied Petroleum Gas (LPG), Landfill/Digester Gas, or Other)	Fuel Grade	Percent Time Used (%)	Maximum Fuel Consumption	Heat Content	Sulfur Content (%)	SCC Code	SCC Units
EU07 EG#1	Primary	Diesel	ULSD	100	45.4 gal/hr	138,000 Btu/gal.	15 ppm	2-02-004-01	Hp-hr.
EU07 EG#2	Primary	Diesel	ULSD	100	71.9gal/hr	138,000 Btu/gal.	15 ppm	2-02-004-01	Hp-hr.
EU20 EP#1	Primary	Diesel	ULSD	100	60 lbs/hr	19,300 Btu/lb	15 ppm	2-02-001-02	Hp-hr.
EU21 EP#2	Primary	Diesel	ULSD	100	45 lb/hr	19,300 Btu/lb	15 ppm	2-02-001-02	Hp-hr.
EU22 EP#3	Primary	Diesel	ULSD	100	58.6 lb/hr	19,300 Btu/lb	15 ppm	2-02-001-02	Hp-hr.
EU22 EP#4	Primary	Diesel	ULSD	100	58.6 lb/hr	19,300 Btu/lb	15 ppm	2-02-001-02	Hp-hr.
EU24 EG#3	Primary	Natural Gas	n/a	100	894ft ³ /hr	1000 BTU/scf	n/a	2-03-002-01	lb/mmbtu
EU24 EG#4	Primary	Natural Gas	n/a	100	990 ft3/hr	1000 BTU/scf	n/a	2-03-002-01	lb/mmbtu

Section EE.5: Emission Factor Information

Emission factors expressed here are based on the potential to emit.

Emission Unit #	Fuel	Pollutant	Emission Factor	Emission Factor Units	Source of Emission Factor
EU07 EG#1	Diesel	SO ₂ , NO _x , PM, NMHC, CO	0.0000121, 0.024, 0.0007, 0.00642, 0.0055	lb/Hp-hr.	AP-42 §3.4, Table 3.4-1
EU07 EG#2	Diesel	SO ₂ , NO _x , PM, NMHC, CO	0.0000121, 0.024, 0.0007, 0.00642, 0.0055	lb/Hp-hr.	AP-42 §3.4, Table 3.4-1
EU20 EP#1	Diesel	SO ₂ , NO _x , PM, NMHC, CO	0.000015, 0.031, 0.0022, 0.000627, 0.00668	lb/Hp-hr.	AP-42 §3.3, Table 3.3-1
EU21 EP#2	Diesel	SO ₂ , NO _x , PM, NMHC, CO	0.000015, 0.031, 0.0022, 0.000627, 0.00668	lb/Hp-hr.	AP-42 §3.3, Table 3.3-1
EU22 EP#3	Diesel	SO ₂ , NO _x , PM, NMHC, CO	0.000015, 0.031, 0.0022, 0.000627, 0.00668	lb/Hp-hr.	AP-42 §3.3, Table 3.3-1
EU22 EP#4	Diesel	SO ₂ , NO _x , PM, NMHC, CO	0.000015, 0.031, 0.0022, 0.000627, 0.00668	lb/Hp-hr.	AP-42 §3.3, Table 3.3-1
EU24 EG#3	Natural Gas	SO ₂ , NO _x , PM, NMHC, CO	5.88E-04, 4.08E+00, 7.71e- 05, 1.18e-01, 3.17e-01	lb/mmBtu	AP-42 §3.2, Table 3.2-2
EU24 EG #4	Natural Gas	SO ₂ , NO _x , PM, NMHC, CO	5.88E-04, 4.08E+00, 7.71e- 05, 1.18e-01, 3.17e-01	lb/mmBtu	AP-42 §3.2, Table 3.2-2

Section EE.6: Notes, Comments, and Explanations

AP-42 EF for SO₂ adjusted for ULSD

Division for Air Quality

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DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hr)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU01	Boilers	01	Boiler 1	n/a	n/a	C-B1	0.0408 MMcf./hr.	SO ₂	0.6	AP-42 §1.4	n/a	n/a	0.024	n/a	0.107	n/a
EU01	Boilers	01	Boiler 1	n/a	n/a	C-B1	0.0408 MMcf./hr.	NO _x	50	AP-42 §1.4	n/a	n/a	2.04	n/a	8.94	n/a
EU01	Boilers	01	Boiler 1	n/a	n/a	C-B1	0.0408 MMcf./hr.	PM/PM ₁₀	7.6	AP-42 §1.4	n/a	n/a	0.31	n/a	1.36	n/a
EU01	Boilers	01	Boiler 1	n/a	n/a	C-B1	0.0408 MMcf./hr.	CO	84	AP-42 §1.4	n/a	n/a	3.43	n/a	15.02	n/a
EU01	Boilers	01	Boiler 1	n/a	n/a	C-B1	0.0408 MMcf./hr.	VOC	5.5	AP-42 §1.4	n/a	n/a	0.22	n/a	0.98	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-B1	Boiler 1	3.08	35	860	38.9229	-84.60964	9569	375	21.4

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hr)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU01	Boilers	01	Boiler 2	n/a	n/a	C-B2	0.0408 MMCft./hr.	SO ₂	0.6	AP-42 §1.4	n/a	n/a	0.024	n/a	0.107	n/a
EU01	Boilers	01	Boiler 2	n/a	n/a	C-B2	0.0408 MMCft./hr.	NO _x	50	AP-42 §1.4	n/a	n/a	2.04	n/a	8.94	n/a
EU01	Boilers	01	Boiler 2	n/a	n/a	C-B2	0.0408 MMCft./hr.	PM/PM ₁₀	7.6	AP-42 §1.4	n/a	n/a	0.31	n/a	1.36	n/a
EU01	Boilers	01	Boiler 2	n/a	n/a	C-B2	0.0408 MMCft./hr.	CO	84	AP-42 §1.4	n/a	n/a	3.43	n/a	15.02	n/a
EU01	Boilers	01	Boiler 2	n/a	n/a	C-B2	0.0408 MMCft./hr.	VOC	5.5	AP-42 §1.4	n/a	n/a	0.22	n/a	0.98	n/a

UTM Zone:

Page 2 of 4

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Stack gas info based on 10/28/2024 boiler 1 testing

Division for Air Quality

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DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU01	Boilers	01	Boiler 3	n/a	n/a	C-B3	0.0393 MMCft./hr.	SO ₂	0.6	AP-42 §1.4	n/a	n/a	0.024	n/a	0.1	n/a
EU01	Boilers	01	Boiler 3	n/a	n/a	C-B3	0.0393 MMCft./hr.	NO _x	50	AP-42 §1.4	n/a	n/a	1.96	n/a	8.61	n/a
EU01	Boilers	01	Boiler 3	n/a	n/a	C-B3	0.0393 MMCft./hr.	PM/PM ₁₀	7.6	AP-42 §1.4	n/a	n/a	0.3	n/a	1.31	n/a
EU01	Boilers	01	Boiler 3	n/a	n/a	C-B3	0.0393 MMCft./hr.	CO	84	AP-42 §1.4	n/a	n/a	3.3	n/a	14.46	n/a
EU01	Boilers	01	Boiler 3	n/a	n/a	C-B3	0.0393 MMCft./hr.	VOC	5.5	AP-42 §1.4	n/a	n/a	0.22	n/a	0.95	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-B3	Boiler 3	2	35	860	38.92284	-84.60993	9985	406	52.6

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Stack gas stream data based on 12/17/2013 emission test of Boiler 3

Division for Air Quality

300 Sower Boulevard
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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hr)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU01	Boilers	01	Boiler 4	n/a	n/a	C-B4	0.051 MMCft./hr.	SO ₂	0.6	AP-42 §1.4	n/a	n/a	0.03	n/a	0.13	n/a
EU01	Boilers	01	Boiler 4	n/a	n/a	C-B4	0.051 MMCft./hr.	NO _x	50	AP-42 §1.4	n/a	n/a	2.55	n/a	11.17	n/a
EU01	Boilers	01	Boiler 4	n/a	n/a	C-B4	0.051 MMCft./hr.	PM/PM ₁₀	7.6	AP-42 §1.4	n/a	n/a	0.39	n/a	1.7	n/a
EU01	Boilers	01	Boiler 4	n/a	n/a	C-B4	0.051 MMCft./hr.	CO	84	AP-42 §1.4	n/a	n/a	4.29	n/a	18.77	n/a
EU01	Boilers	01	Boiler 4	n/a	n/a	C-B4	0.051 MMCft./hr.	VOC	5.5	AP-42 §1.4	n/a	n/a	0.28	n/a	1.23	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-B4	Boiler 4	2.875	35	860	38.92259	-84.60746	18419	382	47.3

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Stack Gas data based on 10/28/2024 Boiler 5 Stack Test

Division for Air Quality

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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU01	Boilers	01	Boiler 5	n/a	n/a	C-B5	0.051 MMCft./hr.	SO ₂	0.6	AP-42 §1.4	n/a	n/a	0.03	n/a	0.13	n/a
EU01	Boilers	01	Boiler 5	n/a	n/a	C-B5	0.051 MMCft./hr.	NO _x	50	AP-42 §1.4	n/a	n/a	2.55	n/a	11.17	n/a
EU01	Boilers	01	Boiler 5	n/a	n/a	C-B5	0.051 MMCft./hr.	PM/PM ₁₀	7.6	AP-42 §1.4	n/a	n/a	0.39	n/a	1.7	n/a
EU01	Boilers	01	Boiler 5	n/a	n/a	C-B5	0.051 MMCft./hr.	CO	84	AP-42 §1.4	n/a	n/a	4.29	n/a	18.77	n/a
EU01	Boilers	01	Boiler 5	n/a	n/a	C-B5	0.051 MMCft./hr.	VOC	5.5	AP-42 §1.4	n/a	n/a	0.28	n/a	1.23	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-B5	Boiler 5	2.875	35	860	38.92258	-84.60739	18419	382	47.3

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Stack gas data based on 10/28/2024 boiler 5 test

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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU07	Emergency Generator	07	EG#1	n/a	n/a	EG1-1	939 Hp	SO ₂	0.0000121	AP-42 §3.4	n/a	n/a	0.011	n/a	0.00057	n/a
EU07	Emergency Generator	07	EG#1	n/a	n/a	EG1-1	939 Hp	NO _x	0.024	AP-42 §3.4	n/a	n/a	22.54	n/a	1.13	n/a
EU07	Emergency Generator	07	EG#1	n/a	n/a	EG1-1	939 Hp	PM/PM ₁₀	0.0007	AP-42 §3.4	n/a	n/a	0.66	n/a	0.033	n/a
EU07	Emergency Generator	07	EG#1	n/a	n/a	EG1-1	939 Hp	CO	0.0055	AP-42 §3.4	n/a	n/a	5.16	n/a	0.26	n/a
EU07	Emergency Generator	07	EG#1	n/a	n/a	EG1-1	939 Hp	VOC	0.000642	AP-42 §3.4	n/a	n/a	0.6	n/a	0.03	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
EG1-1	EG #1	0.67	14	860	38.92294	-84.60976	4919.3	1002.9	234.8

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU07	Emergency Generator	07	EG#2	n/a	n/a	EG2-1	1,474 Hp	SO ₂	0.0000121	AP-42 §3.4	n/a	n/a	0.018	n/a	0.000894	n/a
EU07	Emergency Generator	07	EG#2	n/a	n/a	EG2-1	1,474 Hp	NO _x	0.024	AP-42 §3.4	n/a	n/a	35.38	n/a	1.77	n/a
EU07	Emergency Generator	07	EG#2	n/a	n/a	EG2-1	1,474 Hp	PM/PM ₁₀	0.0007	AP-42 §3.4	n/a	n/a	1.03	n/a	0.05	n/a
EU07	Emergency Generator	07	EG#2	n/a	n/a	EG2-1	1,474 Hp	CO	0.0055	AP-42 §3.4	n/a	n/a	8.11	n/a	0.41	n/a
EU07	Emergency Generator	07	EG#2	n/a	n/a	EG2-1	1,474 Hp	VOC	0.000642	AP-42 §3.4	n/a	n/a	0.95	n/a	0.047	n/a

UTM Zone:

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Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

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Source Emissions Profile

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Additional Documentation

☒ Complete DEP7007AI

Source Name: Safran Landing Systems, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU27	Emergency Generator	27	EG#3	n/a	n/a	EG3-1	160 Hp	SO ₂	0.000588	AP-42 §3.2 Table 3.2-2	n/a	n/a	9.07E-04	n/a	4.54E-05	n/a
EU27	Emergency Generator	27	EG#3	n/a	n/a	EG3-1	160 Hp	NO _x	4.08	AP-42 §3.2 Table 3.2-2	n/a	n/a	4.89	n/a	0.24	n/a
EU27	Emergency Generator	27	EG#3	n/a	n/a	EG3-1	160 Hp	PM/PM ₁₀	0.000771	AP-42 §3.2 Table 3.2-2	n/a	n/a	0.059	n/a	0.003	n/a
EU27	Emergency Generator	27	EG#3	n/a	n/a	EG3-1	160 Hp	CO	0.18	AP-42 §3.2 Table 3.2-2	n/a	n/a	0.596	n/a	0.03	n/a
EU27	Emergency Generator	27	EG#3	n/a	n/a	EG3-1	160 Hp	VOC	0.317	AP-42 §3.2 Table 3.2-2	n/a	n/a	0.185	n/a	0.009	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
EG3-1	EG #3	0.25	5.08	860	38.9227	-84.60794	495	1162	168.06

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name: Safran Landing Systems, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU28	Emergency Generator	24	EG#4	n/a	n/a	EG4-1	225 Hp	SO ₂	0.000588	AP-42 §3.2 Table 3.2-2	n/a	n/a	1.27E-03	n/a	6.34E-05	n/a
EU28	Emergency Generator	24	EG#4	n/a	n/a	EG4-1	225 Hp	NO _x	3.17	AP-42 §3.2 Table 3.2-2	n/a	n/a	6.83	n/a	0.34	n/a
EU28	Emergency Generator	24	EG#4	n/a	n/a	EG4-1	225 Hp	PM/PM ₁₀	0.0384	AP-42 §3.2 Table 3.2-2	n/a	n/a	0.083	n/a	0.004	n/a
EU28	Emergency Generator	24	EG#4	n/a	n/a	EG4-1	225 Hp	CO	0.12	AP-42 §3.2 Table 3.2-2	n/a	n/a	0.83	n/a	0.04	n/a
EU28	Emergency Generator	24	EG#4	n/a	n/a	EG4-1	225 Hp	VOC	0.386	AP-42 §3.2 Table 3.2-2	n/a	n/a	0.259	n/a	0.013	n/a

UTM Zone:

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Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name: Safran Landing Systems, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU20	Emergency Pump	20	EP#1	n/a	n/a	EP1-1	178 Hp	SO ₂	0.000015	AP-42 §3.3	n/a	n/a	0.00267	n/a	0.000134	n/a
EU20	Emergency Pump	20	EP#1	n/a	n/a	EP1-1	178 Hp	NO _x	0.031	AP-42 §3.3	n/a	n/a	5.52	n/a	0.28	n/a
EU20	Emergency Pump	20	EP#1	n/a	n/a	EP1-1	178 Hp	PM/PM ₁₀	0.0022	AP-42 §3.3	n/a	n/a	0.39	n/a	0.02	n/a
EU20	Emergency Pump	20	EP#1	n/a	n/a	EP1-1	178 Hp	CO	0.00668	AP-42 §3.3	n/a	n/a	1.19	n/a	0.06	n/a
EU20	Emergency Pump	20	EP#1	n/a	n/a	EP1-1	178 Hp	VOC	0.000627	AP-42 §3.3	n/a	n/a	0.11	n/a	0.006	n/a

Section N.2: Stack Information

UTM Zone:

[illegible]

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

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Frankfort, KY 40601
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Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU21	Emergency Pump	21	EP#2	n/a	n/a	EP2-1	121 Hp	SO ₂	0.000015	AP-42 §3.3	n/a	n/a	0.002182	n/a	0.000091	n/a
EU21	Emergency Pump	21	EP#2	n/a	n/a	EP2-1	121 Hp	NO _x	0.031	AP-42 §3.3	n/a	n/a	3.75	n/a	0.19	n/a
EU21	Emergency Pump	21	EP#2	n/a	n/a	EP2-1	121 Hp	PM/PM ₁₀	0.0022	AP-42 §3.3	n/a	n/a	0.27	n/a	0.013	n/a
EU21	Emergency Pump	21	EP#2	n/a	n/a	EP2-1	121 Hp	CO	0.00668	AP-42 §3.3	n/a	n/a	0.81	n/a	0.04	n/a
EU21	Emergency Pump	21	EP#2	n/a	n/a	EP2-1	121 Hp	VOC	0.000627	AP-42 §3.3	n/a	n/a	0.076	n/a	0.0038	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
EP2-1	EP #2	0.33	6.92	860	38.92277	-84.60895	679	1074	129.67

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
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DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☒ Section N.3: Fugitive Information
☒ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU22	Emergency Pump	22	EP#3	n/a	n/a	EP3-1	156 Hp	SO ₂	0.000015	AP-42 §3.3	n/a	n/a	0.00234	n/a	0.000117	n/a
EU22	Emergency Pump	22	EP#3	n/a	n/a	EP3-1	156 Hp	NO _x	0.031	AP-42 §3.3	n/a	n/a	4.84	n/a	0.24	n/a
EU22	Emergency Pump	22	EP#3	n/a	n/a	EP3-1	156 Hp	PM/PM ₁₀	0.0022	AP-42 §3.3	n/a	n/a	0.34	n/a	0.017	n/a
EU22	Emergency Pump	22	EP#3	n/a	n/a	EP3-1	156 Hp	CO	0.00668	AP-42 §3.3	n/a	n/a	1.04	n/a	0.05	n/a
EU22	Emergency Pump	22	EP#3	n/a	n/a	EP3-1	156 Hp	VOC	0.000627	AP-42 §3.3	n/a	n/a	0.098	n/a	0.0049	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
EP3-1	EP #3	0.29	6.58	860	38.9227	-84.60807	448	999	111.75

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
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Source Emissions Profile

- ☒ Section N.1: Emission Summary
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Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU22	Emergency Pump	22	EP#4	n/a	n/a	EP4-1	156 Hp	SO ₂	0.000015	AP-42 §3.3	n/a	n/a	0.00234	n/a	0.000117	n/a
EU22	Emergency Pump	22	EP#4	n/a	n/a	EP4-1	156 Hp	NO _x	0.031	AP-42 §3.3	n/a	n/a	4.84	n/a	0.24	n/a
EU22	Emergency Pump	22	EP#4	n/a	n/a	EP4-1	156 Hp	PM/PM ₁₀	0.0022	AP-42 §3.3	n/a	n/a	0.34	n/a	0.017	n/a
EU22	Emergency Pump	22	EP#4	n/a	n/a	EP4-1	156 Hp	CO	0.00668	AP-42 §3.3	n/a	n/a	1.04	n/a	0.05	n/a
EU22	Emergency Pump	22	EP#4	n/a	n/a	EP4-1	156 Hp	VOC	0.000627	AP-42 §3.3	n/a	n/a	0.098	n/a	0.0049	n/a

UTM Zone:

Page 2 of 4

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☐ Section N.3: Fugitive Information
☐ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

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N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU03	Reactor 441	03A	Carbonizing Reactor	Thermal Oxidizer #1	TOX#1	C-TO1	0.074	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	11.589	1.39E-06	50.759	6.11E-06
EU03	Reactor 490	03B	Carbonizing Reactor	Thermal Oxidizer #2	TOX#2	C-TO2	0.066	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.619	1.30E-06
EU03	Reactor 491	03C	Carbonizing Reactor	Thermal Oxidizer #2	TOX#2	C-TO2	0.066	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.619	1.30E-06
EU03	Reactor 442	03D	Carbonizing Reactor	Thermal Oxidizer #3	TOX#3	C-TO3	0.071	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	11.589	1.39E-06	50.759	6.11E-06
EU03	Reactor 443	03E	Carbonizing Reactor	Thermal Oxidizer #4	TOX#4	C-TO4	0.2	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	26.071	2.09E-06	114.19	9.16E-06
EU03	Reactor 492	03F	Carbonizing Reactor	Thermal Oxidizer #4	TOX#4	C-TO4	0.2	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.619	1.30E-06
EU03	Reactor 493	03G	Carbonizing Reactor	Thermal Oxidizer #4	TOX#4	C-TO4	0.2	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.0619	1.30E-06

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-TO1	Reactor 441	2.5	75	860	38.92313	-84.60981	2056	1277	10.9
C-TO2	Reactor 490, Reactor 491	2.5	75	860	38.92307	-84.60914	2056	1277	10.9
C-TO3	Reactor 442	2.5	75	860	38.9233	-84.60996	2056	1277	10.9
C-TO4	Reactor 443, Reactor 492, Reactor 493	2.5	80.73	860	38.92297	-84.60817	2056	1277	10.9

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Currently using Sept 2008 emission factors until results from Oct/Nov 2024 testing results are approved

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☐ Section N.3: Fugitive Information
☐ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

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KY EIS (AFS) #:

21- 015-00125

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12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Contact Cooling Towers	112T03A	Main Plant Cooling #3 (A)	n/a	n/a	MP3-A	116,520 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	2.21	n/a	9.7	n/a
EU04	Contact Cooling Towers	112T03A	Main Plant Cooling #3 (A)	n/a	n/a	MP3-A	116,520 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.64	n/a	2.79	n/a
EU04	Contact Cooling Towers	112T03B	Main Plant Cooling #3 (B)	n/a	n/a	MP3-B	116,520 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	2.21	n/a	9.7	n/a
EU04	Contact Cooling Towers	112T03B	Main Plant Cooling #3 (B)	n/a	n/a	MP3-B	116,520 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.64	n/a	2.79	n/a
EU04	Contact Cooling Towers	112T03C	Main Plant Cooling #3 (C)	n/a	n/a	MP3-C	116,520 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	2.21	n/a	9.7	n/a
EU04	Contact Cooling Towers	112T03C	Main Plant Cooling #3 (C)	n/a	n/a	MP3-C	116,520 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.64	n/a	2.79	n/a
EU04	Contact Cooling Towers	112T03D	Main Plant Cooling #3 (D)	n/a	n/a	MP3-D	116,520 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	2.21	n/a	9.7	n/a
EU04	Contact Cooling Towers	112T03D	Main Plant Cooling #3 (D)	n/a	n/a	MP3-D	116,520 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.64	n/a	2.79	n/a

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Contact Cooling Towers	112T03E	Main Plant Cooling #3 (E)	n/a	n/a	MP3-E	116,520 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	2.21	n/a	9.7	n/a
EU04	Contact Cooling Towers	112T03E	Main Plant Cooling #3 (E)	n/a	n/a	MP3-E	116,520 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.64	n/a	2.79	n/a
EU04	Contact Cooling Towers	131T01	Condensate #1 (A)	n/a	n/a	C1-A	45,660 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.87	n/a	3.8	n/a
EU04	Contact Cooling Towers	131T01	Condensate #1 (A)	n/a	n/a	C1-A	45,660 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.25	n/a	1.09	n/a
EU04	Contact Cooling Towers	131T02	Condensate #1 (B)	n/a	n/a	C1-B	45,660 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.87	n/a	3.8	n/a
EU04	Contact Cooling Towers	131T02	Condensate #1 (B)	n/a	n/a	C1-B	45,660 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.25	n/a	1.09	n/a
EU04	Contact Cooling Towers	131T03	Condensate #2 (C)	n/a	n/a	C2-A	30,000 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.57	n/a	2.5	n/a
EU04	Contact Cooling Towers	131T03	Condensate #2 (C)	n/a	n/a	C2-A	30,000 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.16	n/a	0.72	n/a
EU04	Contact Cooling Towers	131T04	Condensate #2 (D)	n/a	n/a	C2-B	30,000 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.57	n/a	2.5	n/a
EU04	Contact Cooling Towers	131T04	Condensate #2 (D)	n/a	n/a	C2-B	30,000 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.16	n/a	0.72	n/a
EU04	Contact Cooling Towers	131T05	Condensate #2 (E)	n/a	n/a	C2-C	30,000 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.57	n/a	2.5	n/a
EU04	Contact Cooling Towers	131T05	Condensate #2 (E)	n/a	n/a	C2-C	30,000 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.16	n/a	0.72	n/a
EU04	Contact Cooling Towers	131T06	Condensate #3 (F)	n/a	n/a	C3-A	39600 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.75	n/a	3.3	n/a
EU04	Contact Cooling Towers	131T06	Condensate #3 (F)	n/a	n/a	C3-B	39600 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.22	n/a	0.95	n/a
EU04	Contact Cooling Towers	131T07	Condensate #3 (G)	n/a	n/a	C3-C	39600 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.75	n/a	3.3	n/a
EU04	Contact Cooling Towers	131T07	Condensate #3 (G)	n/a	n/a	C3-D	39600 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.22	n/a	0.95	n/a

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Contact Cooling Towers	131TO8	Condensate #3 (H)	n/a	n/a	C3-E	39600 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.75	n/a	3.3	n/a
EU04	Contact Cooling Towers	131TO8	Condensate #3 (H)	n/a	n/a	C3-F	39600 gal./hr.	VOC	0.00547	KYEIS	n/a	n/a	0.22	n/a	0.95	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
MP3-A	Main Plant Cooling #3 (A)	12	25	860	38.92265	-84.60804			
MP3-B	Main Plant Cooling #3 (B)	12	25	860	38.92264	-84.60799			
MP3-C	Main Plant Cooling #3 (C)	12	25	860	38.92263	-84.60794			
MP3-D	Main Plant Cooling #3 (D)	12	25	860	38.92263	-84.60879			
MP3-E	Main Plant Cooling #3 (E)	12	25	860	38.92262	-84.60784			
C1-A	Condensate #1 (A)	13.11	25	860	38.92293	-84.60951			
C1-B	Condensate #1 (B)	13.11	25	860	38.92293	-84.60947			
C2-A	Condensate #2 (A)	13.11	25	860	38.92290	-84.60921			
C2-B	Condensate #2 (B)	13.11	25	860	38.92290	-84.60917			

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C2-C	Condensate #2 (C)	13.11	25	860	38.92289	-84.60909			
C3-A	Condensate #3 (A)	13.11	25	860	38.92287	-84.60893			
C3-B	Condensate #3 (B)	13.11	25	860	38.92286	-84.60888			
C3-C	Condensate #3 (C)	13.11	25	860	38.92286	-84.60880			

UTM Zone:

[illegible]

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
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DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☐ Section N.3: Fugitive Information
☐ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/3/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Non-Contact Cooling Towers	1210	Accelerated Cooling #1	n/a	n/a	AC-1	42,900 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.82	n/a	3.57	n/a
EU04	Non-Contact Cooling Towers	12100	Accelerated Cooling #2	n/a	n/a	AC-2	42,900 gal./hr.	PM/PM ₁₀	0.00547	KYEIS	n/a	n/a	0.82	n/a	3.57	n/a
EU04	Non-Contact Cooling Towers	112TO1A	Main Plant Cooling #1 (A)	n/a	n/a	MP1-A	67,980 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	1.29	n/a	5.66	n/a
EU04	Non-Contact Cooling Towers	112TO1B	Main Plant Cooling #1 (B)	n/a	n/a	MP1-B	67,980 gal./hr.	PM/PM ₁₀	0.00547	KYEIS	n/a	n/a	1.29	n/a	5.66	n/a
EU04	Non-Contact Cooling Towers	112TO1C	Main Plant Cooling #1 (C)	n/a	n/a	MP1-C	67,980 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	1.29	n/a	5.66	n/a
EU04	Non-Contact Cooling Towers	112TO2A	Main Plant Cooling #2 (A)	n/a	n/a	MP2-A	40,800 gal./hr.	PM/PM ₁₀	0.00547	KYEIS	n/a	n/a	0.76	n/a	3.4	n/a
EU04	Non-Contact Cooling Towers	112TO2B	Main Plant Cooling #2 (B)	n/a	n/a	MP2-B	40,800 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	0.76	n/a	3.4	n/a
EU04	Non-Contact Cooling Towers	112T1	RFPC Tower #1	n/a	n/a	RFPC-1	67,800 gal./hr.	PM/PM ₁₀	0.00547	KYEIS	n/a	n/a	1.29	n/a	5.64	n/a
EU04	Non-Contact Cooling Towers	112T2	RFPC Tower #2	n/a	n/a	RFPC-2	67,800 gal./hr.	PM/PM ₁₀	0.019	KYEIS	n/a	n/a	1.29	n/a	5.64	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
AC-1	Accelerated Cooling #1	8	20	860	38.92285	-84.60873	n/a	n/a	n/a
AC-2	Accelerated Cooling #2	8	20	860	38.92282	-84.60873	n/a	n/a	n/a
MP1-A	Main Plant Cooling #1 (A)	8.5	20	860	38.92284	-84.60951	n/a	n/a	n/a
MP1-B	Main Plant Cooling #1 (B)	8.5	20	860	38.92284	-84.60947	n/a	n/a	n/a
MP1-C	Main Plant Cooling #1 (C)	8.5	20	860	38.92284	-84.60944	n/a	n/a	n/a
MP2-A	Main Plant Cooling #2 (A)	10	25	860	38.92277	-84.60887	n/a	n/a	n/a
MP2-B	Main Plant Cooling #2 (B)	10	25	860	38.92274	-84.60877	n/a	n/a	n/a
RFPC-1	RFPC Tower #1	10	20	870	38.92385	-84.60793	n/a	n/a	n/a
RFPC-2	RFPC Tower #2	10	20	870	38.92385	-84.60789	n/a	n/a	n/a

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

APPENDIX A

OM&M - Emergency Procedure for Thermal Oxidizer Issues (Carbonization Only)

If there is a facility-wide power interruption or a Thermal Oxidizer-specific malfunction:

1. Thermal oxidizers will automatically shut down or go off-line.
2. The control signal 'authorization' from the thermal oxidizer to the respective reactor(s) is lost.
3. The respective reactor(s) will discontinue heating until control signal 'authorization' is re-gained.
4. All carbon plant thermal oxidizers (#1 – #4) may be operated on emergency power supplied by the Carbon plant's emergency diesel generators. This enables the facility to quickly re-start thermal oxidizer #2 and #4 (490/491 and 492/493– C2/2.5/3 cycle reactors) to minimize process gas emissions (minimal delay).
5. After a facility-wide power interruption, **and if the pressure increases in the 441/442/443 reactors**, process gases from will briefly (<30 seconds) vent to the thermal oxidizer stack. After this brief diversion, the reactor extraction fans are re-started and the process gases will be routed back to the thermal oxidizer destruction chamber. The thermal oxidizer will be re-started when it is safe to do so, usually within ~70 minutes.
6. After a facility-wide power interruption, **and if the pressure in the 441/442/443 reactors does not increase**, process gases will continue to be routed through the thermal oxidizer combustion chamber instead of through a vent to the stack (bypassing the combustion chamber) when control signal 'authorization' from the thermal oxidizer is lost. This is to take advantage of residual thermal oxidizer heat to further combust process gases. The thermal oxidizer will be re-started when it is safe to do so, usually within ~70-80 minutes.
7. Process gases from 490/491 and 492/493 (C2/2.5/3 cycle reactors) will vent to the building roof until the respective thermal oxidizer is online.
8. Maintenance and Operations personnel will immediately investigate the cause of the thermal oxidizer failure (if not already apparent as in a facility-wide power failure).
9. Once the problem is remedied, thermal oxidizers #1, #3 & #4 will be re-started 80 minutes after the control signal authorization was lost (this time delay is to ensure highly flammable process gases have not collected in the thermal oxidizer chamber, thus mitigating an explosion risk when the thermal oxidizer burner is lit). Thermal oxidizer #2 may be re-started immediately after the problem is remedied.
10. The C1 process reactor exhaust lines were outfitted with heat tracing to minimize the build-up of residual particulates and tars inside the lines. The lines are cleaned no less often than every 30 cycles to help assure a high level of safety.
11. Regular preventive maintenance is performed on the thermal oxidizers, which includes, but is not limited to:
 - Inspection and cleaning or replacement of air and water filters
 - Inspection of thermocouples and flame detection sensors (i.e. photo-eyes)
 - Visual inspection and cleaning of the electrical boxes and control circuitry (including wiring, controllers, circuit boards and associated electronics)
12. Facility maintains stock levels of critical thermal oxidizer parts in order to replace malfunctioning equipment in a timely manner. For parts not having physical contact with the process gas stream, they will receive immediate attention in their repair or replacement (the actual time

depends greatly on the complexity of the issue). For parts having physical contact with the process gas stream, any repair work must wait a minimum of ~70-80 minutes before starting.

13. Other procedures are kept on site available for inspection.

Division for Air Quality

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Source Emissions Profile

Additional Documentation

☒ Section N.1: Emission Summary

☒ Section N.2: Stack Information

☐ Section N.3: Fugitive Information

☐ Section N.4: Notes, Comments, and Explanations

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/5/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g., AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU05	Machining #3	05	Intermediate Machining	Fabric filter	DC-2	M-2	0.066 ton/hr.	PM	157.79 lb/ton	Mass Balance	100. %	99.9 %	10.41	0.01041	45.61	0.0456
EU06	Machining #1 and #2	06	Final Machining	Fabric filter	DC-1	M-1	0.101 ton/hr.	PM	613.36 lb/ton	Mass Balance	100. %	99.9 %	61.33	0.06133	268.65	0.2687
EU17	RFPD Machining	17	Refurbishing	Fabric filter	DC-3	n/a	0.0074 ton/hr.	PM	731.81 lb/ton	Mass Balance	100. %	99.9 %	5.42	0.00542	23.75	0.0238
EU18	Machining 4	18	Final Machining	Fabric filter	DC-1	M-1	0.065 ton/hr.	PM	613.36 lb/ton	Mass Balance	100. %	99.9 %	39.26	0.03926	171.93	0.1719
EU19	Machining 5	19	Final Machining 5	Fabric filter	DC-4	n/a	0.152 ton/hr.	PM	613.36 lb/ton	Mass Balance	100. %	99.9 %	92	0.09200	402.98	0.4029
EU24	Machining 6	24	Final Machining 6	Fabric filter	DC-5	n/a	0.152 ton/hr.	PM	613.36 lb/ton	Mass Balance	100. %	99.9 %	92	0.09200	402.98	0.4029

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Eastings (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
M-2	Machining #3 (5)	2.29	14	860	38,92313	-84,60998	4538	72	4.61
M-1	Machining #1, #2, #4 (Process ID 6&18)	2.69	16	870	38,92372	-84,60900	15315	72	11.25
n/a	RFPC Machining (17)	5.32	n/a	865	n/a	n/a	19800	72	3.70
n/a	Machining 5 (19)	3.62	n/a	865	n/a	n/a	22800	72	9.22
n/a	Machining 6 (24)	3.62	n/a	865	n/a	n/a	22800	72	9.22

UTM Zone:

[illegible]

Section N.4: Notes, Comments, and Explanations

Machining 1, 2, and 4 all exhaust through the same baghouse
RFPC Machining, Maching 5, and Machining 6 all vent indoors through hepa filters
Machining Line 6 is not yet installed but installation is underway as authorized under F-13-023 R4

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

☒ Section N.1: Emission Summary

☒ Section N.2: Stack Information

☐ Section N.3: Fugitive Information

☐ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #:

21-015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/5/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Source Factor (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU25	Thermal Well Tank	B500 A	Thermal Well Tank	n/a	n/a	B5A-V1 B5AV-2	n/a	VOC	n/a	Test	n/a	n/a	4.55E-08	n/a	0.721	n/a
EU25	Thermal Well Tank	B500 A	Thermal Well Tank	n/a	n/a	B5A-V1 B5AV-2	n/a	HAP's	n/a	Test	n/a	n/a	2.09E-08	n/a	0.332	n/a
EU25	Thermal Well Tank	B500 B	Thermal Well Tank	n/a	n/a	B5B-V1 B5B-V2	n/a	VOC	n/a	Test	n/a	n/a	4.55E-08	n/a	0.721	n/a
EU25	Thermal Well Tank	B500 B	Thermal Well Tank	n/a	n/a	B5B-V1 B5B-V2	n/a	HAP's	n/a	Test	n/a	n/a	2.09E-08	n/a	0.332	n/a
EU25	Thermal Well Tank	B500 C	Thermal Well Tank	n/a	n/a	B5C-V1 B5C-V2	n/a	VOC	n/a	Test	n/a	n/a	4.11E-08	n/a	0.797	n/a
EU25	Thermal Well Tank	B500 C	Thermal Well Tank	n/a	n/a	B5C-V1 B5C-V2	n/a	HAP's	n/a	Test	n/a	n/a	1.89E-08	n/a	0.366	n/a
EU25	Thermal Well Tank	B500 D	Thermal Well Tank	n/a	n/a	B5D-V1 B5D-V2	n/a	VOC	n/a	Test	n/a	n/a	4.11E-08	n/a	0.797	n/a
EU25	Thermal Well Tank	B500 D	Thermal Well Tank	n/a	n/a	B5D-V1 B5D-V2	n/a	HAP's	n/a	Test	n/a	n/a	1.89E-08	n/a	0.366	n/a

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g., AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU25	Thermal Well Tank	B600 A	Thermal Well Tank	n/a	n/a	B6A-V1 B6A-V2 B6A-V3	n/a	VOC	n/a	Test	n/a	n/a	2.24E-08	n/a	0.393	n/a
EU25	Thermal Well Tank	B600 A	Thermal Well Tank	n/a	n/a	B6A-V1 B6A-V2 B6A-V3	n/a	HAPs	n/a	Test	n/a	n/a	1.03E-08	n/a	0.181	n/a
EU25	Thermal Well Tank	B600 B	Thermal Well Tank	n/a	n/a	B6B-V1 B6B-V2 B6B-V3	n/a	VOC	n/a	Test	n/a	n/a	4.21E-08	n/a	0.738	n/a
EU25	Thermal Well Tank	B600 B	Thermal Well Tank	n/a	n/a	B6B-V1 B6B-V2 B6B-V3	n/a	HAPs	n/a	Test	n/a	n/a	1.94E-08	n/a	0.339	n/a
EU25	Thermal Well Tank	B600 C	Thermal Well Tank	n/a	n/a	B6C-V1 B6C-V2 B6C-V3	n/a	VOC	n/a	Test	n/a	n/a	4.18E-09	n/a	0.073	n/a
EU25	Thermal Well Tank	B600 C	Thermal Well Tank	n/a	n/a	B6C-V1 B6C-V2 B6C-V3	n/a	HAPs	n/a	Test	n/a	n/a	1.92E-09	n/a	0.034	n/a

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
B5A-V1	B500 A	0.25	60	860	38.92306	-84.60933	4.66	100	1.6
B5A-V2	B500 A	0.25	60	860	38.92306	-84.60933	4.66	100	1.6
B5B-V1	B500 B	0.25	60	860	38.92306	-84.60933	4.66	100	1.6
B5B-V2	B500 B	0.25	60	860	38.92306	-84.60933	4.66	100	1.6
B5C-V1	B500 C	0.25	60	860	38.92308	-84.60955	5.15	100	1.8
B5C-V2	B500 C	0.25	60	860	38.92308	-84.60955	5.15	100	1.8
B5D-V1	B500 D	0.25	60	860	38.92308	-84.60955	5.15	100	1.8
B5D-V2	B500 D	0.25	60	860	38.92308	-84.60955	5.15	100	1.8
B6A-V1	B600 A	0.33	60	860	38.92299	-84.60782	2.54	100	0.5

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
B6A-V2	B600 A	0.33	60	860	38.92299	-84.60782	2.54	100	0.5
B6A-V3	B600 A	0.33	60	860	38.92299	-84.60782	2.54	100	0.5
B6B-V1	B600 B	0.33	60	860	38.92299	-84.60782	4.77	100	0.9
B6B-V2	B600 B	0.33	60	860	38.92299	-84.60782	4.77	100	0.9
B6B-V3	B600 B	0.33	60	860	38.92299	-84.60782	4.77	100	0.9
B6C-V1	B600 C	0.33	60	860	38.92299	-84.60782	0.47	100	0.09
B6C-V2	B600 C	0.33	60	860	38.92299	-84.60782	0.47	100	0.09
B6C-V3	B600 C	0.33	60	860	38.92299	-84.60782	0.47	100	0.09

UTM Zone:

[illegible]

Section N.4: Notes, Comments, and Explanations

Each B500 tank (A,B,C,D) has 2 vents

Each B600 tank (A,B,C) has 3 vents

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007GG

Control Equipment

Additional Documentation

- ☒ Complete Sections GG.1 through GG.12, as applicable
 Attach manufacturer's specifications for each control device
☒ Complete DEP7007AI

Source Name:

Sfran Landing Systems Kentucky, LLC

KY EIS (AFS) #:

21-015-00125

Permit #:

F-13-023-R4

Agency Interest (AI) ID:

137

Date:

12/5/2024

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68°F)	Average Particle Diameter (µm)	Particle Density (lb/ft³) or Specific Gravity	Gas Density (lb/ft³)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H ₂ O)	Pollutants Collected/Controlled	Pollutant Removal (%)
TOX#1	Thermal Oxidizer #1	n/a	Flare Industries	99-165	1/1/2000	170	550	n/a	n/a	158.7	0.1	HCN, NH ₃ , CO ₂ , H ₂ O, CO	Natural Draft	n/a	HAPs, VOCs	99.999991
TOX#2	Thermal Oxidizer #2	n/a	Flare Industries	Firecat 2.3.3	1/1/2000	1700	550	n/a	n/a	158.7	0.1	HCN, NH ₃ , CO ₂ , H ₂ O, CO	Natural Draft	n/a	HAPs, VOCs	99.999991
TOX#3	Thermal Oxidizer #3	n/a	Flare Industries	FireCat 2.3.3	1/1/2007	1700	550	n/a	n/a	158.7	0.1	HCN, NH ₃ , CO ₂ , H ₂ O, CO	Natural Draft	n/a	HAPs, VOCs	99.999991
TOX#4	Thermal Oxidizer #4	n/a	PCC	TO System / 3990	1/1/2018	1700	550	n/a	n/a	158.7	0.1	HCN, NH ₃ , CO ₂ , H ₂ O, CO	Natural Draft	n/a	HAPs, VOCs	99.999991
DC-1	Machining Line 1,2,&4	n/a	AAF International	OptiHo Pulse Jet 4RC32	9/1/2014	72	15315	1	132lbs/ft3	n/a	n/a	n/a	n/a	.01-8.0	Particulate Matter	99.9
DC-2	Machining Line 3	n/a	Steelcraft Corporation	Filter MR 10.84.1057	9/1/1998	72	4538	1	132lbs/ft3	n/a	n/a	n/a	n/a	.01-8.0	Particulate Matter	99.9
DC-3	RPPC Machining	n/a	Donaldson Torit	Downdro Evolution DFE2-12	1/1/2018	72	19800	1	132lbs/ft3	n/a	n/a	n/a	n/a	.01-5.99	Particulate Matter	99.9
DC-4	Machining Line 5	n/a	Donaldson Torit	Downdro Evolution DFE2-12	1/1/2018	72	22800	1	132lbs/ft3	n/a	n/a	n/a	n/a	.01-5.99	Particulate Matter	99.9
DC-5	Machining line 6	n/a	Donaldson Torit	Downdro Evolution DFE2-12	Not yet installed	72	22800	1	132lbs/ft3	n/a	n/a	n/a	n/a	.01-5.99	Particulate Matter	99.9

DEP7007GG

DEP7007GG

DEP7007GG

DEP7007GG

[illegible]

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007B

Manufacturing or Processing
Operations

☒ Section B.1: Process Information
☒ Section B.2: Materials and Fuel Information
☐ Section B.3: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007A1, DEP7007N,
DEP7007V, and DEP7007GG.

☐ Attach a flow diagram

☐ Attach SDS

Source Name:

Safran Lanfing Systems Kentucky, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/5/2024

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU04	Accelerated Cooling #1	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	FXV-0641	12/2012	Continuous	n/a	n/a
EU04	Accelerated Cooling #2	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	FXV-0641	12/2012	Continuous	n/a	n/a
EU04	Main Plant Cooling #1 (A)	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	3412C	09/1998	Continuous	n/a	n/a
EU04	Main Plant Cooling #1 (B)	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	3412C	09/1998	Continuous	n/a	n/a
EU04	Main Plant Cooling #1 (C)	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	3412C	09/1998	Continuous	n/a	n/a
EU04	Main Plant Cooling #2 (A)	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	VT1-375-P	12/2012	Continuous	n/a	n/a

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU04	Main Plant Cooling #2 (B)	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	Baltimore Aircoil Company	VT1-375-P	12/2012	Continuous	n/a	n/a
EU04	RFFC Tower #1	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	evapco	P-6	06/2018	Continuous	n/a	n/a
EU04	RFFC Tower #2	Non-Contact Water Cooling Tower	04	Non-Contact Water Cooling Tower	evapco	P-6	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (A)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (B)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (C)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (D)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (E)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Condensate #1 (A)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #1 (B)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #2 (A)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #2 (B)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #2 (C)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	VT1 340	12/2012	Continuous	n/a	n/a

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU04	Condensate #3 (A)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	3412C	12/2012	Continuous	n/a	n/a
EU04	Condensate #3 (B)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	3412C	12/2012	Continuous	n/a	n/a
EU04	Condensate #3 (C)	Contact Water Cooling Tower	04	Contact Water Cooling Tower	Baltimore Aircoil Company	3412C	12/2012	Continuous	n/a	n/a
EU25	B500A	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	09/1998	Continuous	n/a	n/a
EU25	B500B	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	09/1998	Continuous	n/a	n/a
EU25	B500C	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	09/1998	Continuous	n/a	n/a
EU25	B500D	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	09/1998	Continuous	n/a	n/a
EU25	B600A	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	12/2012	Continuous	n/a	n/a
EU25	B600B	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	01/2018	Continuous	n/a	n/a
EU25	B600C	Cooling Water Thermal Well	25	Thermal Well Tank	Maintenance Industrial Service	n/a	01/2018	Continuous	n/a	n/a

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
			(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)			
EU04	Accelerated Cooling #1	Process Water	42,900	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Accelerated Cooling #2	Process Water	42,900	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #1 (A)	Process Water	67,980	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #1 (B)	Process Water	67,980	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #1 (C)	Process Water	67,980	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #2 (A)	Process Water	40,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #2 (B)	Process Water	40,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	RFPCT Tower #1	Process Water	67,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	RFPCT Tower #2	Process Water	67,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (A)	Process Water	116,520	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
			(Specify Units/hr)	(Specify Units/hr)			(Specify Units/hr)	(Specify Units/hr)		(Specify Units)	(Specify Units)	(Specify Units)	(Specify Units)		
EU04	Main Plant Cooling #3 (B)	Process Water	116,520	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (C)	Process Water	116,520	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (D)	Process Water	116,520	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (E)	Process Water	116,520	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #1 (A)	Process Water	45,660	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #1 (B)	Process Water	45,660	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #2 (A)	Process Water	30,000	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #2 (B)	Process Water	30,000	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #2 (C)	Process Water	30,000	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #3 (A)	Process Water	39,600	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #3 (B)	Process Water	39,600	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU04	Condensate #3 (C)	Process Water	39600	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B500A	Process Water	544.3	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B500B	Process Water	544.3	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B500C	Process Water	528.4	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B500D	Process Water	528.4	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B600A	Process Water	1371.2	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B600B	Process Water	1371.2	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU25	B600C	Process Water	1371.2	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

DEP7007B

DEP7007B

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007V

Applicable Requirements and Compliance

Activities

☒ Section V.1: Emission and Operating Limitation(s)

☒ Section V.2: Monitoring Requirements

☒ Section V.3: Recordkeeping Requirements

☒ Section V.4: Reporting Requirements

☐ Section V.5: Testing Requirements

☐ Section V.6: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name:

Safran Landing Systems, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID: 137

Date:

12/5/2024

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU01	Boilers	401 KAR 59:015 40 KAR 60:005	PM & SO2	n/a	n/a	n/a	Compliant while burning NGE and/or natural gas
EU03	Carbonizing Reactors	401 KAR 59:010 401 KAR 63:020	HCN	0.7 ton/yr. site wide	n/a	n/a	Compliant while meeting permit requirements
EU04	Cooling towers	401 KAR 63:010	PM & VOC	n/a	VOC 90 ton/yr site wide	n/a	Compliant while applying reasonable precautions
EU05, EU06, EU17, EU18, EU19, EU24	Machining	401 KAR 59:010	PM	n/a	n/a	n/a	Compliant while all control devices operated appropriately
EU07, EU20, EU21, EU22, EU27, EU28	Emergency Generators & Pumps	401 KAR 63:002	Criteria	n/a	n/a	100 hr./yr.	Compliant while meeting operating limitations
EU08	Paint Lines	401 KAR 59:010 401 KAR 63:002	PM & VOC	n/a	VOC 90 ton/yr site wide	n/a	Compliant while control device operated appropriately

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU01	Boilers	PM & SO2	401 KAR 59:015	Fuel	Monthly amount & type of fuel (NGE and/or natural gas)
EU03	Carbonizing Reactors	HGN	401 KAR 63:020	Temperature; Furnace Process	Thermal oxidizer operating temperature; Process rate & op. hours of furnaces
EU04	Cooling towers	PM & VOC	401 KAR 63:010	Process Parameters	Monthly water processed & operating hours
EU05, EU06, EU17, EU18, EU19, EU24	Machining	PM	401 KAR 59:010	Process Parameters	Monthly process rate; Daily pressure drop across baghouse/fabric filters
EU07, EU20, EU21, EU22, EU27, EU 28	Emergency Generators & Pumps	Criteria	401 KAR 63:002	Operating Hours	Operating Hours
EU08	Paint Lines	PM & VOC	401 KAR 59:010 401 KAR 63:002	Filter Condition	Process Chemical Usage and Daily inspection of filters

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU01	Boilers	PM & SO ₂	401 KAR 59.015	Fuel	Monthly amount & type of fuel consumed (NGE and/or Natural Gas)
EU03	Carbonizing Reactors	HCN	401 KAR 63.020	HCN; Process Parameters; Therm. Ox. Temperature	HCN emissions; Furnace process rate & op. hours; Thermal oxidizer operating temperature
EU04	Cooling towers	PM & VOC	401 KAR 63.010	Process Parameters	Monthly water processed
EU05, EU06, EU17, EU18, EU19, EU24	Machining	PM	401 KAR 59.010	Process Parameters	Monthly process rate; Daily pressure drop across baghouse/fabric filters
EU07, EU20, EU21, EU22, EU27, EU28	Emergency Generators & Pumps	Criteria	401 KAR 63.002	Required Maintenance	Maintenance performed (Oil & filter change; Air cleaner inspection; Hoses & belts inspection; etc.)
EU08	Paint Lines	PM & VOC	401 KAR 59.010 401 KAR 63.002	Painter Training; Filter Checks	Process Chemical Usage; Each painter has completed training per 40CFR63.11173(f); Filter checks & time/date filters changed

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU01	Boilers	PM & SO2	401 KAR 59:015	Fuel	Semi-annual reports of monthly amount & type of fuel consumed (NGE and/or Natural Gas)
EU03	Carbonizing Reactors	HCN	401 KAR 63:020	HCN, Process Parameters; Temperature Excursions	Semi-annual reports of monthly HCN emissions; Furnace process rate & op. hours; 3-Hour periods Thermal Oxidizer temperature remains below demonstrated compliance temperature
EU04	Cooling towers	PM & VOC	401 KAR 63:010	Water Processed	Semi-annual reports of monthly water processed
EU05, EU06, EU17, EU18, EU19, EU24	Machining	PM	401 KAR 59:010	Pressure drop	Semi-annual reports of daily pressure drop monitoring
EU07, EU20, EU21, EU22, EU27	Emergency Generators & Pumps	Criteria	401 KAR 63:002	Deviations of operating limitations	Each instance in which operating limitations were not met
EU08	Paint Lines	PM & VOC	401 KAR 59:010 401 KAR 63:002	Process changes PM/VOC Emissions	Report in each calendar year of previously submitted information that has changed Report the PM and VOC emissions monthly

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Division for Air Quality

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DEP7007B

Manufacturing or Processing
Operations

Additional Documentation

☒ Complete DEP7007A1, DEP7007N,
DEP7007V, and DEP7007GG.

Attach a flow diagram

Attach SDS

Source Name:

Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #:

21-015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

12/5/2024

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU03	Carbonizing Reactor 441	Carbonizing Reactor	03A	Carbonizing	Seco/Warwick	n/a	01/2000	Batch	n/a	30
EU03	Carbonizing Reactor 442	Carbonizing Reactor	03B	Carbonizing	Seco/Warwick	n/a	01/2000	Batch	n/a	30
EU03	Carbonizing Reactor 443	Carbonizing Reactor	03C	Carbonizing	Surface Combustion	n/a	01/2018	Batch	n/a	30
EU03	Carbonizing Reactor 490	Carbonizing Reactor	03D	Carbonizing	Technip	n/a	01/2000	Batch	n/a	84
EU03	Carbonizing Reactor 491	Carbonizing Reactor	03E	Carbonizing	Vertex FD	n/a	01/2013	Batch	n/a	84
EU03	Carbonizing Reactor 492	Carbonizing Reactor	03F	Carbonizing	Inductotherm	n/a	01/2018	Batch	n/a	84
EU03	Carbonizing Reactor 493	Carbonizing Reactor	03G	Carbonizing	Inductotherm	n/a	01/2018	Batch	n/a	84

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)

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Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
			(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)			

Section B.3: Notes, Comments, and Explanations

For C1 Reactors (441,442,443) the Process cycle time is 30 hrs this includes loading/unloading

For C2/2/5/3 Reactors (490,491,492,493) the process cycle time is 84 hrs this includes loading/unloading

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DEP7007N

Source Emissions Profile

- ☒ Section N.1: Emission Summary
☒ Section N.2: Stack Information
☐ Section N.3: Fugitive Information
☐ Section N.4: Notes, Comments, and Explanations

Additional Documentation

☒ Complete DEP7007AI

Source Name: Safran Landing Systems, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/10/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	.56 gal/hr	VOC	3.04 lb/gal	Mass Balance	100.0%	0.0%	1.25	n/a	5.48	n/a
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	Fabric Filter	n/a	P1-4	.56 gal/hr	PM/PM10	6.18 lb/gal.	Mass Balance	100.00%	98.65%	0.98	0.01	4.3	0.06
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	n/a	n/a	P2-1,P2-2,P2-3,P2-4	.264 gal/hr	VOC	9.32 lb/hr	Mass Balance	n/a	n/a	2.34	n/a	10.27	n/a
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	Fabric Filter	n/a	P2-4	.264 gal/hr	PM/PM10	4.11 lb/hr	Mass Balance	100.00%	98.65%	0.9	0.008	3.96	0.05
EU08	Paint Lines	08	Paint Mixing Booth	n/a	n/a	P3-1	n/a	VOC	.0001lb/hr	Estimation	100	n/a	0.0001	n/a	0.000438	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
P1-1	Primer Line Curing Oven	0.5	40	900	38.924793	-84.609251	n/a	180	n/a
P1-2	Primer Line Curing Oven	1	40	900	38.924805	-84.60926	n/a	180	n/a
P1-3	Primer Line Curing Oven	1	40	900	38.924797	-84.609184	n/a	180	n/a
P2-1	Topcoat Line Curing Oven	0.5	40	900	38.92476	-84.60907	n/a	150	n/a
P2-2	Topcoat Line Curing Oven	1	40	900	38.924766	-84.609114	n/a	150	n/a
P2-3	Topcoat Line Curing Oven	1	40	900	38.92476	-84.609047	n/a	150	n/a
P1-4	Paint Line 1 (Primer Line)	3.5	40	900	38.92482	-84.60923	n/a	72	n/a
P2-4	Paint Line 2 (Topcoat Line)	3.5	40	900	38.9248	-84.60900	n/a	72	n/a
P3-1	Mixing Booth	1	40	900	38.92484	-84.60927	n/a	72	n/a

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

DEP7007K

Division for Air Quality

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Surface Coating or Printing Operations

- ☒ Section K.1: Process Information
☒ Section K.2: Coating Operations
☒ Section K.3: Other Operations
☒ Section K.4: Coatings/Printing Materials as Applied
☒ Section K.5: HAP-containing Coatings/Printing Materials
☒ Section K.6: Notes, Comments, and Explanations

Additional Documentation

- ☒ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
☒ Attach SDS or Technical Sheets for all Coating/Printing Materials
☐ Attach a flow diagram

Source Name: Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 12/10/2024

Section K.1: Process Information

Emission Unit #: EU08

Emission Unit Name: Paint Lines

Coating/Printing Line Name: Paint Line 1 (Primer Line) and Paint Line 2 (Topcoat Line)

Proposed/Actual Date of Construction: (MM/YYYY) 01/2007

List Applicable Regulations: 401 KAR 59:010 and 401 KAR 63:002

Describe Overall Process: Coating of manufactured parts with primer and top coat

Describe Coatings/Printing Materials: Primer & Top coat

**Identify the Material
that is Coated/Printed:**

☒ Metal

☐ Vinyl

☐ Plastics

☐ Wood

☐ Foil

☐ Paper

☐ Other Substrate

Provide detailed description of material coated/printed:

Aluminum aircraft wheels and piston housings

**Provide approximate dimensions and range of sizes of parts being
coated or printed:**

Wheel halves are approximately 10" wide with 24" diameter

Identify the Type of Operation:

☐ Continuous

☒ Batch

☐ Other:

Describe Surface Preparation/Pretreatment Steps:

Anodizing

**For Coating
Operations:**

☒ Spray

☐ Flow

☐ Dip tank

☐ Electrodeposition

☐ Brush

☐ Powder

☐ Roller Coat

☐ Other:

For Printing Operations:
(Select all that apply)

☐ Web

☐ Rotogravure

☐ Heatset

☐ Lithographic

☐ Other:

☐ Sheetfed

☐ Letterpress

☐ Non-heatset

☐ Flexographic

Describe Final Product:

Coated parts

Check the category that most closely describes this unit:

☐ Large Appliance Coating

☐ Auto or Light-Duty Truck Coating

☐ Metal Furniture Coating

☐ Metal Coil Coating

☐ Beverage Can Coating

☐ Miscellaneous Metal Parts Coating

☐ Magnet Wire Insulation Coating

☐ Flat Wood Panel Coating

☐ Fabric, Vinyl, or Paper Coating

☐ Boat Manufacturing/ Ship Repair

☐ Pressure Sensitive Tape and Label Coating

☐ Magnet Tape Coating

☐ Publication Rotogravure Printing

☐ Coating of Plastic Parts for Business Machines

☐ Flexible Vinyl and Urethane Coating and Printing

☐ Graphic Arts using Rotogravure and Flexographic Printing

☒ Other: Aircraft parts

Section K.2: Coating Operations

K.2A: For Spray Coating					
Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate (gal/hr or lb/hr)	Describe how maximum rate was determined
Paint Line 1	Coating of parts with primer	☐ Conventional Air Gun ☐ Airless ☐ Electrostatic	☒ HVLP ☐ LVL P ☐ Automatic	0.56 gal./hr.	☐ Testing ☐ Equipment Specification Sheet ☒ Estimation
Paint Line 2	Coating of parts with top coat	☐ Conventional Air Gun ☐ Airless ☐ Electrostatic	☒ HVLP ☐ LVL P ☐ Other ☐ Manual ☐ Automatic	0.264 gal./hr.	☐ Testing ☐ Equipment Specification Sheet ☒ Estimation
If spray guns are used simultaneously, describe:					
K.2B: For Brush Coating					
Describe Function:					
Maximum Coating Application Rate: (gal/hr)					
K.2C: For Roller Coating					
Roller Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr)		Describe how maximum rate was determined	
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet	
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet	
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet	

K.2D: For Powder Coating

Powder Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr or lb/hr)	Describe how maximum rate was determined
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

If powder coating material is recycled, describe:

K.2E: For Flow Coating

Flow Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr or lb/hr)	Describe how maximum rate was determined
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2F: For Dip Tank/Electrodeposition Coating

Tank ID	Describe Function	Maximum Make-up Rate (gal/hr or lb/hr)	Describe how maximum rate was determined
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:
Complete Form DEP7007B as applicable

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity (MMBtu/hr)	Fuel	Control Device/Stack ID
Paint Line 1 Oven (Primer Cure)	Drying of painted parts	115kW	Electric	P1-1,P1-2,P1-3
Paint Line 2 Oven (Topcoat Cure)	Drying of painted parts	115kW	Electric	P2-1, P2-2, P2-3

K.3C: For Purge

Type: _____

Daily Usage: _____ gal/day

K.3D: For Clean-up

Type: ☒ Manual ☐ Automatic

Daily Usage: _____ 12 hrs/day

Operating Hours: _____ 6 am -6 pm

K.3E: For Other Equipment

Describe Processes:

Section K.4: Coatings/Printing Materials As Applied

Include SDS or Technical Sheets for all coating/printing materials used.

Trade Name of Material	Description (Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density (lb/gal)	Solid Content (lb/gal)	VOC Content (lb/gal)	Emission Factor for PM* (lb/SCC)	Transfer Efficiency (%)	Emission Factor for VOC (lb/SCC)	Capture Efficiency (%)	Control Device/ Stack ID
PU66	Topcoat	Paint Line 2	40200101	gallon	8.93	4.91	4.02	4.91	50.0%	4.02	98.5%	P2-1, P2-2, P2-3, P2-4
0730/9000	Hardener	Paint Line 2	40200101	gallon	7.84	0.	7.84	n/a	50.0%	7.84	98.5%	P2-1, P2-2, P2-3, P2-4
Aerodur UVR Clearcoat	Topcoat	Paint Line 2	40200101	gallon	8.37	3.85	4.52	3.85	50.0%	4.52	98.5%	P2-1, P2-2, P2-3, P2-4
S66/22R	Hardener	Paint Line 2	40200101	gallon	7.97	2.63	5.3	2.63	50.0%	5.3	98.5%	P2-1, P2-2, P2-3, P2-4
C25/90S	Thinner	Paint Line 2	40200901	gallon	7.09	0	7.09	n/a	50.0%	7.09	98.5%	P2-1, P2-2, P2-3, P2-4
10P20-13	Primer	Paint line 1	40200601	gallon	13.59	7.89	3.05	7.89	50.0%	3.05	98.5%	P1-1,P1-2,P1-3,P1-4
EC-213	Hardener	Paint line 1	40200101	gallon	7.92	0	7.92	n/a	50.0%	7.92	98.5%	P1-1,P1-2,P1-3,P1-4
Avoix "Grey" 7702	Topcoat	Paint Line 2	40200101	gallon	10.93	7.89	3.05	7.89	50.0%	3.05	98.5%	P2-1, P2-2, P2-3, P2-4
90150	Hardener	Paint Line 2	40200101	gallon	9.37	0	9.37	n/a	50.0%	9.37	98.5%	P2-1, P2-2, P2-3, P2-4
99321	Activator	Paint Line 2	40200101	gallon	7.49	0	7.49	n/a	50.0%	7.49	98.5%	P2-1, P2-2, P2-3, P2-4

Trade Name of Material	Description (Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density (lb/gal)	Solid Content (lb/gal)	VOC Content (lb/gal)	Emission Factor for PM* (lb/SCC)	Transfer Efficiency (%)	Emission Factor for VOC (lb/SCC)	Capture Efficiency (%)	Control Device/ Stack ID
LEH 460	Primer	Paint line 1	40200601	gallon	12.43	3.97	0.709	3.97	50.0%	0.709	98.5%	P1-1,P1-2,P1-3,P1-4
LEH 460 Part B	Hardener	Paint line 1	40200101	gallon	8.34	0	8.34	n/a	50.0%	8.34	98.5%	P1-1,P1-2,P1-3,P1-4
Avoix "White" 7702	Topcoat	Paint Line 2	40200101	gallon	10.96	7.93	3.03	7.93	50.0%	3.03	98.5%	P2-1, P2-2, P2-3, P2-4
SP350 Primer Plus Thinner	Primer	Paint line 1	40200601	gallon	10.55	7.91	2.38	7.91	50.0%	2.38	98.5%	P1-1,P1-2,P1-3,P1-4
SP350 Hardener	Hardener	Paint line 1	40200101	gallon	8.67	0	8.67	n/a	50.0%	8.67	98.5%	P1-1,P1-2,P1-3,P1-4
SP350 Thinner	Thinner	Paint line 1	40200901	gallon	7.32	0	7.32	n/a	50.0%	7.32	98.5%	P1-1,P1-2,P1-3,P1-4
XS420 Topcoat	Topcoat	Paint Line 2	40200101	gallon	11.98	5.98	3.18	5.98	50.0%	3.18	98.5%	P2-1, P2-2, P2-3, P2-4
XS 420 Hardener	Hardener	Paint Line 2	40200101	gallon	9.46	8.5	0.48	8.5	50.0%	0.48	98.5%	P2-1, P2-2, P2-3, P2-4
713	Thinner	Paint Line 2	40200901	gallon	7.35	0	7.35	n/a	50.0%	7.35	98.5%	P2-1, P2-2, P2-3, P2-4

**Emission factor for particulate matter (PM) should not include transfer efficiency.*

Section K.5: Hazardous Air Pollutant-containing Coatings/Printing Materials

List each individual hazardous air pollutant (HAP) contained in each material.

Trade Name of Material	HAP Name	HAP CAS #	Identify Solid (S) or Volatile (V)	HAP % by weight	HAP Emission Factor (lb/SCC)	Control Device/ Stack ID
10P20-13	Xylene	1330-20-7	V	3.%	.41 lb/gal	P2-1, P2-2, P2-3, P2-4
10P20-13	EthylBenzene	100-41-4	V	1.%	.14 lb/gal	P2-1, P2-2, P2-3, P2-4
10P20-13	MIBK	108-10-1	V	10.%	1.36 lb/gal	P2-1, P2-2, P2-3, P2-4
Avoix "White" 7702	Xylene	1330-20-7	V	2.5%	.55 lb/gal	P1-1, P1-2, P1-3, P1-4
Avoix "Grey" 7702	Xylene	1330-20-7	V	5.%	.27 lb/gal	P1-1, P1-2, P1-3, P1-4
Hardener 0730/9000	Toluene	108-88-3	V	50.%	3.92 lb/gal	P1-1, P1-2, P1-3, P1-4
Hardener 0730/9000	Xylene	1330-20-7	V	18.%	1.41 lb/gal	P1-1, P1-2, P1-3, P1-4
Hardener 0730/9000	EthylBenzene	100-41-4	V	3.%	.24 lb/gal	P1-1, P1-2, P1-3, P1-4
PU 66	Xylene	1330-20-7	V	10.%	.89 lb/gal	P1-1, P1-2, P1-3, P1-4
PU 66	EthylBenzene	100-41-4	V	5.%	.45 lb/gal	P1-1, P1-2, P1-3, P1-4

Trade Name of Material	HAP Name	HAP CAS #	Identify Solid (S) or Volatile (V)	HAP % by weight	HAP Emission Factor (lb/SCC)	Control Device/ Stack ID
Aerodur UVR Clearcoat	Xylene	1330-20-7	V	15.0%	1.26 lb/gal	P1-1, P1-2, P1-3, P1-4
Aerodur UVR Clearcoat	EthylBenzene	100-41-4	V	5.0%	.42 lb/gal	P1-1, P1-2, P1-3, P1-4
S66/22R	Xylene	1330-20-7	V	5.0%	.40 lb/gal	P1-1, P1-2, P1-3, P1-4
S66/22R	EthylBenzene	100-41-4	V	5.0%	.40 lb/gal	P1-1, P1-2, P1-3, P1-4
C25/90S	MIBK	108-10-1	V	10.0%	.71 lb/gal	P1-1, P1-2, P1-3, P1-4
XS420 Topcoat	Xylene	1330-20-7	V	10.0%	1.20 lb/gal	P1-1, P1-2, P1-3, P1-4
XS420 Topcoat	EthylBenzene	100-41-4	V	3.0%	.36 lb/gal	P1-1, P1-2, P1-3, P1-4

Section K.6: Notes, Comments, and Explanations

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

SAFETY DATA SHEET

Activator 99321

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Activator 99321
SDS code : A42879

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	
Industrial use	
Uses advised against	
Consumer use	

Product use : FOR INDUSTRIAL USE ONLY

1.3 Details of the supplier of the safety data sheet

Manufacturer : AkzoNobel Aerospace Coatings
Rijksstraatweg 31
2171 AJ Sassenheim
P.O. Box 3
2170 BA Sassenheim
The Netherlands

e-mail address of person responsible for this SDS : PSRA_SSH@akzonobel.com

1.4 Emergency telephone number

Supplier
Telephone number : + 31 (0)71 308 6944
Hours of operation : 24 hours

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 2, H225
Acute Tox. 4, H302
Acute Tox. 4, H332
Eye Irrit. 2, H319
Carc. 2, H351
STOT SE 3, H335

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

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SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word :

: Danger

Hazard statements :

: Highly flammable liquid and vapor.
Harmful if swallowed or if inhaled.
Causes serious eye irritation.
Suspected of causing cancer.
May cause drowsiness or dizziness.

Precautionary statements

Prevention

: Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

: IF exposed or concerned: Get medical attention.

Storage

: Store in a well-ventilated place.

Disposal

: Not applicable.

Hazardous ingredients

: 4-methylpentan-2-one
pentane-2,4-dione

Supplemental label elements

: Repeated exposure may cause skin dryness or cracking.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

: None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

: Mixture

SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Specific Conc. Limits, M-factors and ATEs	Type
4-methylpentan-2-one	REACH #: 01-2119473980-30 EC: 203-550-1 CAS: 108-10-1 Index: 606-004-00-4	≥25 - ≤46	Flam. Liq. 2, H225 Acute Tox. 4, H332 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H335 EUH066	-	[1] [2]
ethyl 3-ethoxypropionate	REACH #: 01-2119463267-34 EC: 212-112-9 CAS: 763-69-9	≥20 - ≤25	Flam. Liq. 3, H226 EUH066	-	[1]
pentane-2,4-dione	REACH #: 01-2119458968-15 EC: 204-634-0 CAS: 123-54-6 Index: 606-029-00-0	≥20 - ≤25	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 3, H331	-	[1]
n-butyl acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	≥10 - <20	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	-	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General

- : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.

Eye contact

- : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation

- : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact

- : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion

- : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

SECTION 4: First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Recommended: alcohol-resistant foam, CO₂, powders, water spray.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous combustion products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

Special protective actions for fire-fighters : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel

: Exclude sources of ignition and ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8.
- For emergency responders

: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions

: Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

- 6.3 Methods and materials for containment and cleaning up

: Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Preferably clean with a detergent. Avoid using solvents.

- 6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance.

7.1 Precautions for safe handling

- Protective measures

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000	50000

SECTION 7: Handling and storage

7.3 Specific end use(s)

Recommendations : Not available.
Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
4-methylpentan-2-one	EU OEL (Europe, 6/2019). Notes: list of indicative occupational exposure limit values STEL: 208 mg/m ³ 15 minutes. STEL: 50 ppm 15 minutes. TWA: 83 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
No DNELs/DMELs available.					

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
No PNECs available.			

8.2 Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory protection must be worn.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eyeface protection : Use safety eyewear designed to protect against splash of liquids.

Skin protection

Hand protection

SECTION 8: Exposure controls/personal protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves : For prolonged or repeated handling, use the following type of gloves:

May be used: nitrile rubber, neoprene

Recommended: butyl rubber

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:

Best Practice Guideline 5 "Safe Use of Gloves" (June 2010) published by the European Solvents Industry Group (ESIG), available at <http://www.esig.org/en/library/publications/best-practice-guides>

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection : Personnel should wear antistatic clothing made of natural fibers or of high-temperature-resistant synthetic fibers.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators.

Environmental exposure controls : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Typical.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range :

Flash point : Closed cup: 15°C

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Upper/lower flammability or explosive limits : Greatest known range: Lower: 2.4% Upper: 11.6% (pentane-2,4-dione)

Vapor pressure :

Vapor density : Highest known value: 5 (Air = 1) (ethyl 3-ethoxypropionate). Weighted average: 4.03 (Air = 1)

[DIN EN 1262]

[Pensky-Martens]

SECTION 9: Physical and chemical properties

Relative density	: 0.898	[DIN EN ISO 2811-1]
Solubility(ies)	: Not available.	
Partition coefficient: n-octanol/ water	: Not available.	
Auto-ignition temperature	:	
Decomposition temperature	: Not available.	
Viscosity	: Kinematic (room temperature): 0.45 cm ² /s Kinematic (40°C): 0.06 cm ² /s	[DIN EN ISO 3219]
<u>Particle characteristics</u>		
Median particle size	: Not applicable.	

9.2 Other information

No specific data.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.

10.5 Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

10.6 Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.
Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.
Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Acute toxicity

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SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
4-methylpentan-2-one	LC50 Inhalation Vapor	Rat - Male, Female	11.6 mg/l	4 hours
	LD50 Intraperitoneal	Guinea pig	800 mg/kg	-
	LD50 Intraperitoneal	Mouse	268 mg/kg	-
	LD50 Intraperitoneal	Rat	400 mg/kg	-
	LD50 Oral	Guinea pig	1600 mg/kg	-
ethyl 3-ethoxypropionate	LD50 Oral	Mouse	1900 mg/kg	-
	LD50 Oral	Mouse	2850 mg/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
	LD50 Oral	Rat	4600 mg/kg	-
	LD50 Dermal	Rabbit	10 mL/kg	-
pentane-2,4-dione	LD50 Oral	Rat	5 g/kg	-
	LD50 Oral	Rat	3200 mg/kg	-
	LC50 Inhalation Vapor	Rat	5.1 mg/l	4 hours
	LD50 Dermal	Rat	790 mg/kg	-
	LD50 Oral	Rat - Female	570 mg/kg	-
n-butyl acetate	LC50 Inhalation Gas.	Rat	390 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6 g/m³	2 hours
	LC50 Inhalation Vapor	Mouse	390 ppm	4 hours
	LD50 Dermal	Rat	>17600 mg/kg	-
	LD50 Intraperitoneal	Rabbit	1230 mg/kg	-
	LD50 Oral	Guinea pig	4700 mg/kg	-
	LD50 Oral	Mouse	6 g/kg	-
	LD50 Oral	Rabbit	3200 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Route	ATE value
Oral	1968.8 mg/kg
Dermal	2728.7 mg/kg
Inhalation (vapors)	15.18 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4-methylpentan-2-one	Eyes - Moderate irritant	Rabbit	-	24 hours 100 UI	-
	Eyes - Severe irritant	Rabbit	-	40 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
ethyl 3-ethoxypropionate	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Severe irritant	Rabbit	-	20 mg	-
	Skin - Mild irritant	Rabbit	-	488 mg	-
pentane-2,4-dione	Skin - Mild irritant	Rabbit	-	6 hours 11.2 MI I	-
	Skin - Moderate irritant	Rabbit	-	48 hours 11.	-
	Skin - Moderate irritant	Rabbit	-	2 MI I	-
n-butyl acetate	Skin - Moderate irritant	Rabbit	-	6 hours 33.6 MI I	-
	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary : Not available.

Sensitization

Conclusion/Summary : Not available.

Mutagenicity

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SECTION 11: Toxicological information

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
4-methylpentan-2-one	Category 3	Not applicable.	Respiratory tract irritation
n-butyl acetate	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

No additional information.

SECTION 12: Ecological information

12.1 Toxicity

There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as hazardous to the environment.

Product/ingredient name	Result	Species	Exposure
4-methylpentan-2-one	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 540000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 537000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
pentane-2,4-dione	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
	Acute EC50 75000 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata - Larvae	48 hours
n-butyl acetate	Acute EC50 75000 µg/l Fresh water	Daphnia - Daphnia magna - Larvae	48 hours
	Acute EC50 75000 µg/l Fresh water	Daphnia - Daphnia pulex - Larvae	48 hours
	Acute LC50 35400 uL/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 47600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 74300 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 66900 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 60100 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 71600 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 71700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 100000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 18000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 185000 µg/l Marine water	Fish - Menidia beryllina	96 hours
	Acute LC50 62000 µg/l Fresh water	Fish - Danio rerio	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
4-methylpentan-2-one ethyl 3-ethoxypropionate pentane-2,4-dione n-butyl acetate	1.9	-	low
	1.47	-	low
	0.68	-	low
	2.3	-	low

12.4 Mobility in soil

Soil/water partition : Not available.

coefficient (K_{oc})

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

SECTION 12: Ecological information

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Disposal considerations : Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

European waste catalogue (EWC)

The European Waste Catalogue classification of this product, when disposed of as waste, is:

Waste code	Waste designation
EWC 08 01 99	wastes not otherwise specified

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal considerations : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
14.3 Transport hazard class(es)	3 	3 	3 
14.4 Packing group	II	II	II
14.5 Environmental hazards	No.	No.	No.

Additional information

- ADR/RID : Special provisions 640 (C)
Tunnel code (D/E)
IMDG : Emergency schedules F-E, _S-E_

14.6 Special precautions for user : Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : Not applicable.
on the manufacture,
placing on the market
and use of certain
dangerous substances,
mixtures and articles

Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

SECTION 15: Regulatory information

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

National regulations

Industrial use

: The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

15.2 Chemical Safety Assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

CEPE code : 1

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 2, H225 Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H335	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H225 H226 H302 H311 H319 H331 H332 H335 H336 H351	Highly flammable liquid and vapor. Flammable liquid and vapor. Harmful if swallowed. Toxic in contact with skin. Causes serious eye irritation. Toxic if inhaled. Harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of causing cancer.
--	--

Full text of classifications [CLP/GHS]

Acute Tox. 3, H311 Acute Tox. 3, H331 Acute Tox. 4, H302 Acute Tox. 4, H332 Carc. 2, H351 EUH066 Eye Irrit. 2, H319 Flam. Liq. 2, H225 Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336	ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 Repeated exposure may cause skin dryness or cracking. SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 2 FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
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Date of issue/Date of revision

: 7/12/2023

Date of previous issue

: 4/14/2023

Version : 3.08

14/15

SECTION 16: Other information

(Narcotic effects) - Category 3

Date of printing : 12 July 2023
Date of issue/ Date of revision : 12 July 2023
Date of previous issue : 14 April 2023
Version : 3.08

Notice to reader

FOR PROFESSIONAL USE ONLY
IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

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IA_493

SAFETY DATA SHEET

Aerodur Clearcoat UVR

Section 1. Identification

GHS product identifier : **Aerodur Clearcoat UVR**
Other means of identification : 77263/000000 Aerodur Clearcoat UVR

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer
: Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.
service@akzonobel.com

Canadian Supplier
: Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
+1 (800) 618-1010

Emergency telephone number : CHEMTREC +1 (800) 424-9300 (Inside the US)
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

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Version : 25

Date of printing : 15 June 2016

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 2. Hazards identification

Classification of the substance or mixture

: FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (dermal) - Category 5
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Flammable liquid and vapour.
Harmful if inhaled.
May be harmful in contact with skin.
Causes serious eye irritation.
Causes skin irritation.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling.

Response

: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

: Store in a well-ventilated place. Keep cool.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification

: None known.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Hazardous ingredients

Section 3. Composition/information on ingredients

Ingredient name / Chemical name	%	CAS number
n-butyl acetate	10 - 15	123-86-4
xylene	10 - 15	1330-20-7
ethylbenzene	1 - 5	100-41-4
Isopropyl alcohol	1 - 5	67-63-0
2-(2H-benzotriazol-2-yl)-4,6-diterpitylphenol	1 - 5	25973-55-1
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	0 - 1	41556-26-7
n-butyl acrylate	0 - 1	141-32-2
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	0 - 1	82919-37-7

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled.
- Skin contact** : May be harmful in contact with skin. Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

Section 4. First aid measures

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:

pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:

irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical

: Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flames, smoking or flames in hazard area. Avoid breathing vapor or mist.

Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
n-butyl acetate	ACGIH TLV (United States, 3/2015). STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.
xylene	ACGIH TLV (United States, 3/2015). STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
ethylbenzene	ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours.
Isopropyl alcohol	ACGIH TLV (United States, 3/2015). STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.
n-butyl acrylate	ACGIH TLV (United States, 3/2015). Skin sensitizer. TWA: 2 ppm 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Not available.
Odor : TYPICAL.
Odor threshold : Not available.
pH : Not available.
Melting/freezing point : Not available.
Boiling point : 83°C (181.4°F)
boiling range : Not available.
Flash point : Closed cup: 23°C (73.4°F)
Evaporation rate : Not available.
Flammability (solid, gas) : Not available.
Upper/lower flammability or explosive limits

Upper: : Not determined.

Lower: : Not determined.

Vapor pressure

: Not available.

Vapor density

: Not available.

Relative density

: 1.003

Density

: 8.37 lbs/gal 1.003 g/cm³

Section 9. Physical and chemical properties

Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): 2.89 cm ² /s (289 cSt)
Weight Volatiles	: 54.06% (w/w)
Volume Volatiles	: 59.59 % (v/v)
Weight Solids	: 45.94 % (w/w)
Volume Solids	: 40.41 % (v/v)
Regulatory VOC	: 4.52 lbs/gal (542 g/l) minus water and exempt solvents

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name				
n-butyl acetate	LC50 Inhalation Vapor LD50 Dermal LD50 Oral	Rat Rabbit Rat	390 ppm >17600 mg/kg 10768 mg/kg	4 hours - -
xylene ethylbenzene	LD50 Oral LD50 Dermal LD50 Oral	Rat Rabbit Rat	4300 mg/kg >5000 mg/kg 3500 mg/kg	- - -
Isopropyl alcohol	LD50 Dermal LD50 Oral	Rabbit Rat	12800 mg/kg 5000 mg/kg	- -
n-butyl acrylate	LD50 Oral	Rat	900 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
xylene	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
Isopropyl alcohol	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
	Eyes - Mild irritant	Rabbit	-	50 milligrams	-
n-butyl acrylate	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
	Eyes - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
n-butyl acetate Isopropyl alcohol n-butyl acrylate	Category 3 Category 3 Category 3	Not applicable. Not applicable. Not applicable.	Narcotic effects Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ethylbenzene 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	Category 2 Category 2	Inhalation Oral	Not determined Not determined

Aspiration hazard

Name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Harmful if inhaled.
Skin contact : May be harmful in contact with skin. Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:

irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Potential chronic health effects

Not available.

General

: No known significant effects or critical hazards.

Carcinogenicity

: No known significant effects or critical hazards.

Mutagenicity

: No known significant effects or critical hazards.

Teratogenicity

: No known significant effects or critical hazards.

Developmental effects

: No known significant effects or critical hazards.

Fertility effects

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	13903.9 mg/kg
Dermal	4988.3 mg/kg
Inhalation (gases)	16530.5 ppm
Inhalation (vapors)	40.41 mg/l
Inhalation (dusts and mists)	5.51 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
n-butyl acetate	Acute LC50 32000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
xylene	Acute LC50 62000 µg/l	Fish - Danio rerio	96 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
ethylbenzene	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2930 to 4400 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 40000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Isopropyl alcohol	Acute LC50 1400000 to 1950000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours

Persistence and degradability

Not available.

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
n-butyl acetate	2.3	-	low
xylene	3.12	8.1 to 25.9	low
ethylbenzene	3.6	-	low
Isopropyl alcohol	0.05	-	low
n-butyl acrylate	2.38	17.27	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment of the DOT information.

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	xylene ethylbenzene	1330-20-7 100-41-4	10 - 15 1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

International lists

National inventory

Australia

: All components are listed or exempted.

Canada

: At least one component is not listed in DSL but all such components are listed in NDSL.

China

: All components are listed or exempted.

Europe

: At least one component is not listed.

Section 15. Regulatory information

Japan	: At least one component is not listed.
Malaysia	: At least one component is not listed.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision	: 15 June 2016
Version	: 25
MSDS #	: A36835 0016

Section 16. Other information

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Aviox 77702 Finish 054569 BAC707 M9001 Grey

Section 1. Identification

GHS product identifier : **Aviox 77702 Finish 054569 BAC707 M9001 Grey**
Other means of identification : 77702/054569 Aviox Finish 77702 grey BAC 707 - M 9001

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer

: Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.
service@akzonobel.com

Canadian Supplier

: Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
+1 (800) 618-1010

Emergency telephone number

: CHEMTREC +1 (800) 424-9300 (Inside the US)
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Date of issue / Date of revision : 23 May 2016

Version : 19

Date of printing : 23 May 2016

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

OSHA/HCS status

: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 2. Hazards identification

Classification of the substance or mixture

: FLAMMABLE LIQUIDS - Category 3
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Flammable liquid and vapour.
Causes serious eye irritation.
Causes skin irritation.
May cause drowsiness or dizziness.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling.

Response

: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

: Store in a well-ventilated place. Keep cool.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification

: None known.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Hazardous ingredients

Section 3. Composition/information on ingredients

Ingredient name / Chemical name	%	CAS number
titanium dioxide	25 - 30	13463-67-7
n-butyl acetate	20 - 25	123-86-4
cyclohexanone	1 - 5	108-94-1
xylene	1 - 5	1330-20-7
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	0 - 1	41556-26-7
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	0 - 1	82919-37-7
n-butyl acrylate	0 - 1	141-32-2

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact**

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation**

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact**

: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion**

: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact**

: Causes serious eye irritation.
- Inhalation**

: Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact**

: Causes skin irritation.
- Ingestion**

: Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.

Specific hazards arising from the chemical

: Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flames, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

- Advice on general occupational hygiene**
- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
 - : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
- Conditions for safe storage, including any incompatibilities**

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
titanium dioxide	ACGIH TLV (United States, 3/2015). TWA: 10 mg/m³ 8 hours.
n-butyl acetate	ACGIH TLV (United States, 3/2015). STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.
cyclohexanone	ACGIH TLV (United States, 3/2015). Absorbed through skin. STEL: 50 ppm 15 minutes. TWA: 20 ppm 8 hours.
xylene	ACGIH TLV (United States, 3/2015). STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
n-butyl acrylate	ACGIH TLV (United States, 3/2015). Skin sensitizer. TWA: 2 ppm 8 hours.

Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Gray.
Odor	: TYPICAL.
Odor threshold	: Not available.
pH	: Not available.
Melting/freezing point	: Not available.
Boiling point	: 126°C (258.8°F)
boiling range	: Not available.
Flash point	: Closed cup: 23°C (73.4°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Upper/lower flammability or explosive limits	
Upper:	: Not determined.
Lower:	

Section 9. Physical and chemical properties

Vapor pressure	: Not determined.
Vapor density	: Not available.
Relative density	: Not available.
Density	: 1.31
Solubility	: 10.93 lbs/gal 1.31 g/cm ³
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): 1.37 cm ² /s (137 cSt)
Weight Volatiles	: 27.77% (w/w)
Volume Volatiles	: 40.38 %(v/v)
Weight Solids	: 72.23 %(w/w)
Volume Solids	: 59.62 %(v/v)
Regulatory VOC	: 3.05 lbs/gal (366 g/l) minus water and exempt solvents

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name				
n-butyl acetate	LC50 Inhalation Vapor	Rat	390 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
cyclohexanone	LD50 Oral	Rat	10768 mg/kg	-
xylene	LD50 Oral	Rat	1800 mg/kg	-
n-butyl acrylate	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Oral	Rat	900 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
cyclohexanone	Eyes - Severe irritant	Rabbit	-	24 hours 250 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Human	-	48 hours 50 Percent	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
n-butyl acrylate	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	50 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Section 11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
n-butyl acetate n-butyl acrylate	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact : Causes serious eye irritation.
- Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact : Causes skin irritation.
- Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

- pain or irritation
- watering
- redness

Inhalation

: Adverse symptoms may include the following:

- nausea or vomiting
- headache
- drowsiness/fatigue
- dizziness/vertigo
- unconsciousness

Skin contact

: Adverse symptoms may include the following:

- irritation
- redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects

: Not available.

Potential delayed effects

: Not available.

Long term exposure

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General : No known significant effects or critical hazards.
- Carcinogenicity : No known significant effects or critical hazards.
- Mutagenicity : No known significant effects or critical hazards.
- Teratogenicity : No known significant effects or critical hazards.
- Developmental effects : No known significant effects or critical hazards.
- Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	12563.1 mg/kg
Dermal	14484.7 mg/kg
Inhalation (gases)	24009.1 ppm
Inhalation (vapors)	58.69 mg/l
Inhalation (dusts and mists)	8.003 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
n-butyl acetate	Acute LC50 32000 µg/l	Crustaceans - Artemia salina - Nauplii	48 hours
	Acute LC50 62000 µg/l	Fish - Danio rerio	96 hours
	Acute EC50 32.9 mg/l	Algae - Chlamydomonas reinhardtii - Exponential growth phase	72 hours
cyclohexanone	Acute LC50 630000 µg/l	Fish - Pimephales promelas	96 hours
	Chronic EC10 3.56 mg/l	Algae - Chlamydomonas reinhardtii - Exponential growth phase	72 hours
xylene	Acute LC50 8500 µg/l	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l	Fish - Pimephales promelas	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
titanium dioxide	-	352	low
n-butyl acetate	2.3	-	low
cyclohexanone	0.86	-	low
xylylene	3.12	8.1 to 25.9	low
n-butyl acrylate	2.38	17.27	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment of the DOT information.

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	xylene ethylbenzene	1330-20-7 100-41-4	1 - 5 0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

International lists

National inventory

Australia

: At least one component is not listed.

Canada

: At least one component is not listed.

China

: At least one component is not listed.

Europe

: All components are listed or exempted.

Japan

: At least one component is not listed.

Malaysia

: At least one component is not listed.

Section 15. Regulatory information

New Zealand	: At least one component is not listed.
Philippines	: At least one component is not listed.
Republic of Korea	: At least one component is not listed.
Taiwan	: All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 23 May 2016

Version : 19

MSDS # : A42088
0031

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships,

Section 16. Other information

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Aviox 77702 Topcoat 022865 White

Section 1. Identification

GHS product identifier : **Aviox 77702 Topcoat 022865 White**
Other means of identification : 77715/022865 Aviox Finish 77702 white BAC 7067

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer
: Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.
service@akzonobel.com

Canadian Supplier
: Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
+1 (800) 618-1010

Emergency telephone number : CHEMTREC +1 (800) 424-9300 (Inside the US)
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Date of issue / Date of revision : 19 November 2015
Version : 16

Date of printing : 19 November 2015

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 2. Hazards identification

Classification of the substance or mixture

: FLAMMABLE LIQUIDS - Category 3
SKIN CORROSION/IRRITATION - Category 3
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 71.7%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 39.3%

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Flammable liquid and vapour.
Causes serious eye damage.
Causes mild skin irritation.
May cause drowsiness or dizziness.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor.

Response

: Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
: Store in a well-ventilated place. Keep cool.

Storage

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification

: None known.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Hazardous ingredients

Section 3. Composition/information on ingredients

Ingredient name / Chemical name	%	CAS number
titanium dioxide	25 - 50	13463-67-7
n-butyl acetate	10 - 25	123-86-4
cyclohexanone	2.5 - 10	108-94-1
xylene	1 - 2.5	1330-20-7
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	0 - 1	41556-26-7
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	0 - 1	82919-37-7
n-butyl acrylate	0 - 1	141-32-2

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact**

: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation**

: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact**

: Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion**

: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects. acute and delayed

Potential acute health effects

- Eye contact**

: Causes serious eye damage.
- Inhalation**

: Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.

Section 4. First aid measures

Skin contact : Causes mild skin irritation.
Ingestion : Can cause central nervous system (CNS) depression. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical

: Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
titanium dioxide	ACGIH TLV (United States, 3/2015). TWA: 10 mg/m³ 8 hours.
n-butyl acetate	ACGIH TLV (United States, 3/2015). STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.
cyclohexanone	ACGIH TLV (United States, 3/2015). Absorbed through skin. STEL: 50 ppm 15 minutes. TWA: 20 ppm 8 hours.
xylene	ACGIH TLV (United States, 3/2015). STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
n-butyl acrylate	ACGIH TLV (United States, 3/2015). Skin sensitizer. TWA: 2 ppm 8 hours.

Section 8. Exposure controls/personal protection

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : White.
: TYPICAL.
Odor : Not available.
Odor threshold : Not available.
pH : Not available.
Melting/freezing point : Not available.
Boiling point : 126°C (258.8°F)
boiling range : Not available.
Flash point : Closed cup: 23°C (73.4°F)
Evaporation rate : Not available.
Flammability (solid, gas) : Not available.
Upper/lower flammability or explosive limits

Upper: : Not determined.
Lower: : Not determined.

Vapor pressure : Not available.
Vapor density : Not available.
Relative density : 1.313
Density : 10.96 lbs/gal 1.313 g/cm³
Solubility : Not available.
Solubility in water : Not available.
Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.
Decomposition temperature : Not available.

Viscosity : Kinematic (room temperature): 1.37 cm²/s (137 cSt)

Weight Volatiles : 27.65% (w/w)

Volume Volatiles : 40.33 %(v/v)

Weight Solids : 72.35 %(w/w)

Volume Solids : 59.67 %(v/v)

Regulatory VOC : 3.03 lbs/gal (363 g/l) minus water and exempt solvents

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Section 10. Stability and reactivity

Incompatible materials

: Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-butyl acetate	LC50 Inhalation Vapor LD50 Dermal LD50 Oral	Rat Rabbit Rat		390 ppm >17600 mg/kg 10768 mg/kg	4 hours - -
cyclohexanone	LD50 Oral	Rat		1800 mg/kg	-
xylene	LD50 Oral	Rat		4300 mg/kg	-
n-butyl acrylate	LD50 Oral	Rat		900 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
cyclohexanone	Eyes - Severe irritant	Rabbit	-	24 hours 250 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Human	-	48 hours 50 Percent	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
xylene	Eyes - Mild irritant Eyes - Severe irritant	Rabbit Rabbit	- -	87 milligrams 24 hours 5 milligrams	- -
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
n-butyl acrylate	Skin - Moderate irritant Eyes - Mild irritant	Rabbit Rabbit	- -	100 Percent 24 hours 500 milligrams	- -
	Eyes - Mild irritant Skin - Mild irritant	Rabbit Rabbit	- -	50 milligrams 24 hours 10 milligrams	- -
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Section 11. Toxicological information

Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
n-butyl acetate n-butyl acrylate	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** : Causes mild skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

- pain
- watering
- redness

Inhalation : Adverse symptoms may include the following:

- nausea or vomiting
- headache
- drowsiness/fatigue
- dizziness/vertigo
- unconsciousness

Section 11. Toxicological information

- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General

: No known significant effects or critical hazards.

Carcinogenicity

: No known significant effects or critical hazards.

Mutagenicity

: No known significant effects or critical hazards.

Teratogenicity

: No known significant effects or critical hazards.

Developmental effects

: No known significant effects or critical hazards.

Fertility effects

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	12372.2 mg/kg
Dermal	5772.5 mg/kg
Inhalation (gases)	58046.5 ppm
Inhalation (vapors)	57.72 mg/l
Inhalation (dusts and mists)	19.35 mg/l

Section 12. Ecological information

Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
titanium dioxide	Acute LC50 3 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 6.5 mg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
	Acute LC50 32000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
n-butyl acetate	Acute LC50 62000 µg/l	Fish - Danio rerio	96 hours
	Acute EC50 32.9 mg/l Fresh water	Algae - Chlamydomonas reinhardtii - Exponential growth phase	72 hours
cyclohexanone	Acute LC50 630000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic EC10 3.56 mg/l Fresh water	Algae - Chlamydomonas reinhardtii - Exponential growth phase	72 hours
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
titanium dioxide	-	352	low
n-butyl acetate	2.3	-	low
cyclohexanone	0.86	-	low
xylene	3.12	8.1 to 25.9	low
n-butyl acrylate	2.38	17.27	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

- : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when

Section 13. Disposal considerations

handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment of the DOT information.

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3  	3 	3 	3  	3 
Packing group	III	III	III	III	III
Environmental hazards	Yes.	No.	No.	Yes.	No.

Section 15. Regulatory information

U.S. Federal regulations

United States Inventory (TSCA 8b) : All components are listed or exempted.

SARA 311/312

Section 15. Regulatory information

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	xylene ethylbenzene	1330-20-7 100-41-4	1 - 5 0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

International lists

National inventory

- Australia** : At least one component is not listed.
- Canada** : At least one component is not listed.
- China** : At least one component is not listed.
- Europe** : All components are listed or exempted.
- Japan** : At least one component is not listed.
- Malaysia** : At least one component is not listed.
- New Zealand** : At least one component is not listed.
- Philippines** : At least one component is not listed.
- Republic of Korea** : At least one component is not listed.
- Taiwan** : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Section 16. Other information



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 19 November 2015

Version : 16

MSDS # : A43875

0021

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships,

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

FINITION XS420 BASE - 169XXXXXB



SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : FINITION XS420 BASE

Product code : 169XXXXXB.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Solvent based 2K polyurethane paint

1.3. Details of the supplier of the safety data sheet

Registered company name : MAPAERO- Aerospace Coatings.

Address : 10 Avenue de la Rijole.09100.Pamiers.France.

Telephone : 33 (0)5 34 01 34 01. Fax : 33 (0)5 61 60 23 30.

sales.mapaero@mapaero.com

www.mapaero.com

1.4. Emergency telephone number : 33 (0)1 45 42 59 59 .

Association/Organisation : ORFILA.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Flammable liquid, Category 3 (Flam. Liq. 3, H226).

This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Flammable (R 10).

This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

Mixture for spray application.

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS02

Signal Word :

WARNING

Hazard statements :

H226

Flammable liquid and vapour.

Precautionary statements - Prevention :

P233

Keep container tightly closed.

P241

Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242

Use only non-sparking tools.

P243

Take precautionary measures against static discharge.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - Response :
P303 + P361 + P353
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Precautionary statements - Storage :
P403 + P235
Store in a well-ventilated place. Keep cool.

2.3. Other hazards
The mixture does not contain any substances classified as 'Substances of Very High Concern' (SVHC) by the European Chemical s Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>
The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1. Substances

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.
- 3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
INDEX: M009 CAS: 13463-67-7 EC: 236-675-8 REACH: 01-2119489379-17-0002			[1]	25 <= x % < 50
DIOXYDE DE TITANE INDEX: 607-025-00-1 CAS: 123-86-4 EC: 204-658-1 REACH: 01-2119485493-29	GHS02, GHS07 Wng Flam. Liq. 3, H226 STOT SE 3, H336 EUH:066	R10 R66-R67	[1]	10 <= x % < 25
N-BUTYL ACETATE INDEX: 601-022-00-9 CAS: 1330-20-7 EC: 215-535-7	GHS02, GHS07 Wng Flam. Liq. 3, H226 Acute Tox. 4, H332 Acute Tox. 4, H312 Skin Irrit. 2, H315	Xn Xn;R20/21 Xi;R38 R10	C [1]	2.5 <= x % < 10
XYLENE INDEX: 607-195-00-7 CAS: 108-65-6 EC: 203-603-9 REACH: 01-2119475791-29	GHS02 Wng Flam. Liq. 3, H226	R10	[1]	2.5 <= x % < 10
2-METHOXY-1-METHYLETHYL ACETATE INDEX: M006 CAS: 7727-43-7 EC: 231-784-4			[1]	2.5 <= x % < 10
SULFATE DE BARIUM				

Information on ingredients :
[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of splashes or contact with eyes :

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

In the event of swallowing :

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.
Keep the person exposed at rest. Do not force vomiting.
Seek medical attention, showing the label.
If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Indication of any immediate medical attention and special treatment needed

No data available.

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SECTION 5 : FIREFIGHTING MEASURES

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

5.1. Extinguishing media

In the event of fire, use specifically suitable extinguishing agents. Never use water.
Keep packages near the fire cool, to prevent pressurised containers from bursting.

Suitable methods of extinction

In the event of a fire, use :

- water with AFFF (Aqueous Film Forming Foam) additive

- foam

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water
- water jet
- sprayed water or water mist

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)

5.3. Advice for firefighters

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non fire-fighters

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

For fire-fighters

Fire-fighters will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Ensure that there is adequate ventilation, especially in confined areas.

Fire prevention :

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Prevent the accumulation of electrostatic charges with connections to earth.

The mixture can become electrostatically charged : always earth during decanting operations. Wear antistatic shoes and clothing and floors should be electrically conductive.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.
Observe precautions stated on label and also industrial safety regulations.
Never pour water into this mixture.
Where the personnel must carry out work in a booth, whether for spraying or otherwise, the ventilation may be inadequate to control particles and solvent vapors in every case.
It is therefore recommended that personnel wear masks with a compressed air supply during spraying operations until the concentration of particles and solvent vapors has fallen below the exposure limits.
Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.
Keep away from all sources of ignition - do not smoke.
Keep well away from all sources of ignition, heat and direct sunlight
Avoid accumulation of electrostatic charges.
The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROL/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- European Union (2009/161/EU, 2006/15/EC, 2000/39/EC, 98/24/EC)

CAS	VME-mg/m3	VME-ppm	VLE-mg/m3	VLE-ppm	Notes
1330-20-7	221	50	442	100	Peau
108-65-6	275	50	550	100	Peau

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :

CAS	VME :	VME :	Excess	Notes
1330-20-7	100 ml/m3	440 mg/m3	2(l)	DFG, H
108-65-6	50 ml/m3	270 mg/m3	1(l)	DFG, EU, Y

- France (INRS - ED984 :2008) :

CAS	VME-ppm	VME-mg/m3	VLE-ppm	VLE-mg/m3	Notes	TMP No :
13463-67-7	-	10	-	-	-	-
123-86-4	150	710	200	940	-	84
1330-20-7	50	221	100	442	*	4 Bis, 84, *
108-65-6	50	275	100	550	-	-

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
13463-67-7	10 mg/m3	-	-	-	TI
123-86-4	150 ppm	200 ppm	-	-	-
1330-20-7	50 ppm	100 ppm	-	-	-
108-65-6	50 ppm	100 ppm	-	-	-
7727-43-7	4 mg/m3	-	-	-	R

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

- Avoid contact with eyes.
- Use eye protectors designed to protect against liquid splashes
- Before handling, wear safety goggles in accordance with standard EN166.

- Hand protection

- Wear suitable protective gloves in the event of prolonged or repeated skin contact.
- Type of gloves recommended :
 - PVA (Polyvinyl alcohol)
 - Butyl Rubber (Isobutylene-isoprene copolymer)
 - Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- Recommended properties :
 - Impervious gloves in accordance with standard EN374

- Body protection

- Suitable type of protective clothing :
Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1 to prevent skin contact.
- In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.
- Suitable type of protective boots :
ISO 2345
- Work clothing worn by personnel shall be laundered regularly.
- After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

- Type of mask with combined filters :
Wear a half mask in accordance with standard EN140.
- Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :
 - A2 (Brown)
- Particle filter according to standard EN143 :
 - P3 (White)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :

viscous liquid.

Important health, safety and environmental information

- pH :
Boiling point/boiling range :
Flash Point Interval :
Vapour pressure (50°C) :
Density :
Water solubility :
Melting point/melting range :
Self-ignition temperature :
Decomposition point/decomposition range :
- Not relevant.
126 °C.
23°C <= PE <= 55°C
Below 110 kPa (1.10 bar).
> 1
Insoluble.
-78 °C.
420 °C.
not relevant.

9.2. Other information

VOC (g/l) : 381

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.

FINITION XS420 BASE - 169XXXXXB

- heating
- heat
- flames and hot surfaces
- humidity

10.5. Incompatible materials

Keep away from :

- water
- acids
- bases
- oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Splashes in the eyes may cause irritation and reversible damage

11.1.1. Substances

No toxicological data available for the substances.

11.1.2. Mixture

No toxicological data available for the mixture.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK) :

WGK 2 (VwVwS vom 27/07/2005, KBWs) : Hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste. :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :

15 01 10 * packaging containing residues of or contaminated by dangerous substances

08 01 11 * waste paint and varnish containing organic solvents or other dangerous substances

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2011 - IMDG 2010 - ICAO/IATA 2012).

14.1. UN number
1263

14.2. UN proper shipping name

UN1263=PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound)

14.3. Transport hazard class(es)

- Classification :



3

14.4. Packing group

III

14.5. Environmental hazards

-

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	3	F1	III	3	30	5 L	163 640EE 650	E1	3	D/E

Not subject to this regulation if Q < 450l.

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
	3	-	III	5 L	F-E-S-E	163 223 955	E1

Not subject to this regulation if Q < 30l

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	3	-	III	355	60 L	366	220 L	A3 A72	E1
	3	-	III	Y344	10 L	-	-	A3 A72	E1

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available.

SECTION 15 : REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Classification and labeling information included in section 2:

The following regulations have been used:

- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- Regulation EC 1272/2008 modified by regulation EC 286/2011

- Container information:

No data available.

- Particular provisions :

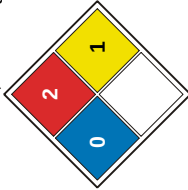
No data available.

- German regulations concerning the classification of hazards for water (WGK) :

Germany : WGK 2 (VwVwS vom 27/07/2005, KBws)

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704) :

NFPA 704, Labelling: Health=0 Inflammability=2 Instability/Reactivity=1 Specific Risk=none



15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.
The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.
It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.
The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Hazard symbols :
Flammable

Risk phrase :

R 10

Flammable.

Title for H, EUH and R indications mentioned in section 3 :

H226

Flammable liquid and vapour.

H312

Harmful in contact with skin.

H315

Causes skin irritation.

H332

Harmful if inhaled.

H336

May cause drowsiness or dizziness.

EUH066

Repeated exposure may cause skin dryness or cracking.

R 10

Flammable.

R 20/21

Harmful by inhalation and in contact with skin.

R 38

Irritating to skin.

R 66

Repeated exposure may cause skin dryness or cracking.

R 67

Vapours may cause drowsiness and dizziness.

Abbreviations :

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

GHS02 : Flame



SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Hardener 90150
MSDS code : A42882
Product code : 90150/000000

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	
Hardener for Aerospace coating	
Uses advised against	Reason
For professional use only.	

1.3 Details of the supplier of the safety data sheet

AkzoNobel Aerospace Coatings
Rijksstraatweg 31
2171 AJ Sassenheim
P.O. Box 3
2170 BA Sassenheim
The Netherlands

e-mail address of person responsible for this SDS : PSRA_SSH@akzonobel.com

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : Not available.

Supplier

Telephone number : + 31 (0)71 308 6944

Hours of operation : 24 hours

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 3, H226

Acute Tox. 4, H332

Skin Sens. 1, H317

STOT SE 3, H335

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.
See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

SECTION 2: Hazards identification

2.2 Label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Flammable liquid and vapor.
Harmful if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary statements

Prevention

: Wear protective gloves. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

: Not applicable.

Storage

: Store in a well-ventilated place.

Disposal

: Not applicable.

Hazardous ingredients

: Hexamethylene diisocyanate, oligomers
hexamethylene-di-isocyanate

Supplemental label elements

: Contains isocyanates. May produce an allergic reaction.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: Not applicable.

2.3 Other hazards

Other hazards which do not result in classification

: None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

: Mixture

Product/ingredient name	Identifiers	%	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
Hexamethylene diisocyanate, oligomers	EC: 500-060-2 CAS: 28182-81-2	≥90	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]
4-methylpentan-2-one	EC: 203-550-1 CAS: 108-10-1 Index: 606-004-00-4	≥5 - <7.8	Flam. Liq. 2, H225 Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 EUH066	[1] [2]
				[1] [2]

Date of issue/Date of revision

: 2/13/2019.

Date of previous issue

: 1/24/2019.

Version : 21.

06

2/15



SECTION 3: Composition/information on ingredients

hexamethylene-di-isocyanate	EC: 212-485-8 CAS: 822-06-0 Index: 615-011-00-1	≥0.1 - <0.19	Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.
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There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation

SECTION 4: First aid measures

and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Hexamethylene diisocyanate, oligomers, hexamethylene-di-isocyanate. May produce an allergic reaction.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed.
The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Recommended: alcohol-resistant foam, CO₂, powders, water spray or mist.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

5.3 Advice for firefighters

Special protective actions for fire-fighters : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Exclude sources of ignition and ventilate the area. Avoid breathing vapor or mist.
Refer to protective measures listed in sections 7 and 8.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

SECTION 6: Accidental release measures

6.3 Methods and materials for containment and cleaning up : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13).

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

Examination of lung function should be carried out on a regular basis on persons spraying this mixture.

7.1 Precautions for safe handling

: Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits.
In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.
Mixture may charge electrostatically: always use earthing leads when transferring from one container to another.
Operators should wear antistatic footwear and clothing and floors should be of the conducting type.
Care should be taken when re-opening partly-used containers. Precautions should be taken to minimize exposure to atmospheric humidity or water. CO₂ will be formed, which, in closed containers, could result in pressurization. Keep away from heat, sparks and flame. No sparking tools should be used.
Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Put on appropriate personal protective equipment (see Section 8).
Never use pressure to empty. Container is not a pressure vessel.
Always keep in containers made from the same material as the original one.
Comply with the health and safety at work laws.
Do not allow to enter drains or watercourses.
Information on fire and explosion protection
Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air.

7.2 Conditions for safe storage, including any incompatibilities



SECTION 7: Handling and storage

Store in accordance with local regulations.

Notes on joint storage

Keep away from: oxidizing agents, strong alkalis, strong acids.

Additional information on storage conditions

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep container tightly closed.

Keep away from sources of ignition. No smoking. Prevent unauthorized access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Hexamethylene diisocyanate, oligomers	EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitizer. STEL: 0.07 mg/m ³ , (as NCO) 15 minutes. TWA: 0.02 mg/m ³ , (as NCO) 8 hours.
4-methylpentan-2-one	EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 416 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 208 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
hexamethylene-di-isocyanate	EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitizer. STEL: 0.07 mg/m ³ , (as NCO) 15 minutes. TWA: 0.02 mg/m ³ , (as NCO) 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available.

SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.

Examination of lung function should be carried out on a regular basis on persons spraying this mixture.

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. Air-fed protective respiratory equipment must be worn by the spray operator, even when good ventilation is provided. In other operations, if local exhaust ventilation and good general extraction are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory protection must be worn.
(See Occupational exposure controls.)

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Use safety eyewear designed to protect against splash of liquids.

Skin protection

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves

: For prolonged or repeated handling, use the following type of gloves:

Recommended: butyl rubber

Not recommended: nitrile rubber

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection

: Personnel should wear antistatic clothing made of natural fibers or of high-temperature-resistant synthetic fibers.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: By spraying: air-fed respirator.

By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask.

SECTION 8: Exposure controls/personal protection

Workers must use a compressed-air breathing apparatus to EN 14594, with an assigned protection factor of at least 20.

Selection of any respiratory protective equipment should ensure that it is adequate to reduce exposure to protect the worker's health and is suitable for the wearer, task and environment, including consideration of the facial features of the wearer.

Environmental exposure controls : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Product Specific Information
Odor	: TYPICAL.
Odor threshold	: Not available.
pH	: Neutral.
Melting point/freezing point	: Not available.
Initial boiling point and boiling range	: 118°C
Flash point	: Closed cup: 40°C
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Upper/lower flammability or explosive limits	: Greatest known range: Lower: 1.4% Upper: 7.5% (4-methylpentan-2-one)
Vapor pressure	: Not available.
Vapor density	: Highest known value: 3.45 (Air = 1) (4-methylpentan-2-one).
Relative density	: 1.124
Solubility(ies)	: Not available.
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): 0.36 cm ² /s
Explosive properties	: Not available.
Oxidizing properties	: Not available.
VOC content	: 81 g/l [ISO 11890-2]

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions :

SECTION 10: Stability and reactivity

The product reacts slowly with water, resulting in the production of carbon dioxide.
In closed containers, pressure buildup could result in distortion, expansion and, in extreme cases, bursting of the container.

10.4 Conditions to avoid : In a fire, hazardous decomposition products may be produced.

10.5 Incompatible materials : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Hexamethylene diisocyanate, oligomers, hexamethylene-di-isocyanate. May produce an allergic reaction.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4-methylpentan-2-one	LD50 Oral	Rat	2080 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Route		ATE value
Inhalation (vapors)	10.95 mg/l	

Irritation/Corrosion



SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hexamethylene diisocyanate, oligomers	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
4-methylpentan-2-one	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Eyes - Severe irritant	Rabbit	-	40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Conclusion/Summary : Not available.

Sensitization

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Hexamethylene diisocyanate, oligomers	Category 3	Not applicable.	Respiratory tract irritation
4-methylpentan-2-one	Category 3	Not applicable.	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Other information

: Not available.

SECTION 12: Ecological information

12.1 Toxicity

There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as hazardous to the environment.



SECTION 12: Ecological information

Product/ingredient name	Result	Species	Exposure
4-methylpentan-2-one	Acute LC50 505000 to 514000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Hexamethylene diisocyanate, oligomers 4-methylpentan-2-one hexamethylene-di-isocyanate	5.54	367.7	low
	1.9	-	low
	0.02	57.63	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal

: The generation of waste should be avoided or minimized wherever possible.
Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Disposal considerations

: Do not allow to enter drains or watercourses. Residues in empty containers should be neutralized with a decontaminant (see section 6).
Dispose of according to all federal, state and local applicable regulations.
If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.
For further information, contact your local waste authority.



SECTION 13: Disposal considerations

European waste catalogue (EWC)

The European Waste Catalogue classification of this product, when disposed of as waste, is:

Waste code	Waste designation
08 01 99	wastes not otherwise specified

Packaging

Methods of disposal

: The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal considerations

: Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.
 Empty containers must be scrapped or reconditioned.
 Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Type of packaging CEPE Guidelines	15 01 10* European waste catalogue (EWC) packaging containing residues of or contaminated by hazardous substances
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Special precautions

: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	3 	3 	3 
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Additional information	Special provisions 640 (E) Tunnel code (D/E)	F-E, _S-E, _ _	-

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 14: Transport information

14.7 Transport in bulk : Not applicable.
according to Annex II of
MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : Not applicable.
on the manufacture,
placing on the market
and use of certain
dangerous substances,
mixtures and articles

Other EU regulations

VOC

: The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

VOC for Ready-for-Use Mixture

: Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

National regulations

Industrial use

: The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

SECTION 15: Regulatory information

15.2 Chemical Safety Assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

CEPE code : 5

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	On basis of test data Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H225 H226 H315 H317 H319 H331 H332 H334 H335	Highly flammable liquid and vapor. Flammable liquid and vapor. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Toxic if inhaled. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
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Full text of classifications [CLP/GHS]

Acute Tox. 3, H331 Acute Tox. 4, H332 EUH066 Eye Irrit. 2, H319 Flam. Liq. 2, H225 Flam. Liq. 3, H226 Resp. Sens. 1, H334 Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335	ACUTE TOXICITY (inhalation) - Category 3 ACUTE TOXICITY (inhalation) - Category 4 Repeated exposure may cause skin dryness or cracking. SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 2 FLAMMABLE LIQUIDS - Category 3 RESPIRATORY SENSITIZATION - Category 1 SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
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Notice to reader

FOR PROFESSIONAL USE ONLY

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise)



SECTION 16: Other information

is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

Brand names mentioned in this data sheet are trademarks of or are licensed to Akzo Nobel.

Head Office

AkzoNobel Aerospace Coatings, Rijkssstraatweg 31 2171 AJ Sassenheim. <http://www.akzonobel.com/aerospace>

SAFETY DATA SHEET

Hardener S 66/22 R

Section 1. Identification

GHS product identifier : **Hardener S 66/22 R**
Other means of identification : 90030/000000 Hardener S 66/22 R

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer : Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.
service@akzonobel.com

Canadian Supplier : Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
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CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Date of issue / Date of revision : 5 October 2020

Safety Data Sheet Version : 5

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Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Section 2. Hazards identification

GHS label elements

Hazard pictograms



Signal word

Hazard statements

- : Warning
: Flammable liquid and vapor.
: Causes serious eye irritation.
: Causes skin irritation.
: Suspected of causing cancer.
: May cause drowsiness or dizziness.

Precautionary statements

Prevention

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

Response

- : IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

- : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal

- : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified

- : None known.

Section 3. Composition/information on ingredients

Substance/mixture

- : Mixture

Ingredient name	%	CAS number
n-butyl acetate	55 - 60	123-86-4
Hexamethylene diisocyanate, oligomers	30 - 35	28182-81-2
2-methoxy-1-methylethyl acetate	5 - 10	108-65-6
xylene	1 - 5	1330-20-7
ethylbenzene	1 - 5	100-41-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First aid measures

Inhalation	: Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.

Specific hazards arising from the chemical

: Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink.

incompatibilities Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
n-butyl acetate	NIOSH REL (United States, 10/2016). STEL: 950 mg/m ³ 15 minutes. STEL: 200 ppm 15 minutes. TWA: 710 mg/m ³ 10 hours. TWA: 150 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 710 mg/m ³ 8 hours. TWA: 150 ppm 8 hours. ACGIH TLV (United States, 3/2017). STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours. None.
Hexamethylene diisocyanate, oligomers 2-methoxy-1-methylethyl acetate	AIHA WEEL (United States, 10/2011). TWA: 50 ppm 8 hours.
xylene	ACGIH TLV (United States, 3/2016). STEL: 651 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. OSHA PEL (United States, 6/2016). TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
ethylbenzene	ACGIH TLV (United States, 3/2017). TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2016). STEL: 545 mg/m ³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 435 mg/m ³ 10 hours. TWA: 100 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eyeface protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Typical.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting/freezing point** : Not available.

Section 9. Physical and chemical properties

Boiling point	: 126°C (258.8°F)
boiling range	: Not available.
Flash point	: Closed cup: 27°C (80.6°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Upper/lower flammability or explosive limits	
Upper:	: Not determined.
Lower:	: Not determined.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 0.955
Density	: 7.97 lbs/gal 0.955 g/cm³
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): 0.42 cm²/s (42 cSt)
Weight Volatiles	: 67% (w/w)
Volume Volatiles	: 72.21 %(v/v)
Weight Solids	: 33.00 %(w/w)
Volume Solids	: 27.79 %(v/v)
Regulatory VOC	: 5.3 lbs/gal 640 g/l minus water and exempt solvents
VOC Actual	: 5.3 lbs/gal 640 g/l

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-butyl acetate	LC50 Inhalation Vapor	Rat	390 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
	LD50 Dermal	Rabbit	>5 g/kg	-
2-methoxy-1-methylethyl acetate	LD50 Oral	Rat	8532 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
xylene				
ethylbenzene				

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Hexamethylene diisocyanate, oligomers	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
xylene	Skin - Mild irritant	Rat	-	8 hours 60 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 microliters	-
ethylbenzene	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 Percent	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
		Rabbit	-	24 hours 15 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
xylene	-	3	-
ethylbenzene	-	2B	-

Reproductive toxicity

Section 11. Toxicological information

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
n-butyl acetate	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Skin contact : Causes skin irritation.
Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:

nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:

irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General

: No known significant effects or critical hazards.

Carcinogenicity

: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity

: No known significant effects or critical hazards.

Teratogenicity

: No known significant effects or critical hazards.

Developmental effects

: No known significant effects or critical hazards.

Fertility effects

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	50553.9 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
n-butyl acetate xylene ethylbenzene	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 62000 µg/l	Fish - Danio rerio	96 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2930 to 4400 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 40000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
n-butyl acetate	2.3	-	low
Hexamethylene diisocyanate, oligomers	5.54	367.7	low
2-methoxy-1-methylethyl acetate	1.2	-	low
xylene	3.12	8.1 to 25.9	low
ethylbenzene	3.6	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	xylene	1330-20-7	1 - 5
	ethylbenzene	100-41-4	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethylbenzene toluene	Yes. No.	No. Yes.	No. No.	No. 7000 µg/day (ingestion)

Section 15. Regulatory information

International lists

National inventory

- Australia : All components are listed or exempted.
- Canada : All components are listed or exempted.
- China : All components are listed or exempted.
- Europe : All components are listed or exempted.
- Japan : Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.
- Malaysia : All components are listed or exempted.
- New Zealand : All components are listed or exempted.
- Philippines : All components are listed or exempted.
- Republic of Korea : All components are listed or exempted.
- Taiwan : All components are listed or exempted.
- Turkey : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Section 16. Other information

History

Date of issue/Date of revision : 5 October 2020

Version : 5

MSDS # : A36869 0015 0004630C00

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

High Solids Epoxy Primer 10P20-13

Section 1. Identification

GHS product identifier : High Solids Epoxy Primer 10P20-13

Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Uses advised against

Product use :

Manufacturer : Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.service@akzonobel.com
Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
+1 (800) 618-1010

Emergency telephone number (with hours of operation) : CHEMTREC +1 (800) 424-9300 (Inside the US)
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 27.8%

GHS label elements

Hazard pictograms :   

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause cancer.
Causes damage to organs through prolonged or repeated exposure. (lungs)

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection.
Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Keep container tightly closed. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
strontium chromate	≥25 - ≤50	7789-06-2
crystalline silica, respirable powder	≥10 - ≤25	14808-60-7
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, homopolymer	≥10 - ≤25	25085-99-8
Methyl isobutyl ketone	≤10	108-10-1
heptan-2-one	≤10	110-43-0
titanium dioxide	≤10	13463-67-7
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	≤4.3	25068-38-6
xylene	≤3	1330-20-7
2,2-bis(acryloyloxymethyl)butyl acrylate	≤2.3	15625-89-5
barium chromate	≤1	10294-40-3
ethylbenzene	<1	100-41-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Section 4. First aid measures

Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: Do not use water jet.

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical

: Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides
- Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders

: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use

Section 7. Handling and storage

explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
strontium chromate	ACGIH TLV (United States, 3/2016). TWA: 0.0005 mg/m³, (measured as Cr) 8 hours. OSHA PEL Z2 (United States, 2/2013). CEIL: 1 mg/10m³ OSHA PEL (United States, 6/2016). TWA: 0.005 mg/m³, (as Cr) 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.0002 mg/m³, (as CR) 8 hours. OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO₂+5) 8 hours. Form: Respirable TWA: 10 mg/m³ / (%SiO₂+2) 8 hours. Form: Respirable OSHA PEL (United States, 6/2016). TWA: 50 µg/m³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2016). TWA: 0.025 mg/m³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m³ 10 hours. Form: respirable dust None.
Oxirane, 2,2'-[1-methylethylene]bis(4,1-phenyleneoxymethylene)]bis-, homopolymer Methyl isobutyl ketone	ACGIH TLV (United States, 3/2018). STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2016). STEL: 300 mg/m³ 15 minutes. STEL: 75 ppm 15 minutes. TWA: 205 mg/m³ 10 hours. TWA: 50 ppm 10 hours. OSHA PEL (United States, 5/2018). TWA: 410 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

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Section 8. Exposure controls/personal protection

heptan-2-one

ACGIH TLV (United States, 3/2016).
TWA: 50 ppm 8 hours.
TWA: 233 mg/m³ 8 hours.
NIOSH REL (United States, 10/2016).
TWA: 100 ppm 10 hours.
TWA: 465 mg/m³ 10 hours.
OSHA PEL (United States, 6/2016).
TWA: 100 ppm 8 hours.
TWA: 465 mg/m³ 8 hours.
OSHA PEL (United States, 6/2016).
TWA: 15 mg/m³ 8 hours. Form: Total dust
ACGIH TLV (United States, 3/2016).
TWA: 10 mg/m³ 8 hours.

titanium dioxide

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin
xylene

None.
ACGIH TLV (United States, 3/2016).
STEL: 651 mg/m³ 15 minutes.
STEL: 150 ppm 15 minutes.
TWA: 434 mg/m³ 8 hours.
TWA: 100 ppm 8 hours.
OSHA PEL (United States, 6/2016).
TWA: 435 mg/m³ 8 hours.
TWA: 100 ppm 8 hours.

2,2-bis(acryloyloxymethyl)butyl acrylate

AIHA WEEL (United States, 10/2011).
Absorbed through skin.

barium chromate

TWA: 1 mg/m³ 8 hours.
OSHA PEL Z2 (United States, 2/2013).
CEIL: 1 mg/10m³
ACGIH TLV (United States, 3/2016).
TWA: 0.01 mg/m³, (measured as Cr) 8 hours.
Form: Insoluble

ethylbenzene

OSHA PEL (United States, 6/2016).
TWA: 0.005 mg/m³, (as Cr) 8 hours.
NIOSH REL (United States, 10/2016).
TWA: 0.0002 mg/m³, (as CR) 8 hours.
ACGIH TLV (United States, 3/2017).
TWA: 20 ppm 8 hours.
NIOSH REL (United States, 10/2016).
STEL: 545 mg/m³ 15 minutes.
STEL: 125 ppm 15 minutes.
TWA: 435 mg/m³ 10 hours.
TWA: 100 ppm 10 hours.
OSHA PEL (United States, 6/2016).
TWA: 435 mg/m³ 8 hours.
TWA: 100 ppm 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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Section 8. Exposure controls/personal protection

- Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
 Appropriate techniques should be used to remove potentially contaminated clothing.
 Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eyeface protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

- : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state

: Liquid.
- Color

: Yellow.
- Odor

: Solvent.
- Odor threshold

: Not available.
- pH

: Not available.
- Melting/freezing point

: Not available.
- Boiling point

: 117°C (242.6°F)
- boiling range

: Not available.
- Flash point

: Closed cup: 16°C (60.8°F)
- Evaporation rate

: Not available.
- Flammability (solid, gas)

: Not available.
- Upper/lower flammability or explosive limits

Upper: : Not determined.

Lower: : Not determined.

Vapor pressure

Vapor density

Relative density

Density

: 13.59 lbs/gal 1.629 g/cm³

Solubility

Solubility in water

: Not available.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	: Not available.	
Auto-ignition temperature	: Not available.	
Decomposition temperature	: Not available.	
Viscosity	: Kinematic (room temperature): 2.15 cm ² /s (215 cSt)	
Weight Volatiles	: 19.14% (w/w)	
Volume Volatiles	: 38.25 % (v/v)	
Weight Solids	: 80.86 % (w/w)	
Volume Solids	: 61.75 % (v/v)	
Regulatory VOC	2.6 lbs/gal	312 g/l minus water and exempt solvents
VOC Actual	2.6 lbs/gal	312 g/l

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
strontium chromate Methyl isobutyl ketone heptan-2-one xylene 2,2-bis(acryloyloxymethyl) butyl acrylate ethylbenzene	LD50 Oral	Rat	3118 mg/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	5170 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Methyl isobutyl ketone	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Eyes - Severe irritant	Rabbit	-	40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
heptan-2-one	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 milligrams	-

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Section 11. Toxicological information

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Eyes - Mild irritant	Rabbit	-	Micrograms Intermittent 100	-
	Skin - Moderate irritant	Rabbit	-	milligrams 24 hours 500	-
xylene	Skin - Severe irritant	Rabbit	-	microliters 24 hours 2	-
	Eyes - Mild irritant	Rabbit	-	milligrams 87	-
	Eyes - Severe irritant	Rabbit	-	milligrams 24 hours 5	-
	Skin - Mild irritant	Rat	-	milligrams 8 hours 60	-
	Skin - Moderate irritant	Rabbit	-	microliters 24 hours 500	-
2,2-bis(acryloyloxymethyl) butyl acrylate	Skin - Moderate irritant	Rabbit	-	milligrams 100 Percent	-
	Eyes - Moderate irritant	Rabbit	-	100	-
ethylbenzene	Skin - Moderate irritant	Rabbit	-	milligrams 24 hours 500	-
	Eyes - Severe irritant	Rabbit	-	milligrams 500	-
	Skin - Mild irritant	Rabbit	-	milligrams 24 hours 15	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
strontium chromate	+	1	Known to be a human carcinogen.
crystalline silica, respirable powder	-	1	Known to be a human carcinogen.
Methyl isobutyl ketone	-	2B	-
titanium dioxide	-	2B	-
xylene	-	3	-
barium chromate	+	1	Known to be a human carcinogen.
ethylbenzene	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	Inhalation	lungs

Aspiration hazard

Section 11. Toxicological information

Name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact : Causes serious eye irritation.
- Inhalation : No known significant effects or critical hazards.
- Skin contact : No known significant effects or critical hazards.
- Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General : Causes damage to organs through prolonged or repeated exposure.
- Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity : No known significant effects or critical hazards.
- Teratogenicity : No known significant effects or critical hazards.
- Developmental effects : No known significant effects or critical hazards.
- Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	3860.9 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Methyl isobutyl ketone	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
heptan-2-one	Acute LC50 131000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
ethylbenzene	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2930 to 4400 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 40000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Methyl isobutyl ketone heptan-2-one reaction product: bisphenol-A- (epichlorohydrin); epoxy resin xylene 2,2-bis(acryloyloxyethyl) butyl acrylate ethylbenzene	1.9	-	low
	2.26	-	low
	2.64 to 3.78	31	low
	3.12	8.1 to 25.9	low
	0.67	-	low
	3.6	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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Section 14. Transport information

The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II
Environmental hazards	No.	Yes.	No.	Marine Pollutant (s): strontium chromate, Oxirane, 2,2'-[(1-methylethylidene) bis(4, 1-phenyleneoxymethylene)] bis-, homopolymer	No.

Additional information

DOT Classification

: **Reportable quantity**

33.82 lbs / 15.355 kg [2.49 gal / 9.4257 L]

Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

TDG Classification

Mexico Classification

IMDG

IATA

- : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user

: **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available.

to Annex II of MARPOL and
the IBC Code

Section 15. Regulatory information

U.S. Federal regulations

: TSCA 5(a)2 final significant new use rules: No products found.

TSCA 5(e) substance consent order: No products found.

TSCA 12(b) annual export notification: strontium chromate

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112

(b) Hazardous Air
Pollutants (HAPs)

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Section 15. Regulatory information

- Clean Air Act Section 602 :
 Class I Substances
- Clean Air Act Section 602 :
 Class II Substances
- DEA List I Chemicals :
 (Precursor Chemicals)
- DEA List II Chemicals :
 (Essential Chemicals)

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
No products were found.						

SARA 311/312

Classification :

Composition/information on ingredients

No products were found.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	strontium chromate	7789-06-2	≥25 - ≤50
	Methyl isobutyl ketone	108-10-1	≤10
	xylene	1330-20-7	≤3
	barium chromate	10294-40-3	≤1
	ethylbenzene	100-41-4	<1
	lead	7439-92-1	<0.1
Supplier notification	No products were found.		

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

: The following components are listed: SILICA, CRYSTALLINE, QUARTZ; METHYL ISOBUTYL KETONE; 4-METHYL-2-PENTANONE; STRONTIUM CHROMATE; METHYL (N-AMYL) KETONE; TITANIUM DIOXIDE; TIN DIOXIDE DUST; XYLENE; DIMETHYLBENZENE

New York

: The following components are listed: Methyl isobutyl ketone; Hexone; Strontium chromate; Xylene mixed; Ethylbenzene

New Jersey

: The following components are listed: SILICA, QUARTZ; QUARTZ (SiO2); METHYL ISOBUTYL KETONE; 2-PENTANONE, 4-METHYL-; STRONTIUM CHROMATE; CHROMIC ACID (H2CrO4), STRONTIUM SALT (1:1); METHYL n-AMYL KETONE; 2-HEPTANONE; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO2); XYLENES; BENZENE, DIMETHYL-; ETHYL BENZENE; BENZENE, ETHYL-

Pennsylvania

: The following components are listed: QUARTZ DUST; QUARTZ; 2-PENTANONE, 4-METHYL-; CHROMIC ACID, STRONTIUM SALT (1:1); 2-HEPTANONE; TITANIUM OXIDE; BENZENE, DIMETHYL-; BENZENE, ETHYL-

California Prop. 65

Section 15. Regulatory information

Ingredient name	No significant risk level	Maximum acceptable dosage level
strontium chromate	No.	No.
crystalline silica, respirable powder	No.	No.
Methyl isobutyl ketone	No.	No.
titanium dioxide	No.	No.
barium chromate	No.	No.
ethylbenzene	No.	No.
toluene	No.	No.
Formaldehyde, solution	No.	7000 µg/day (ingestion)
lead	No.	No.
phenyl glycidyl ether	No.	Yes.
Cadmium (Non-pyrophoric)	Yes.	No.
1-chloro-2,3-epoxypropane	0.05 µg/day (inhalation)	4.1 µg/day (ingestion)
	Yes.	No.

Inventory list

Australia	: All components are listed or exempted.
Canada	: At least one component is not listed in DSL but all such components are listed in NDSL.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (ENCS) : At least one component is not listed. Japan inventory (ISHL) : At least one component is not listed.
Malaysia	: At least one component is not listed.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	:
Turkey	: At least one component is not listed.
Viet Nam	:

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	
Flammability	
Physical hazards	

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision	: 7/1/2022	Version	: 1
Date of previous issue	: No previous validation		14/15

Section 16. Other information

Date of printing	: 1 July 2022
Date of issue/ Date of revision	: 1 July 2022
Date of previous issue	: No previous validation
Version	: 1
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

 **Indicates information that has changed from previously issued version.**

Notice to reader

FOR PROFESSIONAL USE ONLY

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws. Any person using this product must determine for themselves, by preliminary tests or otherwise, the suitability of this product for their purposes. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Safety Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. The application, use and processing of AkzoNobel's products and the products manufactured by Buyer on the basis of AkzoNobel's technical advice are beyond AkzoNobel's control and, therefore, entirely Buyer's own responsibility. AkzoNobel makes no warranty as to accuracy and/ or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

Date of issue/Date of revision

: 7/1/2022

Version : 1

Date of previous issue

: No previous validation

15/15

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name : LEH 640 BEIGE MAT 1799 P.A. / 4.2 KG
Identification of the article : 040671505R
Company : SOFICOR S.A.
RUE DES CHAMPS
62161 MAROEUIL
Telephone : +33321505800
Telefax : +33321558594

2. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

industrial paint

Hazardous components

Chemical Name	CAS-No.	Symbol(s)	R-phrased(s)	Concentration [%]
Polyamideamine		Xi	R41	>= 10,00 - < 12,50
trizinc bis(orthophosphate)	7779-90-0	N	R50/53	>= 7,00 - < 10,00
Stoddard solvent; Low boiling point naphtha - unspecified	8052-41-3	Xn, N	R65 ; R10; R51/53	>= 0,10 - < 0,25

3. HAZARDS IDENTIFICATION**Risk advice to man and the environment**

Risk of serious damage to eyes.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.

Inhalation : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.

Skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.

Eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

Ingestion : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Handling**

- Advice on safe handling : Avoid formation of aerosol.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion

- : Normal measures for preventive fire protection.

Storage

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Further information on storage conditions

- : Protect against freezing.

Other data

- : No decomposition if stored and applied as directed.

SAFETY DATA SHEET according to EC directive 93/112/EC		Mäder 040671505R Print Date 01.02.2007
Revision Date 26.09.2006		
LEH 640 BEIGE MAT 1799 P.A. / 4.2 KG		
8. EXPOSURE CONTROLS / PERSONAL PROTECTION		
Personal protective equipment		
Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
Hand protection	:	Polyvinyl alcohol or nitrile- butyl-rubber gloves The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Before removing gloves clean them with soap and water.
Eye protection	:	Eye wash bottle with pure water tightly fitting safety goggles
Skin and body protection	:	impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
9. PHYSICAL AND CHEMICAL PROPERTIES		
Safety data		
pH	:	no data available
Flash point	:	Note: does not flash
Flammability (solid, gas)	:	Not classified as supporting combustion according to the transport regulations.
Density	:	> 1 g/cm3
Water solubility	:	Note: completely miscible
10. STABILITY AND REACTIVITY		
Thermal decomposition	:	Note: no data available
11. TOXICOLOGICAL INFORMATION		
Skin irritation	:	Remarks:May cause skin irritation in susceptible persons.
Eye irritation	:	Remarks: May cause irreversible eye damage.
Sensitization	:	Remarks: no data available
		3/5

SAFETY DATA SHEET according to EC directive 93/112/EC			
LEH 640 BEIGE MAT 1799 P.A. / 4.2 KG		040671505R	
Revision Date 26.09.2006	Print Date 01.02.2007		
Further information	: The product itself has not been tested.		
12. ECOLOGICAL INFORMATION			
There is no data available for this product.			
Any flow in the sewers or the rivers must be avoided			
Ecotoxicity effects			
Further information on ecology			
Additional ecological information	: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.		
13. DISPOSAL CONSIDERATIONS			
Product	: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Offer surplus and non-recyclable solutions to a licensed disposal company.		
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.		
14. TRANSPORT INFORMATION			
ADR Not dangerous goods			
IATA Not dangerous goods			
IMDG Not dangerous goods			
Not classified as dangerous in the meaning of transport regulations.			
15. REGULATORY INFORMATION			
Labelling according to EC Directives Symbol(s)	1999/45/EC Irritant Dangerous for the environment		
R-phrases(s)	: R41 R51/53	Risk of serious damage to eyes. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
4/5			

S-phrases(s)	: S23 S26	Do not breathe spray. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S39 S51 S57	Wear eye/face protection. Use only in well-ventilated areas. Use appropriate container to avoid environmental contamination.
	S60	This material and its container must be disposed of as hazardous waste.

Nomenclature for classified sites (Law 76/663 as modified)

Nomenclature for classified sites (Law 76/663 as modified) : Exempt

Occupational Illnesses (R-463-3, France)

Table: : 84 Health effects caused by organic solvents in occupational applications.

16. OTHER INFORMATION

Further information

R-phrases(s) Text of R phrases mentioned in Section 2:

R10	Flammable.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name : LEH 640 PARTIE B
Identification of the article : 046061005R
Company : SOFICOR S.A.
RUE DES CHAMPS
62161 MAROEUIL
Telephone : +33321505800
Telefax : +33321558594

2. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

industrial paint

Hazardous components

Chemical Name	CAS-No.	Symbol(s)	R-phrased(s)	Concentration [%]
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	25068-38-6	Xi, N	R36/38 ; R43; R51/53	>= 50,00 - <= 100,00
bisphenol-F-epoxy resin	9003-36-5	Xi, N	R43 ; R36/38; R51/53	>= 12,50 - < 20,00

3. HAZARDS IDENTIFICATION**Risk advice to man and the environment**

Irritating to eyes and skin.

May cause sensitization by skin contact.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.

Inhalation : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.

Skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

Eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

Ingestion : Clean mouth with water and drink afterwards plenty of water.

SAFETY DATA SHEET according to EC directive 93/112/EC		 Mäder
LEH 640 PARTIE B		046061005R
Revision Date 07.06.2006	Print Date 01.02.2007	
Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.		
5. FIRE-FIGHTING MEASURES		
Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
6. ACCIDENTAL RELEASE MEASURES		
Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.
7. HANDLING AND STORAGE		
Handling		
Advice on safe handling	:	Avoid formation of aerosol. Avoid contact with skin and eyes. For personal protection see section 8. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Storage		
Requirements for storage	:	Keep container tightly closed in a dry and well-ventilated place.
2/6		

SAFETY DATA SHEET according to EC directive 93/112/EC		Mäder 046061005R
Revision Date 07.06.2006	Print Date 01.02.2007	
areas and containers	Containers which are opened must be carefully resealed and kept upright to prevent leakage.	
Further information on storage conditions	:	Protect against freezing.
Other data	:	No decomposition if stored and applied as directed.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION		
Personal protective equipment		
Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
Hand protection	:	Polyvinyl alcohol or nitrile- butyl-rubber gloves The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Before removing gloves clean them with soap and water.
Eye protection	:	Eye wash bottle with pure water tightly fitting safety goggles
Skin and body protection	:	impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
9. PHYSICAL AND CHEMICAL PROPERTIES		
Safety data		
pH	:	no data available
Flash point	:	Note: does not flash
Flammability (solid, gas)	:	Not classified as supporting combustion according to the transport regulations.
Density	:	> 1 g/cm3
Water solubility	:	Note: completely miscible
10. STABILITY AND REACTIVITY		
Thermal decomposition	:	Note: no data available
3/6		

SAFETY DATA SHEET according to EC directive 93/112/EC		 Mäder
LEH 640 PARTIE B		046061005R
Revision Date 07.06.2006		Print Date 01.02.2007
11. TOXICOLOGICAL INFORMATION		
Skin irritation	:	Remarks:May cause skin irritation in susceptible persons.
Eye irritation	:	Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.
Sensitization	:	Remarks: Causes sensitization.
Further information	:	The product itself has not been tested.
12. ECOLOGICAL INFORMATION		
There is no data available for this product.		
Any flow in the sewers or the rivers must be avoided		
Ecotoxicity effects		
Further information on ecology		
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
13. DISPOSAL CONSIDERATIONS		
Product	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.
14. TRANSPORT INFORMATION		
ADR		
UN Number	:	3082
Description of the goods	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. 0
Class	:	9
Packaging group	:	III
Classification Code	:	M6
Risk No.	:	90
ADR/RID-Labels	:	9
IATA		
UN Number	:	3082
Description of the goods	:	Environmentally hazardous substance, liquid, n.o.s. 0
		4/6

Class : 9
Packaging group : III
ADR/RID-Labels : 9
Packing instruction (cargo aircraft) : 914

IMDG

Substance No. : UN 3082
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

()

Class : 9
Packaging group : III
ADR/RID-Labels : 9
EmS Number : NONE
Marine pollutant : no

15. REGULATORY INFORMATIONLabelling according to EC Directives **1999/45/EC**

Hazardous components which must be listed on the label:

- reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)
-

Symbol(s) : Xi
N
Irritant
Dangerous for the environment

R-phrases) : R36/38
R43
R51/53
Irritating to eyes and skin.
May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases(s) : S23
S24
S26
S37
S51
S60
Do not breathe spray.
Avoid contact with skin.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable gloves.
Use only in well-ventilated areas.
This material and its container must be disposed of as hazardous waste.

Special labelling of certain preparations : Contains epoxy constituents. See information supplied by the manufacturer.

Nomenclature for classified sites (Law 76/663 as modified)

Nomenclature for classified sites (Law 76/663 as modified) : Exempt

Occupational Illnesses (R-463-3, France)

: Exempt

16. OTHER INFORMATION

Further information

R-phrases(s) Text of R phrases mentioned in Section 2:

- | | |
|--------|---|
| R36/38 | Irritating to eyes and skin. |
| R43 | May cause sensitization by skin contact. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Date of issue/Date of revision 8 February 2015
Version 2

Section 1. Identification

Product name : PU66 8H PU Topcoat Gloss Red 442 5Lt
Product code : 54404502-KAH0
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications, Used by spraying.
Use of the substance/ mixture : Coating.
Uses advised against : Not applicable.

Supplier : PPG Aerospace PRC-DeSoto

12780 San Fernando Road
Sylmar, CA 91342

Phone: 818 362 6711

Emergency telephone number

: (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

: FLAMMABLE LIQUIDS - Category 3
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 40.5%

GHS label elements

Hazard pictograms



Signal word

: Warning

Product name PU66 8H PU Topcoat Gloss Red 442 5Lt

Section 2. Hazards identification

Hazard statements

- : Flammable liquid and vapor.
- Causes serious eye irritation.
- Suspected of causing cancer.
- May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Do not breathe vapor. Wash hands thoroughly after handling.

Response

- : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

- : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal

- : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

- : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified

- : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture

- : Mixture

Product name

- : PU66 8H PU Topcoat Gloss Red 442 5Lt

Ingredient name	%	CAS number
 2-methoxy-1-methylethyl acetate	7 - 13	108-65-6
n-butyl acetate	7 - 13	123-86-4
xylene	5 - 10	1330-20-7
butanone	3 - 7	78-93-3
4-methylpentan-2-one	1 - 5	108-10-1
titanium dioxide	1 - 5	13463-67-7
ethylbenzene	1 - 5	100-41-4
ethyl acetate	0.5 - 1.5	141-78-6

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 3. Composition/information on ingredients

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:

pain or irritation
watering
redness

- Inhalation** : No specific data.

- Skin contact** : Adverse symptoms may include the following:

irritation
dryness
cracking

- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

- Specific treatments** : No specific treatment.

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical

: Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
metal oxide/oxides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill

- : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

- : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Special precautions

Advice on general occupational hygiene

- Conditions for safe storage, including any incompatibilities**: Storage temperature: 5 to 35°C (41 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
 2-methoxy-1-methylethyl acetate	IPEL (PPG, 4/2009). TWA: 50 ppm
n-butyl acetate	ACGIH TLV (United States, 4/2014). STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.
	OSHA PEL (United States, 2/2013). TWA: 710 mg/m ³ 8 hours.
xylene	TWA: 150 ppm 8 hours. ACGIH TLV (United States, 4/2014). STEL: 651 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
	OSHA PEL (United States, 2/2013). TWA: 435 mg/m ³ 8 hours.
butanone	TWA: 100 ppm 8 hours. ACGIH TLV (United States, 4/2014). STEL: 885 mg/m ³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m ³ 8 hours. TWA: 200 ppm 8 hours.
	OSHA PEL (United States, 2/2013). TWA: 590 mg/m ³ 8 hours.
4-methylpentan-2-one	TWA: 200 ppm 8 hours. ACGIH TLV (United States, 4/2014). STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours.
	OSHA PEL (United States, 2/2013). TWA: 410 mg/m ³ 8 hours.
titanium dioxide	TWA: 100 ppm 8 hours. OSHA PEL (United States, 2/2013). TWA: 15 mg/m ³ 8 hours. Form: Total dust
	ACGIH TLV (United States, 4/2014). TWA: 10 mg/m ³ 8 hours.
ethylbenzene	ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.
	OSHA PEL (United States, 2/2013). TWA: 435 mg/m ³ 8 hours.
ethyl acetate	TWA: 100 ppm 8 hours. ACGIH TLV (United States, 4/2014). TWA: 1440 mg/m ³ 8 hours.
	TWA: 400 ppm 8 hours.
	OSHA PEL (United States, 2/2013). TWA: 1400 mg/m ³ 8 hours.
	TWA: 400 ppm 8 hours.

Key to abbreviations

A = Acceptable Maximum Peak

S = Potential skin absorption

Section 8. Exposure controls/personal protection

ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Product code 54404502-KAH0

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Section 8. Exposure controls/personal protection

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Colorless.
Odor : Characteristic.
Odor threshold : Not available.
pH : Not available.
Melting point : Not available.
Boiling point : >37.78°C (>100°F)
Flash point : Closed cup: 26°C (78.8°F)
Material supports combustion. : Yes.

Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Flammability (solid, gas) : Not available.
Lower and upper explosive (flammable) limits : Lower: 1%
Upper: 10%
Evaporation rate : Not available.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : 1.07
Density (lbs / gal) : 8.93
Bulk Density (g/cm³) : 0
Solubility : Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water : Not available.
Viscosity : Kinematic (40°C (104 °F)): >0.21 cm²/s (>21 cSt)
VOC : Not available.
% Solid. (w/w) : 54.96088

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.
Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions:
oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-methoxy-1-methylethyl acetate n-butyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	8532 mg/kg	-
	LC50 Inhalation Vapor	Rat	>21.1 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
xylene	LD50 Oral	Rat	10.768 g/kg	-
	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
butanone	LC50 Inhalation Vapor	Rat	11243 ppm	4 hours
	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
	LC50 Inhalation Vapor	Rat	32772 mg/m ³	4 hours
	LD50 Oral	Rat	2.08 g/kg	-
4-methylpentan-2-one	LD50 Oral	Rat	>10 g/kg	-
	LC50 Inhalation Vapor	Rat	4000 ppm	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	>5 g/kg	-
titanium dioxide ethylbenzene	LD50 Oral	Rat	5620 mg/kg	-
ethyl acetate				

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin

: There are no data available on the mixture itself.

Eyes

: There are no data available on the mixture itself.

Respiratory

: There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin

: There are no data available on the mixture itself.

Respiratory

: There are no data available on the mixture itself.

Section 11. Toxicological information

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/Ingredient name	OSHA	IARC	NTP
Xylene	-	3	-
4-methylpentan-2-one	-	2B	-
titanium dioxide	-	2B	-
ethylbenzene	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category
n-butyl acetate	Category 3
butanone	Category 3
4-methylpentan-2-one	Category 3
ethyl acetate	Category 3

Specific target organ toxicity (repeated exposure)

Name	Category
ethylbenzene	Category 2

Target organs : Contains material which causes damage to the following organs: brain.
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, peripheral nervous system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), ears, eye, lens or cornea.

Aspiration hazard

Name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Defatting to the skin. May cause skin dryness and irritation.
Ingestion : No known significant effects or critical hazards.

Section 11. Toxicological information

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:

pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:

irritation
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Oral	
Dermal	9336 mg/kg
Inhalation (gases)	7230.4 mg/kg
Inhalation (vapors)	22403.4 ppm
Inhalation (dusts and mists)	43.94 mg/l
	5.991 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-methoxy-1-methylethyl acetate titanium dioxide ethylbenzene	Acute LC50 161 mg/l Fresh water	Fish	96 hours
	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 150 to 200 mg/l Fresh water	Fish - Lepomis macrochirus -	96 hours
		Young of the year	

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene ethylbenzene	-	-	Readily
	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2-methoxy-1-methylethyl acetate n-butyl acetate xylene butanone 4-methylpentan-2-one ethylbenzene ethyl acetate	0.56	-	low
	1.78	-	low
	3.16	7.4 to 18.5	low
	0.29	-	low
	1.31	-	low
	3.15	79.43	low
	0.73	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	1105.6	Not applicable.	Not applicable.
RQ substances	(xylene, n-butyl acetate)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States inventory (TSCA 8b) : At least one component is not listed.

Australia inventory (AICS) : All components are listed or exempted.

Canada inventory (DSL) : Not determined.

China inventory (IECSC) : All components are listed or exempted.

Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.

Japan inventory (ENCS) : All components are listed or exempted.

Korea inventory (KECI) : All components are listed or exempted.

New Zealand (NZIoC) : Not determined.

Philippines inventory (PICCS) : Not determined.

United States

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification

: Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
 2-methoxy-1-methylethyl acetate	Yes.	No.	No.	Yes.	No.
n-butyl acetate	Yes.	No.	No.	Yes.	No.
xylene	Yes.	No.	No.	Yes.	No.
butanone	Yes.	No.	No.	Yes.	No.
4-methylpentan-2-one	Yes.	No.	No.	Yes.	Yes.
titanium dioxide	No.	No.	No.	No.	Yes.
ethylbenzene	Yes.	No.	No.	Yes.	Yes.
ethyl acetate	Yes.	No.	No.	Yes.	No.

SARA 313

Chemical name

:  Xylene
4-methylpentan-2-one
ethylbenzene

Supplier notification

CAS number
1330-20-7
108-10-1
100-41-4

Concentration
5 - 10
1 - 5
1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Product code 54404502-KAH0

Date of issue 8 February 2015 **Version** 2

Product name PU66 8H PU Topcoat Gloss Red 442 5Lt

Section 15. Regulatory information

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 3 **Instability** : 0

Date of previous issue : 9/15/2014.

Organization that prepared the MSDS : EHS

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Thinner C25/90S

Section 1. Identification

GHS product identifier : **Thinner C25/90S**
Other means of identification : 980022 000000 TRA THIN C25/90S

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer : Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.
service@akzonobel.com

Canadian Supplier : Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
+1 (800) 618-1010

Emergency telephone number : CHEMTREC +1 (800) 424-9300 (Inside the US)
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Date of issue / Date of revision : 22 June 2023
Safety Data Sheet Version : 6.08
Date of printing : 22 June 2023

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2

Section 2. Hazards identification

GHS label elements

Hazard pictograms



Signal word
Hazard statements

- : Danger
: Highly flammable liquid and vapor.
: Causes serious eye irritation.
: Causes skin irritation.
: Suspected of causing cancer.

Precautionary statements

Prevention

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection.
: Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Keep container tightly closed. Wash hands thoroughly after handling.

Response

- : IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. IF skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

- : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal

- : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified

- : None known.

Section 3. Composition/information on ingredients

Substance/mixture

- : Mixture

Ingredient name	%	CAS number
butanone	35 - 40	78-93-3
2-methoxy-1-methylethyl acetate	35 - 40	108-65-6
Isopropyl alcohol	15 - 20	67-63-0
Methyl isobutyl ketone	5 - 10	108-10-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical

: Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
butanone	ACGIH TLV (United States, 3/2016). STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours. NIOSH REL (United States, 10/2016). STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes.

Section 8. Exposure controls/personal protection

2-methoxy-1-methylethyl acetate	TWA: 590 mg/m³ 10 hours. TWA: 200 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
Isopropyl alcohol	AIHA WEEL (United States, 10/2011). TWA: 50 ppm 8 hours. ACGIH TLV (United States, 3/2016). STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours. NIOSH REL (United States, 10/2016). STEL: 1225 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 980 mg/m³ 10 hours. TWA: 400 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 980 mg/m³ 8 hours. TWA: 400 ppm 8 hours.
Methyl isobutyl ketone	ACGIH TLV (United States, 3/2018). STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2016). STEL: 300 mg/m³ 15 minutes. STEL: 75 ppm 15 minutes. TWA: 205 mg/m³ 10 hours. TWA: 50 ppm 10 hours. OSHA PEL (United States, 5/2018). TWA: 410 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

- : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Colorless.

: Typical.

: Not available.

: Not available.

: Not available.

: 80°C (176°F)

: Not available.

: Closed cup: 2°C (35.6°F)

: Not available.

: Not available.

Upper/lower flammability or explosive limits

Upper: : Not determined.

Lower: : Not determined.

: Not available.

: Not available.

: 0.85

: 7.09 lbs/gal 0.85 g/cm³

: Not available.

Section 9. Physical and chemical properties

- Solubility in water : Not available.
- Partition coefficient: n-octanol/water : Not available.
- Auto-ignition temperature : Not available.
- Decomposition temperature : Not available.
- Viscosity : Kinematic (room temperature): 0.47 cm²/s (47 cSt)
Kinematic (40°C (104°F)): 0.04 cm²/s (4 cSt)
- Weight Volatiles : 100% (w/w)
- Volume Volatiles : 100.00 %(v/v)
- Weight Solids : 0.00 %(w/w)
- Volume Solids : 0 %(v/v)
- Regulatory VOC : 7.1 lbs/gal 850 g/l minus water and exempt solvents
- VOC Actual : 7.1 lbs/gal 850 g/l

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
butanone	LD50 Dermal LD50 Oral	Rabbit Rat	6480 mg/kg 2737 mg/kg	- -
2-methoxy-1-methylethyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
Isopropyl alcohol	LD50 Oral LD50 Dermal	Rat Rabbit	8532 mg/kg 12800 mg/kg	- -
Methyl isobutyl ketone	LD50 Oral LD50 Oral	Rat Rat	5000 mg/kg 2080 mg/kg	- -

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
butanone	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
Isopropyl alcohol	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
Methyl isobutyl ketone	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Eyes - Severe irritant	Rabbit	-	40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Isopropyl alcohol	-	3	-
Methyl isobutyl ketone	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 11. Toxicological information

- Inhalation** : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Long term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	4625.8 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
butanone	Acute EC50 >500000 µg/l Marine water Acute EC50 5091000 to 6440000 µg/l Fresh water	Algae - Skeletonema costatum Daphnia - Daphnia magna - Larvae	96 hours 48 hours
Isopropyl alcohol	Acute LC50 5600 ppm Fresh water Acute EC50 10100 mg/l Fresh water Acute LC50 1400000 to 1950000 µg/l Marine water	Fish - Gambusia affinis - Adult Daphnia - Daphnia magna Crustaceans - Crangon crangon	96 hours 48 hours 48 hours
Methyl isobutyl ketone	Acute LC50 4200 mg/l Fresh water Acute LC50 505000 µg/l Fresh water Chronic NOEC 78 mg/l Fresh water Chronic NOEC 168 mg/l Fresh water	Fish - Rasbora heteromorpha Fish - Pimephales promelas Daphnia - Daphnia magna Fish - Pimephales promelas - Embryo	96 hours 96 hours 21 days 33 days

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
butanone	0.3	-	low
2-methoxy-1-methylethyl acetate	1.2	-	low
Isopropyl alcohol	0.05	-	low
Methyl isobutyl ketone	1.9	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Methyl isobutyl ketone	108-10-1	5 - 10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Section 15. Regulatory information

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Methyl isobutyl ketone	Yes.	No.	No.	No.

International lists

National inventory

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): At least one component is not listed.
- Malaysia** : All components are listed or exempted.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Turkey** : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Section 16. Other information

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 22 June 2023

Version : 6.08

MSDS # : A36900 0016

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

FINITION XS 420 DURCISSEUR - 16000000D



SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : FINITION XS 420 DURCISSEUR
Product code : 16000000D.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Solvent based 2K polyurethane paint

1.3. Details of the supplier of the safety data sheet

Registered company name : MAPAERO- Aerospace Coatings.
Address : 10 Avenue de la Rijole.09100.Pamiers.France.
Telephone : 33 (0)5 34 01 34 01. Fax : 33 (0)5 61 60 23 30.
sales.mapaero@mapaero.com
www.mapaero.com

1.4. Emergency telephone number : 33 (0)1 45 42 59 59 .

Association/Organisation : ORFILA.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Flammable liquid, Category 3 (Flam. Liq. 3, H226).

Acute inhalation toxicity, Category 4 (Acute Tox. 4, H332).

Skin sensitisation, Category 1 (Skin Sens. 1, H317).

Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H335).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Flammable (R 10).

Acute inhalation toxicity: harmful (Xn, R 20).

Irritant for the respiratory tract (Xi, R 37).

Skin sensitisation (Xi, R 43).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

Mixture for spray application.

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS07

Signal Word :

WARNING



GHS02

Product identifiers :

CAS 28182-81-2

Additional labeling :

EUH204

Hazard statements :

H226

H317

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE

Contains isocyanates. May produce an allergic reaction.

Flammable liquid and vapour.

May cause an allergic skin reaction.

- H332

Harmful if inhaled.
- H335

May cause respiratory irritation.
- Precautionary statements - Prevention :

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P280

Wear protective gloves/protective clothing/eye protection/face protection.
- Precautionary statements - Response :

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P333 + P313

If skin irritation or rash occurs: Get medical advice/attention.
- Precautionary statements - Storage :

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

The mixture does not contain any substances classified as 'Substances of Very High Concern' (SVHC) by the European Chemical s Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
INDEX: M244	GHS07			
CAS: 28182-81-2	Wng	Xn		50 <= x % < 100
REACH: 01-2119488934-20-0000	Skin Sens. 1, H317	Xn;R20		
	Acute Tox. 4, H332	Xi;R37-R43		
	STOT SE 3, H335			
HOMOPOLYMERE 1,6-DIISOCYANATE				
DHEXAMETHYLENE				
INDEX: 607-025-00-1	GHS02, GHS07	R10	[1]	2.5 <= x % < 10
CAS: 123-86-4	Wng	R66-R67		
EC: 204-658-1	Flam. Liq. 3, H226			
REACH: 01-2119485493-29	STOT SE 3, H336			
	EUH:066			
N-BUTYL ACETATE				
INDEX: 615-011-00-1	GHS06, GHS08	T	[1]	0 <= x % < 2.5
CAS: 822-06-0	Dgr	T;R23		
EC: 212-485-8	Acute Tox. 3, H331	Xn;R42/43		
REACH: 01-2119457571-37-0000	Eye Irrit. 2, H319	Xi;R36/37/38		
	STOT SE 3, H335			
	Skin Irrit. 2, H315			
HEXAMETHYLENE-DI-ISOCYANATE	Resp. Sens. 1, H334			
	Skin Sens. 1, H317			

Information on ingredients :

[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

Do not proceed with mouth-to-mouth or mouth-to-nose resuscitation.

In the event of inhalation of spray mist, seek medical attention immediately, showing the packaging or label.

In the event of splashes or contact with eyes :

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of an allergic reaction, seek medical attention.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

FINITION XS 420 DURCISSEUR - 160000000D

In the event of swallowing :

Do not give the patient anything orally.
In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.
Keep the person exposed at rest. Do not force vomiting.
Seek medical attention immediately, showing the label.
If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

5.1. Extinguishing media

In the event of fire, use specifically suitable extinguishing agents. Never use water.
Keep packages near the fire cool, to prevent pressurised containers from bursting.

Suitable methods of extinction

In the event of a fire, use :

- water with AFFF (Aqueous Film Forming Foam) additive
- foam

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water
- water jet
- sprayed water or water mist

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.
Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)

5.3. Advice for firefighters

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non fire-fighters

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

Avoid inhaling the vapors.

Avoid any contact with the skin and eyes.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

For fire-fighters

Fire-fighters will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

Contaminated areas must be cleaned very quickly.

A possible decontaminant for flammable products may be : (expressed by volume) water (45 parts), ethanol or isopropanol (50 parts), concentrated ammonia (d-0.880) (5 parts). For non-flammable products: sodium carbonate (5 parts), water (95 parts).

This residue must be stored for disposal in compliance with current regulations (see section 13).

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6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.
Individuals with a history of skin sensitisation should not, under any circumstance, handle this mixture.

7.1. Precautions for safe handling

Always wash hands after handling.
Remove and wash contaminated clothing before re-using.
Ensure that there is adequate ventilation, especially in confined areas.

Fire prevention :

Handle in well-ventilated areas.
Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.
Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.
Prevent the accumulation of electrostatic charges with connections to earth.
The mixture can become electrostatically charged : always earth during decanting operations. Wear antistatic shoes and clothing and floors should be electrically conductive.
Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.
Keep packages tightly closed and away from sources of heat, sparks and naked flames.
Do not use tools which may produce sparks. Do not smoke.
Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.
Observe precautions stated on label and also industrial safety regulations.
Never pour water into this mixture.
Avoid inhaling vapors.

Where the personnel must carry out work in a booth, whether for spraying or otherwise, the ventilation may be inadequate to control particles and solvent vapors in every case.
It is therefore recommended that personnel wear masks with a compressed air supply during spraying operations until the concentration of particles and solvent vapors has fallen below the exposure limits.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.
Provide vapor extraction at the emission source and also general ventilation of the premises.
Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.
In all cases, recover emissions at source.
Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.
Keep away from all sources of ignition - do not smoke.
Keep well away from all sources of ignition, heat and direct sunlight
Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :			
CAS	VME :	VME :	Excess Notes
822-06-0	0,005 ml/m3	0,035 mg/m3	1;=2=(I) DFG, 12
- France (INRS - ED984 :2008) :			

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CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
123-86-4	150	710	200	940	-	84
822-06-0	0.01	0.075	0.02	0.15	AR	62
- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
123-86-4	150 ppm	200 ppm	-	-	-	
822-06-0	0.02 mg/m3	0.07 mg/m3	-	-	-	

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles in accordance with standard EN166.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- PVA (Polyvinyl alcohol)
- Butyl Rubber (Isobutylene-isoprene copolymer)
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

Recommended properties :

- Impervious gloves in accordance with standard EN374

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.

Suitable type of protective boots :

ISO 2345

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing vapours.

If the ventilation is insufficient, wear appropriate breathing apparatus.

When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

Type of mask with combined filters :

Wear a half mask in accordance with standard EN140.

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- A2 (Brown)

Particle filter according to standard EN143 :

- P3 (White)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :

viscous liquid.

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Important health, safety and environmental information

pH :	Not relevant.
Boiling point/boiling range :	126 °C.
Flash Point Interval :	23°C <= PE <= 55°C
Vapour pressure (50°C) :	Below 110 kPa (1.10 bar).
Density :	> 1
Water solubility :	Insoluble.
Melting point/melting range :	-78 °C.
Self-ignition temperature :	420 °C.
Decomposition point/decomposition range :	not relevant.
<u>9.2. Other information</u>	
VOC (g/l) :	57.1

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

Keep away from oxidising agents and strongly acidic or basic materials to avoid exothermic reactions.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

The mixture can also release hydrogen cyanide, amines and alcohols.

10.4. Conditions to avoid

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.
- heating
- heat
- flames and hot surfaces
- humidity

10.5. Incompatible materials

Keep away from :

- water
- acids
- bases
- oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Exposure to vapours from solvents in the mixture in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.

Symptoms produced will include headaches, numbness, dizziness, fatigue, muscular asthenia and, in extreme cases, loss of consciousness.

Harmful by inhalation.

Repeated or prolonged contact with the mixture may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

Splashes in the eyes may cause irritation and reversible damage

Respiratory tract irritation may occur, together with symptoms such as coughing, choking and breathing difficulties.

May cause an allergic reaction by skin contact.

Based on isocyanate properties and considering the toxicological data of similar mixtures, this preparation may cause irritations and/or sensitisations of the respiratory system.

It may therefore bring about asthma, respiratory difficulties and angina pectoris.

Those susceptible may display asthmatic symptoms when exposed to atmospheres with an isocyanate concentration well below those of the VLE : exposure limits.

Repeated exposure may cause permanent respiratory problems.

11.1.1. Substances

Acute toxicity :

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
Oral route :
DL50 >= 5000 mg/kg
Species : Rat
OECD Guideline 423 (Acute Oral toxicityAcute Toxic Class Method)

Dermal route :
DL50 > 2000 mg/kg
Species : Rat
OECD Guideline 402 (Acute Dermal Toxicity)

Inhalation route :
LC50 0.390

Skin corrosion/skin irritation :

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
Species : Rabbit
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Respiratory or skin sensitisation :

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
Species : Mouse
OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity :

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
Mutagenesis (in vitro) :
Negative.
OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Ames test (in vitro) :
Negative.
With or without metabolic activation.

11.1.2. Mixture

Respiratory or skin sensitisation :

Contains isocyanates. May cause an allergic reaction.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Substances

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
Fish toxicity :
LC50 > 100 mg/l
Species : Danio rerio
Duration of exposure : 96 h
REACH Method C.1 (Acute Toxicity for Fish)

Crustacean toxicity :
EC50 > 100 mg/l
Species : Daphnia magna
Duration of exposure : 48 h
REACH Method C.2 (Acute Toxicity for Daphnia)

Algae toxicity :
ECr50 = 199 mg/l
Duration of exposure : 72 h
REACH Method C.3 (Algal Inhibition test)

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

Substances

HOMOPOLYMERE 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
Biodegradability :
Not fast degrading.

12.3. Bioaccumulative potential

Substances

HOMOPOLYMER 1,6-DIISOCYANATE D'HEXAMETHYLENE (CAS: 28182-81-2)
log Koe = 8.38

Octanol/water partition coefficient :

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK) :

WGK 1 (VwvWS vom 27/07/2005, KBws) : Slightly hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :

- 15 01 10 * packaging containing residues of or contaminated by dangerous substances
- 08 01 11 * waste paint and varnish containing organic solvents or other dangerous substances

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2011 - IMDG 2010 - ICAO/IATA 2012).

14.1. UN number

1263

14.2. UN proper shipping name

UN1263=PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound)

14.3. Transport hazard class(es)

- Classification :



3

14.4. Packing group

III

14.5. Environmental hazards

-

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
3		F1	III	3	30	5 L	163 640EE 650	E1	3	D/E

Not subject to this regulation if Q < 450l.

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
3	-		III	5 L	F-E-S-E	163 223 955	E1

Not subject to this regulation if Q < 30l

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	3	-	III	355	60 L	366	220 L	A3 A72	E1
	3	-	III	Y344	10 L	-	-	A3 A72	E1

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available.

SECTION 15 : REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Classification and labelling information included in section 2:

The following regulations have been used:

- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- Regulation EC 1272/2008 modified by regulation EC 286/2011

- Container information:

No data available.

- Particular provisions :

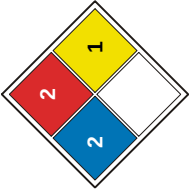
No data available.

- German regulations concerning the classification of hazards for water (WGK) :

Germany : WGK 1 (VwVwS vom 27/07/2005, KBws)

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704) :

NFPA 704, Labelling: Health=2 Inflammability=2 Instability/Reactivity=1 Specific Risk=none



15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Hazard symbols :



Harmful

Flammable

Contains :

615-011-00-1

CAS 28182-81-2

Risk phrase :

R 43

R 37

R 20

R 10

Safety phrase :

S 23

S 24

S 37

S 60

S 9

HEXAMETHYLENE-DI-ISOCYANATE
HOMOPOLYMER 1,6-DIISOCYANATE D'HEXAMETHYLENE

May cause sensitisation by skin contact.

Irritating to respiratory system.

Harmful by inhalation.

Flammable.

Contains isocyanates. See information supplied by the manufacturer.

Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

Avoid contact with skin.

Wear suitable gloves.

This material and its container must be disposed of as hazardous waste.

Keep container in a well-ventilated place.

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Title for H, EUH and R indications mentioned in section 3 :

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.
R 10	Flammable.
R 20	Harmful by inhalation.
R 23	Toxic by inhalation.
R 36/37/38	Irritating to eyes, respiratory system and skin.
R 37	Irritating to respiratory system.
R 42/43	May cause sensitization by inhalation and skin contact.
R 43	May cause sensitisation by skin contact.
R 66	Repeated exposure may cause skin dryness or cracking.
R 67	Vapours may cause drowsiness and dizziness.

Abbreviations :

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

GHS02 : Flame

GHS07 : Exclamation mark

DEP7007K**Division for Air Quality**

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Surface Coating or Printing Operations

- ☐ Section K.1: Process Information
- ☐ Section K.2: Coating Operations
- ☐ Section K.3: Other Operations
- ☐ Section K.4: Coatings/Printing Materials as Applied
- ☐ Section K.5: HAP-containing Coatings/Printing Materials
- ☐ Section K.6: Notes, Comments, and Explanations

Additional Documentation

- ☐ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
- ☐ Attach SDS or Technical Sheets for all Coating/Printing Materials
- ☐ Attach a flow diagram

Source Name: Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 4/10/2025

Section K.1: Process Information

Emission Unit #: EU08

Emission Unit Name: Paint Lines

Coating/Printing Line Name: Paint Line

Proposed/Actual Date of Construction: *(MM/YYYY)* 01/2007

List Applicable Regulations: 401 KAR 59:010 and 401 KAR 63:002

Describe Overall Process: Coating of manufactured parts with primer and top coat

Describe Coatings/Printing Materials: Primer & Top coat

**Identify the Material
that is Coated/Printed:**☒ Metal☐ Vinyl☐ Plastics☐ Wood☐ Foil☐ Paper☐ Other Substrate**Provide detailed description of material coated/printed:**

Aluminum aircraft wheels and piston housings

**Provide approximate dimensions and range of sizes of parts being
coated or printed:**

Wheel halves are approximately 10" wide with 24" diameter

Identify the Type of Operation:☐ Continuous☒ Batch☐ Other:**Describe Surface Preparation/Pretreatment Steps:**

Anodizing

**For Coating
Operations:**☒ Spray☐ Flow☐ Dip tank☐ Electrodeposition☐ Brush☐ Powder☐ Roller Coat☐ Other:**For Printing Operations:**

(Select all that apply)

☐ Web☐ Rotogravure☐ Heatset☐ Lithographic☐ Other:☐ Sheetfed☐ Letterpress☐ Non-heatset☐ Flexographic**Describe Final Product:**

Coated parts

Check the category that most closely describes this unit:☐ Large Appliance Coating☐ Auto or Light-Duty Truck Coating☐ Metal Furniture Coating☐ Metal Coil Coating☐ Beverage Can Coating☐ Miscellaneous Metal Parts Coating☐ Magnet Wire Insulation Coating☐ Flat Wood Panel Coating☐ Fabric, Vinyl, or Paper Coating☐ Boat Manufacturing/ Ship Repair☐ Pressure Sensitive Tape and Label Coating☐ Magnet Tape Coating☐ Publication Rotogravure Printing☐ Coating of Plastic Parts for Business Machines☐ Flexible Vinyl and Urethane Coating and Printing☐ Graphic Arts using Rotogravure and Flexographic Printing☒ Other: Aircraft parts

Section K.2: Coating Operations

K.2A: For Spray Coating

Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
Paint Line	Primer application	☐ Conventional Air Gun ☐ Airless ☒ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☒ Manual ☐ Automatic	0.16	gal./hr.	☐ Testing ☐ Equipment Specification Sheet ☒ Estimation
Paint Line	Topcoat application	☐ Conventional Air Gun ☐ Airless ☒ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☒ Manual ☐ Automatic	0.264	gal/hr	☐ Testing ☐ Equipment Specification Sheet ☒ Estimation
Paint Line	Solvent Usage	☐ Conventional Air Gun ☐ Airless ☒ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☒ Manual ☐ Automatic	0.089	gal/hr	☐ Testing ☐ Equipment Specification Sheet ☐ Estimation

If spray guns are used simultaneously, describe:

K.2B: For Brush Coating

Describe Function:

Maximum Coating Application Rate:
(gal/hr)

K.2C: For Roller Coating

Roller Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr)	Describe how maximum rate was determined
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2D: For Powder Coating

Powder Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

If powder coating material is recycled, describe:

K.2E: For Flow Coating

Flow Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2F: For Dip Tank/Electrodeposition Coating

Tank ID	Describe Function	Maximum Make-up Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:

Complete Form DEP7007B as applicable

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity (MMBtu/hr)	Fuel	Control Device/Stack ID
Paint Line 1 Oven (Primer Cure)	Drying of painted parts	115kW	Electric	P1-1,P1-2,P1-3
Paint Line 2 Oven (Topcoat Cure)	Drying of painted parts	115kW	Electric	P2-1, P2-2, P2-3

K.3C: For Purge

Type: _____

Daily Usage: _____ gal/day

K.3D: For Clean-up

Type: ☒ Manual ☐ Automatic

Daily Usage: _____ 12 hrs/day

Operating Hours: _____ 6 am -6 pm

K.3E: For Other Equipment

Describe Processes:

Section K.4: Coatings/Printing Materials As Applied

Include SDS or Technical Sheets for all coating/printing materials used.

Trade Name of Material	Description (Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density (lb/gal)	Solid Content (lb/gal)	VOC Content (lb/gal)	Emission Factor for PM* (lb/SCC)	Transfer Efficiency (%)	Emission Factor for VOC (lb/SCC)	Capture Efficiency (%)	Control Device/ Stack ID
Aerodur UVR Clearcoat	Topcoat	Paint Line	40200110	gallon	8.37	3.85	4.52	3.85	50.0%	4.52	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
S66/22R	Hardener	Paint Line	40200110	gallon	7.97	2.63	5.3	2.63	50.0%	5.3	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
C25/90S	Thinner	Paint Line	40200110	gallon	7.09	0	7.09	n/a	50.0%	7.09	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
10P20-13	Primer	Paint Line	40200110	gallon	13.59	10.99	2.604	10.99	50.0%	2.604	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
EC-213	Hardener	Paint Line	40200110	gallon	7.95	4.51	3.447	4.51	50.0%	3.447	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
Aviox "Grey" 7702	Topcoat	Paint Line	40200110	gallon	10.93	7.89	3.05	7.89	50.0%	3.05	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
90150	Hardener	Paint Line	40200110	gallon	9.38	0	0.676	n/a	50.0%	0.676	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
99321	Activator	Paint Line	40200110	gallon	7.49	0	7.486	n/a	50.0%	7.486	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
Aviox "White" 7702	Topcoat	Paint Line	40200110	gallon	10.96	7.93	3.03	7.93	50.0%	3.03	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
SP350 Primer Plus Thinner	Primer	Paint Line	40200110	gallon	10.6	7.89	2.38	7.89	50.0%	2.38	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4

Trade Name of Material	Description (Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density (lb/gal)	Solid Content (lb/gal)	VOC Content (lb/gal)	Emission Factor for PM* (lb/SCC)	Transfer Efficiency (%)	Emission Factor for VOC (lb/SCC)	Capture Efficiency (%)	Control Device/ Stack ID
SP350 Hardener	Hardener	Paint Line	40200110	gallon	8.68	0	0.835	n/a	50.0%	0.835	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
SP350 Thinner	Thinner	Paint Line	40200110	gallon	7.32	0	7.327	n/a	50.0%	7.327	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
XS420 Topcoat	Topcoat	Paint Line	40200110	gallon	12.02	5.99	3.18	5.99	50.0%	3.18	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
XS 420 Hardener	Hardener	Paint Line	40200110	gallon	9.43	8.51	0.48	8.51	50.0%	0.48	98.5%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
713	Thinner	Paint Line	40200110	gallon	7.34	0	7.352	n/a	50.0%	7.352	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
MEK	Solvent	Paint Line	40200110	gallon	6.718	0	5.6	0	50.0%	5.6	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4
C28/15 Solvent	Solvent	Paint Line	40200110	gallon	6.835	0	6.835	n/a	50.0%	6.835	0.0%	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4

*Emission factor for particulate matter (PM) should not include transfer efficiency.

Section K.5: Hazardous Air Pollutant-containing Coatings/Printing Materials

List each individual hazardous air pollutant (HAP) contained in each material.

Trade Name of Material	HAP Name	HAP CAS #	Identify Solid (S) or Volatile (V)	HAP % by weight	HAP Emission Factor (lb/SCC)	Control Device/ Stack ID
10P20-13	Xylene	1330-20-7	V	3.0%	0.41 lb/gal	P1-1, P1-2, P1-3, P1-4
10P20-13	EthylBenzene	100-41-4	V	1.0%	0.14 lb/gal	P1-1, P1-2, P1-3, P1-4
10P20-13	Methyl Isobutyl Ketone	108-10-1	V	10.0%	1.36 lb/gal	P1-1, P1-2, P1-3, P1-4
10P20-13	Strontium Chromate	6/2/7789	V	50.0%	6.797 lb/gal	P2-1, P2-2, P2-3, P2-4
10P20-13	Barium Chromate	10294-40-3	V	1.0%	0.136 lb/gal	P2-1, P2-2, P2-3, P2-4
Avoix "White" 7702	Xylene	1330-20-7	V	2.5%	0.55 lb/gal	P2-1, P2-2, P2-3, P2-4
Avoix "Grey" 7702	Xylene	1330-20-7	V	5.0%	0.27 lb/gal	P2-1, P2-2, P2-3, P2-4
Aerodur UVR Clearcoat	Xylene	1330-20-7	V	15.0%	1.26 lb/gal	P2-1, P2-2, P2-3, P2-4
Aerodur UVR Clearcoat	EthylBenzene	100-41-4	V	5.0%	0.42 lb/gal	P2-1, P2-2, P2-3, P2-4
S66/22R	Xylene	1330-20-7	V	5.0%	0.40 lb/gal	P2-1, P2-2, P2-3, P2-4

Trade Name of Material	HAP Name	HAP CAS #	Identify Solid (S) or Volatile (V)	HAP % by weight	HAP Emission Factor (lb/SCC)	Control Device/ Stack ID
S66/22R	EthylBenzene	100-41-4	V	5.0%	0.40 lb/gal	P2-1, P2-2, P2-3, P2-4
C25/90S	Methyl Isobutyl Ketone	108-10-1	V	10.0%	0.71 lb/gal	P2-1, P2-2, P2-3, P2-4
XS420 Topcoat	Xylene	1330-20-7	V	10.0%	1.20 lb/gal	P2-1, P2-2, P2-3, P2-4
XS420 Topcoat	EthylBenzene	100-41-4	V	3.0%	0.36 lb/gal	P2-1, P2-2, P2-3, P2-4
C28/15 Solvent	Toluene	108-88-3	V	35.0%	2.39 lb/gal	P1-1, P1-2, P1-3, P1-4, P2-1, P2-2, P2-3, P2-4

Section K.6: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

- ___ Section N.1: Emission Summary
___ Section N.2: Stack Information
___ Section N.3: Fugitive Information
___ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Safran Landing Systems, LLCKY EIS (AFS) #: 21- 015-00125Permit #: F-13-023 R4Agency Interest (AI) ID: 137Date: 4/10/2025

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	0.016 gal/hr	VOC	7.327 lb/gal	Mass Balance	100.00%	0.0%	1.172	n/a	5.135	n/a
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	Fabric Filter	n/a	P1-4	0.016 gal/hr	PM/PM10	10.99 lb/gal	Mass Balance	100.00%	98.65%	1.758	0.024	7.702	0.104
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	0.016 gal/hr	xylene	0.408 lb/gal	Mass Balance	100.00%	0.0%	0.065	n/a	0.286	n/a
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	0.016 gal/hr	ethylbenzene	0.136 lb/gal	Mass Balance	100.00%	0.0%	0.022	n/a	0.095	n/a
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	0.016 gal/hr	methyl isobutyl ketone	1.359 lb/gal	Mass Balance	100.00%	0.0%	0.218	n/a	0.953	n/a
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	0.016 gal/hr	Strontium Chromate	6.797 lb/gal	Mass Balance	100.00%	0.0%	1.088	n/a	4.764	n/a
EU08	Paint Lines	08	Paint Line 1 (Primer Line)	n/a	n/a	P1-1,P1-2,P1-3,P1-4	0.016 gal/hr	Barium Chromate	0.136 lb/gal	Mass Balance	100.00%	0.0%	0.022	n/a	0.095	n/a
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	n/a	n/a	P2-1,P2-2,P2-3,P2-4	0.264 gal/hr	VOC	7.486 lb/gal	Mass Balance	100.00%	n/a	1.976	n/a	8.656	n/a
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	Fabric Filter	n/a	P2-4	0.264 gal/hr	PM/PM10	8.510 lb/gal	Mass Balance	100.00%	98.65%	2.247	9.84	0.03	0.133
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	n/a	n/a	P2-1,P2-2,P2-3,P2-4	0.264 gal/hr	xylene	1.256lb/gal	Mass Balance	100.00%	0.0%	0.005	n/a	0.022	n/a
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	n/a	n/a	P2-1,P2-2,P2-3,P2-4	0.264 gal/hr	ethylbenzene	0.419 lb/gal	Mass Balance	100.00%	0.0%	0.002	n/a	0.007	n/a

EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	n/a	n/a	P2-1,P2-2,P2-3,P2-4	0.264 gal/hr	methyl isobutyl ketone	0.797 lb/gal	Mass Balance	100.00%	0.0%	0.003	n/a	0.014	n/a
EU08	Paint Lines	08	Paint Line 2 (Topcoat Line)	n/a	n/a	P2-1,P2-2,P2-3,P2-4	0.089 gal/hr	toluene	2.392 lb/gal	Mass Balance	100.00%	0.0%	0.213	n/a	0.933	n/a

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
P1-1	Primer Line Curing Oven	0.5	40	900	38.924793	-84.609251	n/a	180	n/a
P1-2	Primer Line Curing Oven	1	40	900	38.924805	-84.60926	n/a	180	n/a
P1-3	Primer Line Curing Oven	1	40	900	38.924797	-84.609184	n/a	180	n/a
P2-1	Topcoat Line Curing Oven	0.5	40	900	38.92476	-84.60907	n/a	150	n/a
P2-2	Topcoat Line Curing Oven	1	40	900	38.924766	-84.609114	n/a	150	n/a
P2-3	Topcoat Line Curing Oven	1	40	900	38.92476	-84.609047	n/a	150	n/a
P1-4	Paint Line 1 (Primer Line)	3.5	40	900	38.92482	-84.60923	n/a	72	n/a
P2-4	Paint Line 2 (Topcoat Line)	3.5	40	900	38.9248	-84.60900	n/a	72	n/a
P3-1	Mixing Booth	1	40	900	38.92484	-84.60927	n/a	72	n/a

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side <i>(ft)</i>	Length of the Y Side <i>(ft)</i>	Northing <i>(m)</i>	Easting <i>(m)</i>	Release Temperature <i>(°F)</i>	Release Height <i>(ft)</i>

Section N.4: Notes, Comments, and Explanations

These calculations are the worst possible for PTE. In reality we spray these materials in a mixture in which pollutants would be in lesser amounts.



Outlook

RE: Locations

From FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Date Wed 5/14/2025 11:51 AM

To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

This Message Originated from Outside the Organization

This Message Is From an External Sender.

[Report Suspicious](#)

Babak,

The spray booth exhausts (p1-4, p2-4) operate at 18,000 cfm

Let me know if anything else is needed.

Thanks

Ben

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Sent: Wednesday, May 14, 2025 8:42 AM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: RE: Locations

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Morning,

I need the property boundaries and the building dimensions in the property for air toxic analysis/modeling. I do not necessarily need where the boilers/reactors... are located, since we have stack info (like you said). Please remember to provide the acfm for the paint lines.

Thank you!

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Sent: Wednesday, May 14, 2025 8:05 AM

To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Subject: RE: Locations

Babak,

I will get this together today.

Do you just need the area of the space the boilers/reactors/paint lines occupy or the entire building they are in? I thought the N forms had the coordinates for the stacks for these processes?

Thanks

Ben

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Sent: Tuesday, May 13, 2025 1:21 PM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: Locations

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Hi Ben, Would you provide the following Info and stack gas flow rates (acfm) for painting lines (stack P1-4 and P2-4).

Thanks

Babak

Coordinates of the Plant Property Boundary in UTM's	
NW Corner	
NE Corner	
SE Corner	
SW Corner	

And building dimensions where the boilers, reactors and painting lines are located

Name/ID/Description of Building (if applicable)	Height (ft)	Width (ft)	Length (ft)	Comments

#

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#

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999		DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations		Additional Documentation ___ Complete DEP7007AI												
Source Name:		Safran Landing Systems, LLC														
KY EIS (AFS) #:		21- 015-00125														
Permit #:		F-13-023 R4														
Agency Interest (AI) ID:		137														
Date:		1/17/2025														
N.1: Emission Summary																
Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU03	Reactor 441	03A	Carbonizing Reactor	Thermal Oxidizer #1	TOX#1	C-TO1	0.047	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	11.589	1.39E-06	50.759	6.11E-06
EU03	Reactor 490	03D	Carbonizing Reactor	Thermal Oxidizer #2	TOX#2	C-TO2	0.0595	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.619	1.30E-06
EU03	Reactor 491	03E	Carbonizing Reactor	Thermal Oxidizer #2	TOX#2	C-TO2	0.0595	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.619	1.30E-06
EU03	Reactor 442	03B	Carbonizing Reactor	Thermal Oxidizer #3	TOX#3	C-TO3	0.047	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	11.589	1.39E-06	50.759	6.11E-06
EU03	Reactor 443	03C	Carbonizing Reactor	Thermal Oxidizer #4	TOX#4	C-TO4	0.07	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	26.071	2.09E-06	114.19	9.16E-06
EU03	Reactor 492	03F	Carbonizing Reactor	Thermal Oxidizer #4	TOX#4	C-TO4	0.0595	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.619	1.30E-06
EU03	Reactor 493	03G	Carbonizing Reactor	Thermal Oxidizer #4	TOX#4	C-TO4	0.0595	HCN	0.0000298	Sept 2008 Emission Test	100.00%	99.999991	0.846	1.78E-06	0.0619	1.30E-06

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-TO1	Reactor 441	2.5	75	860	38.92313	-84.60981	2056	1277	10.9
C-TO2	Reactor 490, Reactor 491	2.5	75	860	38.92307	-84.60914	2056	1277	10.9
C-TO3	Reactor 442	2.5	75	860	38.9233	-84.60996	2056	1277	10.9
C-TO4	Reactor 443, Reactor 492, Reactor 493	2.5	80.73	860	38.92297	-84.60817	2056	1277	10.9

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side <i>(ft)</i>	Length of the Y Side <i>(ft)</i>	Northing <i>(m)</i>	Easting <i>(m)</i>	Release Temperature <i>(°F)</i>	Release Height <i>(ft)</i>

Section N.4: Notes, Comments, and Explanations

Currently using Sept 2008 emission factors until results from Oct/Nov 2024 testing results are approved



RE: Safran Air Permit Renewal - Ancillary Information

From FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Date Thu 1/30/2025 12:36 PM

To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

 1 attachment (70 KB)

TOX and Carbonization Emission Factors.pdf;

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

This Message Originated from Outside the Organization

This Message Is From an External Sender.

Report Suspicious

Babak,

See the attached table better outlining the emission factors and a scenarios we run the TOX units in. If you have any questions or concerns please let me know.

Would you like me to update the N form to include the Gaseous and PM pollutants in since the earlier one sent on only showed HCN?

Thanks

Ben

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Sent: Wednesday, January 29, 2025 8:53 AM

To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

Hi Babak,

Please allow us a day or two to get you an answer that makes sense. Until then, here's what I recall (shootin' from the hip since I'm working from home today!):

- We have two very different emissions streams when considering the oxidizers: (1) the first emissions stream is simply the Natural Gas combustion gases when the Carbonizing Reactors are not heating/off-gassing (AP-42 factors based upon burner sizes); (2) the second gas stream is the combination of these natural gas combustion gases plus the remnants from the combustion of the Carbonization Reactor effluent stream. We have tried very hard to account for these separately in past calculations, but maybe we missed the mark. We will investigate.
- For all of the historical emissions tests on the Carbonization Reactors and/or oxidizers, our test reports show an inconsistency in what emissions constituents were tested from test-to-test. Not only that, the only 'truly valid' test for fully accounting for and quantifying the Reactor effluent and oxidizer emissions stream was in 2014, and that's because this test accounted for the entire Carbonization cycle (20 or so 1-hr. runs I believe). We 'should' be basing our emissions factors per Carbonization cycle (as a function of Tons of PAN input) on this test alone. All other tests are simply moments in time (i.e. three, 1-hr. runs) which are only good for validating the destruction of HCN. Because of how all of the various gases release from the PAN at different temperatures and at varying rates, only the 2014 test data gives us a good picture of what going on in totality.

Like I said, please allow us a few days to chew on this more and get back to you with a more technically, coherent response.

Thanks!

Todd

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Sent: Wednesday, January 29, 2025 8:17 AM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Good morning,

While we are looking at the carbonization process I want to also ask if the original emission calculations or the Emissions Inventory Section needs to be corrected. Currently we have emission factors for CO, PM10, PT, SO2, and VOC on file, in addition to HCN. We already know that the PT, PM10, SO2 and NOx emissions appear to be incorrect (They are Efs for NG combustion) and should be removed, but we wanted to double check with you regarding the potential to emit for CO and VOC in addition to HCN. Is there a reason not to expect these pollutants from the carbonization process and why?

Thanks

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Sent: Monday, January 27, 2025 1:09 PM

To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING

SYSTEMS) <yann.kuntz@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Babak,

Sorry for the delayed response. After reviewing the calculation we had 24 hours per cycle instead of 30. The C1 reactors (441, 442, 443) have cycle times of 30 hours and the C2/2.5/3 reactors (490, 491, 492, 493) have a cycle time of 84 hours. Your calculations are correct for determining the max design rate. I will update the N Form with the corrections and resend it.

Thanks

Ben

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Sent: Wednesday, January 22, 2025 2:20 PM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Good afternoon,

I am calculating the max design rate for the Carbonizing Reactors using the lb/batch and the hour per batch as provided in order to calculate lb/hr numbers but for some reason I can not get them aligned with the design rate that is listed in the N-form.

For example, the reactor 441

There are 2,245.7 lbs/batch and there are 30 hours per batch (so $2245.7 \text{ (lb/batch)} / 2000 \text{ (lb/ton)} = 1.1228$ ton/batch

$8760 \text{ (hr/yr)} / 30 \text{ (hr/batch)} = 292$

$292 * 1.12 = 327.8 \text{ ton/yr}$

And I get design rate of 0.037 tons/hr ($327.8 / 8760$) instead of the provided number of 0.047 ton/hr?

Would you send a sample calculation so I can see what I'm doing wrong.

Thank you

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Sent: Thursday, January 16, 2025 2:46 PM

To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING

SYSTEMS) <yann.kuntz@safrangroup.com>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Subject: Re: Safran Air Permit Renewal - Ancillary Information

Babak,

Please follow the process id's as they are listed on the B form. Which would be as follows.

Reactor 441 - 03A
Reactor 442 -03B
Reactor 443 - 03C
Reactor 490 - 03D
Reactor 491 - 03E
Reactor 492 - 03F
Reactor 493 - 03G

I will update the n form and send it over tomorrow. (I am out of the office today)

I will have a clear answer for you on the maximum capacity tomorrow as well.

Thanks

Ben

Sent from my iPhone

On Jan 16, 2025, at 1:11 PM, Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov> wrote:

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Also, would you check the maximum design capacity for these reactors as well, it seems like Form N and Form B are using different ton/hr.

Thanks

From: Fakharpour, Babak (EEC)

Sent: Thursday, January 16, 2025 12:06 PM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

Hi, Would you go over DEP7007N form and B form and let me know which process ID/ emission unit name is correct? Specifically for carbonizing Reactors (i.e is 03B Reactor 490 or Reactor 442).

Thanks

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Sent: Monday, January 13, 2025 11:35 AM

To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Cc: KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Amy,

I hope all is going well for you in the New Year. I was just checking in to see that you have received all the documents we uploaded for the permit renewal.

Please let us know if there is anything else we can provide or if there are any questions about what we have provided.

Thanks

Ben

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Sent: Thursday, December 5, 2024 7:12 AM
To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Cc: KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Good morning Amy,

I've attached a letter that hopefully covers and wraps-up everything we've been discussing with respect to this application re-submittal. If you need anything else, please let me know. Thanks!

Todd

From: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Sent: Wednesday, December 4, 2024 9:20 AM
To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>
Subject: RE: Safran Air Permit Renewal - Ancillary Information

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Thank you for the update, and Todd, thank you for your email too.

If you don't mind sending a cover letter (or just a submitted writeup on a blank word document) that encapsulates the information/answers in Todd's email and describes the resubmittal generically (e.g. a listing of all forms being submitted, a generic reason for the withdrawal and resubmittal (i.e. incorrect information was submitted and Safran is correcting that information and improving the information previously on file with DAQ with current data), that would be very helpful (and usually better for the file/public notice than an email). Doesn't have to be overly formal and can reference our meeting as needed.

If you want me to just stick with the email I can do that too, I just figured if we're cleaning up the record and getting a whole new renewal package, that would usually be a part of it.

Thank you all for all you are doing to move this along.

Amy K. Tempus-Doom, PE
(she/her)
Environmental Engineer Consultant
Division for Air Quality
Permit Review Branch
300 Sower Boulevard
Frankfort, Kentucky 40601
502-782-6786

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Sent: Wednesday, December 4, 2024 7:58 AM
To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>
Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Amy,

Below is a list of the forms submitted yesterday 12/3/2024 along with the ones we are still working on. Please let me know if there are any questions/concerns about what we have submitted.

Form ID	Description	Submitted
DEP7007A	Indirect Heat Exchangers - Boilers	12/3/2024
DEP7007EE	Internal Combustion Engines - Emer Gen and Pumps	12/3/2024
DEP7007N	Boiler 1	12/3/2024
DEP7007N	Boiler 2	12/3/2024
DEP7007N	Boiler 3	12/3/2024
DEP7007N	Boiler 4	12/3/2024
DEP7007N	Boiler 5	12/3/2024
DEP7007N	EG#1	12/3/2024
DEP7007N	EG#2	12/3/2024
DEP7007N	EG#3	12/3/2024

DEP7007N	EG#4	12/3/2024
DEP7007N	EP#1	12/3/2024
DEP7007N	EP#2	12/3/2024
DEP7007N	EP#3	12/3/2024
DEP7007N	EP#4	12/3/2024
DEP7007N	Carbonizing Reactors	12/3/2024
DEP7007N	Contact Cooling Towers	12/3/2024
DEP7007N	NonContact Cooling Towers	12/3/2024
DEP7007B	Manufacturing or Processing Operations - Carbonizing	
DEP7007B	Manufacturing or Processing Operations - Cooling	
DEP7007DD	Insignificant Activities	
DEP7007V	Applicable Requirements and Compliance Activities	
DEP7007N	Machining	
DEP7007GG	Control Equipment	
DEP7007K	Surface Coating	
DEP7007N	Paint Lines	
DEP7007N	Thermal Wells (B500/600)	
DEP7007N	Water Treatment	
n/a	Updated OM&M	

Thanks

Ben

Benjamin FERN
HSE Environmental Engineer
Safran Landing Systems

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From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Sent: Tuesday, December 3, 2024 12:42 PM
To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Cc: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Subject: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Hi Amy,

Ben is finishing-up the application forms, and we'll begin submitting those later this afternoon.

With respect to your questions in an October 25th email, I have included your original questions (in Bold) and my responses below. None of this information is being claimed as Confidential. Please don't hesitate to contact me for clarity.

The change for the 481 and 482 furnaces to only to heat treat and why that means no emissions are expected.

The 481 and 482 reactors were converted from combination reactors (Carbonization and Heat Treat processes) to Heat Treat ONLY ovens because the facility increased its Carbonization process capacity by adding 49X reactors. Since the Heat Treat process is meant solely to molecularly align the Carbon within the disks post densification (infiltration) process, there are no emissions from this process.

A description of why "reactor" is a better description for the carbonizing furnaces.

For all of the Carbonization, Infiltration, Heat Treat and Curing vessels onsite, the more appropriate term for them is "Reactor" and not "Furnace" as they have been referred to in previous permits. The term "Furnace" denotes the burning, charring or even melting of a material, and this is not the case at this site. Instead, we create chemical and/or molecular reactions in our vessels using very high temperatures (using electricity, not fuel) as the reaction catalyst.

A description of the name changes for the boilers (and any other units that need a name change) so that it is clear in the record (and we don't get confused later).

The Boilers 1, 2 and 3 will retain these names. However, Boilers 5 and 6 will be renamed Boilers 4 and 5, respectively. The Anodize Boiler #4 will now be named W&B Boiler.

A discussion of the venting emissions and why they were originally expected, but are no longer expected under normal operation.

When this emission was first calculated for the original air permit, it was done by calculating the "worst possible instance." The previous calculation assumed that all of the process gas that was passed through the furnace during the start-up step (that has the system open to the atmosphere) was allowed to escape the system. For this air permit renewal application, this calculation was completed again, but this time better information was used to make the calculation more accurate to our system: 1) the volume of the furnace and of the piping was taken into account, 2) the ramping-up flowrate of the gas was used instead of assuming 100% process gas flows from the start, and 3) the total time that the system is open to the air was observed from the site's equipment software (12 seconds) and used in the calculation instead of using the entire start-up step time. When these three changes were made, the results showed that not enough process gas is passed through the system at the start to reach the vent before it is switched off. From this, it was proven that no process gas is released during any CVI furnace start up, so this potential emission point may be removed.

A discussion of the lb/hr HCN limits currently in the permit, how they are below the detection limit for the testing, and what operational measures Safran takes to ensure that if "Non detect" is measured during a test, it means 0, instead of the detection limit. (e.g. destruction temps, etc.)
We will be looking at whether we need those, but it needs to be in light of requirements related to

how the thermal oxidizers are operated. The tpy limit will remain regardless and may be revised due to updated modeling we'll do with this renewal once we have the calculations sorted out.

For the permit limits of Hydrogen Cyanide gas (HCN) from the thermal oxidizers, Safran has determined/calculated an emission factor based upon the following:

1. Every emissions test for each of the thermal oxidizer exhausts has shown "No Detect" levels, meaning that at the sensitivity level of the approved EPA Test Methodology used for the tests, we have never detected any level of HCN.
2. Using the detection limit of the EPA Test Methodology, we back-calculated a DE of 99.999991% for the tests, which was then used to create an emission rate. However, Safran believes the DE to be 100% because:
 1. HCN destructs fully at 1,000F;
 2. The thermal oxidizer chamber temperatures vary slightly among the units, but they are all maintained at a minimum chamber temperature of 1,700F (November 2024 emissions tests); and
 3. Safran's environmental ethos is to ensure to the best of our ability that zero HCN is emitted into the surrounding environment, so we intentionally run our thermal oxidizers at much higher temperatures than is needed to be sure that zero HCN is emitted.

A specific listing of all equipment currently listed in EIS that needs to be removed because it no longer exists, again, just for file clarity.

Per the KY EIS for Inventory Year 2023, the following equipment/processes are to be removed as emissions sources:

EQPT0000000002 – Carbonizing Furnaces 481 and 482: These Reactors have been converted to Heat Treat-only reactors, and the Heat Treat process does not create emissions.

EQPT0000000003 – Infiltration Boilers/Furnaces: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000009 – Chemical Storage and Transfer System: This process was decommissioned and removed.

EQPT0000000010 – Developmental Equipment: This process was decommissioned and removed.

EQPT0000000012 – Infiltration Furnaces #601, 602, 603: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000021 – Infiltration Furnaces 604-609: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000024 – A-360 Spray Booths: This process was never installed.

A general discussion of how the infiltration furnaces + boilers (and the steps in between) is more appropriately referred to as the "Carbon Infiltration Process" and what the limiting factors are for throughput (e.g. steam). Also, an affirmative statement that there are no points in the process between the furnaces and boilers where NGE may escape or be released to the atmosphere prior to combustion in the boilers. This will help us explain in the record why we are only calculating emissions from the boilers. If possible, this should be general enough that we can include it in the record without a claim of confidentiality. Please also include a little bit about how NGE from any of the furnaces can be sent to any of the boilers, and how the facility will monitor throughput for each boiler for survey purposes.

The Carbon Vapor Infiltration (CVI) production process includes reactors, boilers, and vacuum towers as the main process drivers. The CVI production process is symbiotic in that:

1. The CVI reactors generate natural gas effluent (NGE), and the reactors require vacuum to operate;
2. The vacuum is created in the vacuum towers via steam-venturi systems,
3. The steam is produced by the boilers, and

4. The boilers burn the CVI reactor NGE (and natural gas) as fuel to generate the process steam.

The main contributor to CVI production process emissions is the boilers, and their emissions are created from the burning of the NGE and natural gas.

Thermal wells (atmospheric settling tanks) and condensate towers are also required CVI production process equipment. They also emit VOC's to the environment:

1. The thermal wells contain condensed steam and a warm vapor head space that is saturated with water and 'light' VOC's. As these thermal wells are atmospheric, the tanks breathe as varying amounts of steam is condensed, and as potentially varying amounts of water is withdrawn to the condensate towers. Small amounts of VOC's are emitted to the environment as the head space contracts.
2. The condensate towers receive the water (condensed steam) from the thermal wells, cool it for return to the process, and release some VOC's to the environment.

Even though the CVI production process comprises many reactors, boilers, vacuum towers, thermal wells and condensate towers of varying sizes and in different buildings, the entire CVI production process is interconnected – all NGE and steam have the ability to be contained in common headers. This means that the NGE produced by a single CVI reactor can be utilized as fuel in any of the five boilers, and steam produced by any of the boilers may be used in any of the vacuum towers to create vacuum for any of the CVI reactors.

The facility tracks and records the amount of steam produced in each boiler, and this data is then used, along with natural gas usage (metered), to calculate the amount of NGE used in each boiler. Based on the total fuel usage, the facility then uses emissions factors (from emissions tests and AP-42 factors) to determine the emissions for each boiler.

I hope this helps!

Todd FOSTER

HSE Engineering Manager
Safran Landing Systems

P +00 (1) 859 817 3105 • M +00 (1) 859 479 6943

www.safran-landing-systems.com

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CARBONIZATION AND THERMAL OXIDIZER EMISSION FACTORS						
Condition		Carbonization Reactor Emissions <i>Emissions Factors from 2014 Testing of 442 and 491¹</i>			Thermal Oxidizer Emissions while Carbonization Cycle is occurring <i>Emission Factors from 2008 testing of 441²</i>	Thermal Oxidizer Emissions while burning only Natural Gas (no Carbonization cycle) <i>AP 42. 1.4 Emission Factors for Natural Gas Combustion³</i>
		Emission Unit				
Pollutant		441/442	443	49x	TOX units 1-4	TOX units 1-4
HCN	lbs/ton PAN	247.7	371.55	14.2	0.0000298 ^{2a}	
	lbs/cycle	278.085	417.1275	20.3		
NH3	lbs/ton PAN	237.9	356.85	23.4	There are no Ammonia Emissions. It is converted to water and NOx in the incinerator	
	lbs/cycle	267.126	400.689	33.452		
CO2	lbs/ton PAN	96	144	71	2161.07507	
	lbs/cycle	107.794	161.691	101.499		
H2O	lbs/ton PAN	230	345	100.4		
	lbs/cycle	258.255	387.3825	143.528		
CO	lbs/ton PAN	57	85.5	35.6	8.02561	
	lbs/cycle	64.002	96.003	50.892		
	lbs/mmscf					84
NOX	lbs/mmscf					2.2
	lb/ton PAN				18.44756	
VOC	lbs/mmscf					5.5
	lb/ton PAN				0.0224	
SO2	lbs/mmscf					0.6
	lb/ton PAN				1.48574	
PM/PM10	lbs/mmscf				7.6 ^{2b}	7.6
	lb/ton PAN					

Notes

1 This testing occurred over the entire length of each carbonization cycle.

It consisted of 18 1 hr sample runs on the inlet to Incinerator #3 (Reactor 442 Exhaust) and 26 1 hr sample runs on the inlet to Incinerator #2 (Reactor 491 exhaust) with no time lost in between tests.

No Data on the TOX Exhausts were collected during this sampling event

Reactor 443 is 50% larger than 441/442. Emission are assumed to be 50% greater based on amount of PAN Reactor 443 can hold.

2 This testing occurred over an entire carbonization cycle.

This testing was on Incinerator #1 Exhaust.

2^a The Emission Factor for HCN was calculated based on detection limit because all samples were non-detect

2^b Using the AP 42 emission factor for PM

3 Emissions Factors based on AP 42 tables for Natural Gas Combustion

Any sampling event that has occurred since 2008 on the TOX Exhausts has been to validate (not change) the HCN emission factor from 2008 since none of the testing was over the entire length of a cycle.



RE: Safran Air Permit Renewal - Ancillary Information

From FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Date Mon 1/27/2025 4:47 PM

To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>

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C2 - Confidential

Babak,

Sorry for the delayed response. After reviewing the calculation we had 24 hours per cycle instead of 30. The C1 reactors (441, 442, 443) have cycle times of 30 hours and the C2/2.5/3 reactors (490, 491, 492, 493) have a cycle time of 84 hours. Your calculations are correct for determining the max design rate. I will update the N Form with the corrections and resend it.

Thanks

Ben

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Sent: Wednesday, January 22, 2025 2:20 PM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Good afternoon,

I am calculating the max design rate for the Carbonizing Reactors using the lb/batch and the hour per batch as provided in order to calculate lb/hr numbers but for some reason I can not get them aligned with the design rate that is listed in the N-form.

For example, the reactor 441

There are 2,245.7 lbs/batch and there are 30 hours per batch (so $2245.7 \text{ (lb/batch)} / 2000 \text{ (lb/ton)} = 1.1228 \text{ ton/batch}$

$8760 \text{ (hr/yr)} / 30 \text{ (hr/batch)} = 292$

$292 * 1.12 = 327.8 \text{ ton/yr}$

And I get design rate of 0.037 tons/hr ($327.8 / 8760$) instead of the provided number of 0.047 ton/hr?

Would you send a sample calculation so I can see what I'm doing wrong.

Thank you

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Sent: Thursday, January 16, 2025 2:46 PM

To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Subject: Re: Safran Air Permit Renewal - Ancillary Information

Babak,

Please follow the process id's as they are listed on the B form. Which would be as follows.

Reactor 441 - 03A

Reactor 442 - 03B

Reactor 443 - 03C

Reactor 490 - 03D

Reactor 491 - 03E

Reactor 492 - 03F

Reactor 493 - 03G

I will update the n form and send it over tomorrow. (I am out of the office today)

I will have a clear answer for you on the maximum capacity tomorrow as well.

Thanks

Ben

Sent from my iPhone

On Jan 16, 2025, at 1:11 PM, Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov> wrote:

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Also, would you check the maximum design capacity for these reactors as well, it seems like Form N and Form B are using different ton/hr.

Thanks

From: Fakharpour, Babak (EEC)

Sent: Thursday, January 16, 2025 12:06 PM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

Hi, Would you go over DEP7007N form and B form and let me know which process ID/ emission unit name is correct? Specifically for carbonizing Reactors (i.e is 03B Reactor 490 or Reactor 442).

Thanks

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Sent: Monday, January 13, 2025 11:35 AM

To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Amy,

I hope all is going well for you in the New Year. I was just checking in to see that you have received all the documents we uploaded for the permit renewal.

Please let us know if there is anything else we can provide or if there are any questions about what we have provided.

Thanks

Ben

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Sent: Thursday, December 5, 2024 7:12 AM

To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Good morning Amy,

I've attached a letter that hopefully covers and wraps-up everything we've been discussing with respect to this application re-submittal. If you need anything else, please let me know. Thanks!

Todd

From: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Sent: Wednesday, December 4, 2024 9:20 AM
To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>
Subject: RE: Safran Air Permit Renewal - Ancillary Information

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Thank you for the update, and Todd, thank you for your email too.
If you don't mind sending a cover letter (or just a submitted writeup on a blank word document) that encapsulates the information/answers in Todd's email and describes the resubmittal generically (e.g. a listing of all forms being submitted, a generic reason for the withdrawal and resubmittal (i.e. incorrect information was submitted and Safran is correcting that information and improving the information previously on file with DAQ with current data), that would be very helpful (and usually better for the file/public notice than an email). Doesn't have to be overly formal and can reference our meeting as needed.

If you want me to just stick with the email I can do that too, I just figured if we're cleaning up the record and getting a whole new renewal package, that would usually be a part of it.

Thank you all for all you are doing to move this along.

Amy K. Tempus-Doom, PE

(she/her)

Environmental Engineer Consultant
Division for Air Quality
Permit Review Branch
300 Sower Boulevard
Frankfort, Kentucky 40601
502-782-6786

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Sent: Wednesday, December 4, 2024 7:58 AM
To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>
Subject: RE: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Amy,

Below is a list of the forms submitted yesterday 12/3/2024 along with the ones we are still working on. Please let me know if there are any questions/concerns about what we have submitted.

Form ID	Description	Submitted
DEP7007A	Indirect Heat Exchangers - Boilers	12/3/2024
DEP7007EE	Internal Combustion Engines - Emer Gen and Pumps	12/3/2024
DEP7007N	Boiler 1	12/3/2024
DEP7007N	Boiler 2	12/3/2024
DEP7007N	Boiler 3	12/3/2024
DEP7007N	Boiler 4	12/3/2024
DEP7007N	Boiler 5	12/3/2024
DEP7007N	EG#1	12/3/2024
DEP7007N	EG#2	12/3/2024
DEP7007N	EG#3	12/3/2024
DEP7007N	EG#4	12/3/2024
DEP7007N	EP#1	12/3/2024
DEP7007N	EP#2	12/3/2024
DEP7007N	EP#3	12/3/2024
DEP7007N	EP#4	12/3/2024
DEP7007N	Carbonizing Reactors	12/3/2024
DEP7007N	Contact Cooling Towers	12/3/2024
DEP7007N	NonContact Cooling Towers	12/3/2024
DEP7007B	Manufacturing or Processing Operations - Carbonizing	
DEP7007B	Manufacturing or Processing Operations - Cooling	
DEP7007DD	Insignificant Activities	
DEP7007V	Applicable Requirements and Compliance Activities	
DEP7007N	Machining	
DEP7007GG	Control Equipment	
DEP7007K	Surface Coating	
DEP7007N	Paint Lines	
DEP7007N	Thermal Wells (B500/600)	
DEP7007N	Water Treatment	
n/a	Updated OM&M	

Thanks

Ben

Benjamin FERN

HSE Environmental Engineer
Safran Landing Systems

• M +00 (1) 859 979 1538

www.safran-landing-systems.com



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From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Sent: Tuesday, December 3, 2024 12:42 PM

To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: Safran Air Permit Renewal - Ancillary Information

C2 - Confidential

Hi Amy,

Ben is finishing-up the application forms, and we'll begin submitting those later this afternoon.

With respect to your questions in an October 25th email, I have included your original questions (in Bold) and my responses below. None of this information is being claimed as Confidential. Please don't hesitate to contact me for clarity.

The change for the 481 and 482 furnaces to only to heat treat and why that means no emissions are expected.

The 481 and 482 reactors were converted from combination reactors (Carbonization and Heat Treat processes) to Heat Treat ONLY ovens because the facility increased its Carbonization process capacity by adding 49X reactors. Since the Heat Treat process is meant solely to molecularly align the Carbon within the disks post densification (infiltration) process, there are no emissions from this process.

A description of why "reactor" is a better description for the carbonizing furnaces.

For all of the Carbonization, Infiltration, Heat Treat and Curing vessels onsite, the more appropriate term for them is "Reactor" and not "Furnace" as they have been referred to in previous permits. The term "Furnace" denotes the burning, charring or even melting of a material, and this is not the case at this site. Instead, we create chemical and/or molecular reactions in our vessels using very high temperatures (using electricity, not fuel) as the reaction catalyst.

A description of the name changes for the boilers (and any other units that need a name change) so that it is clear in the record (and we don't get confused later).

The Boilers 1, 2 and 3 will retain these names. However, Boilers 5 and 6 will be renamed Boilers 4 and 5, respectively. The Anodize Boiler #4 will now be named W&B Boiler.

A discussion of the venting emissions and why they were originally expected, but are no longer expected under normal operation.

When this emission was first calculated for the original air permit, it was done by calculating the “worst possible instance.” The previous calculation assumed that all of the process gas that was passed through the furnace during the start-up step (that has the system open to the atmosphere) was allowed to escape the system. For this air permit renewal application, this calculation was completed again, but this time better information was used to make the calculation more accurate to our system: 1) the volume of the furnace and of the piping was taken into account, 2) the ramping-up flowrate of the gas was used instead of assuming 100% process gas flows from the start, and 3) the total time that the system is open to the air was observed from the site’s equipment software (12 seconds) and used in the calculation instead of using the entire start-up step time. When these three changes were made, the results showed that not enough process gas is passed through the system at the start to reach the vent before it is switched off. From this, it was proven that no process gas is released during any CVI furnace start up, so this potential emission point may be removed.

A discussion of the lb/hr HCN limits currently in the permit, how they are below the detection limit for the testing, and what operational measures Safran takes to ensure that if “Non detect” is measured during a test, it means 0, instead of the detection limit. (e.g. destruction temps, etc.) We will be looking at whether we need those, but it needs to be in light of requirements related to how the thermal oxidizers are operated. The tpy limit will remain regardless and may be revised due to updated modeling we’ll do with this renewal once we have the calculations sorted out.

For the permit limits of Hydrogen Cyanide gas (HCN) from the thermal oxidizers, Safran has determined/calculated an emission factor based upon the following:

1. Every emissions test for each of the thermal oxidizer exhausts has shown “No Detect” levels, meaning that at the sensitivity level of the approved EPA Test Methodology used for the tests, we have never detected any level of HCN.
2. Using the detection limit of the EPA Test Methodology, we back-calculated a DE of 99.999991% for the tests, which was then used to create an emission rate. However, Safran believes the DE to be 100% because:
 1. HCN destructs fully at 1,000F;
 2. The thermal oxidizer chamber temperatures vary slightly among the units, but they are all maintained at a minimum chamber temperature of 1,700F (November 2024 emissions tests); and
 3. Safran’s environmental ethos is to ensure to the best of our ability that zero HCN is emitted into the surrounding environment, so we intentionally run our thermal oxidizers at much higher temperatures than is needed to be sure that zero HCN is emitted.

A specific listing of all equipment currently listed in EIS that needs to be removed because it no longer exists, again, just for file clarity.

Per the KY EIS for Inventory Year 2023, the following equipment/processes are to be removed as emissions sources:

EQPT0000000002 – Carbonizing Furnaces 481 and 482: These Reactors have been converted to Heat Treat-only reactors, and the Heat Treat process does not create emissions.

EQPT0000000003 – Infiltration Boilers/Furnaces: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000009 – Chemical Storage and Transfer System: This process was decommissioned and removed.

EQPT0000000010 – Developmental Equipment: This process was decommissioned and removed.

EQPT0000000012 – Infiltration Furnaces #601, 602, 603: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000021 – Infiltration Furnaces 604-609: The CVI Reactors do not emit to the environment and should not be included as emissions sources.

EQPT0000000024 – A-360 Spray Booths: This process was never installed.

A general discussion of how the infiltration furnaces + boilers (and the steps in between) is more appropriately referred to as the “Carbon Infiltration Process” and what the limiting factors are for throughput (e.g. steam). Also, an affirmative statement that there are no points in the process between the furnaces and boilers where NGE may escape or be released to the atmosphere prior to combustion in the boilers. This will help us explain in the record why we are only calculating emissions from the boilers. If possible, this should be general enough that we can include it in the record without a claim of confidentiality. Please also include a little bit about how NGE from any of the furnaces can be sent to any of the boilers, and how the facility will monitor throughput for each boiler for survey purposes.

The Carbon Vapor Infiltration (CVI) production process includes reactors, boilers, and vacuum towers as the main process drivers. The CVI production process is symbiotic in that:

1. The CVI reactors generate natural gas effluent (NGE), and the reactors require vacuum to operate;
2. The vacuum is created in the vacuum towers via steam-venturi systems,
3. The steam is produced by the boilers, and
4. The boilers burn the CVI reactor NGE (and natural gas) as fuel to generate the process steam.

The main contributor to CVI production process emissions is the boilers, and their emissions are created from the burning of the NGE and natural gas.

Thermal wells (atmospheric settling tanks) and condensate towers are also required CVI production process equipment. They also emit VOC's to the environment:

1. The thermal wells contain condensed steam and a warm vapor head space that is saturated with water and 'light' VOC's. As these thermal wells are atmospheric, the tanks breathe as varying amounts of steam is condensed, and as potentially varying amounts of water is withdrawn to the condensate towers. Small amounts of VOC's are emitted to the environment as the head space contracts.
2. The condensate towers receive the water (condensed steam) from the thermal wells, cool it for return to the process, and release some VOC's to the environment.

Even though the CVI production process comprises many reactors, boilers, vacuum towers, thermal wells and condensate towers of varying sizes and in different buildings, the entire CVI production process is interconnected – all NGE and steam have the ability to be contained in common headers. This means that the NGE produced by a single CVI reactor

can be utilized as fuel in any of the five boilers, and steam produced by any of the boilers may be used in any of the vacuum towers to create vacuum for any of the CVI reactors.

The facility tracks and records the amount of steam produced in each boiler, and this data is then used, along with natural gas usage (metered), to calculate the amount of NGE used in each boiler. Based on the total fuel usage, the facility then uses emissions factors (from emissions tests and AP-42 factors) to determine the emissions for each boiler.

I hope this helps!

Todd FOSTER

HSE Engineering Manager
Safran Landing Systems

P +00 (1) 859 817 3105 • M +00 (1) 859 479 6943

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Outlook

RE: Safran Permit App. Submitted

From FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>**Date** Thu 8/22/2024 8:55 AM**To** Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>**Cc** Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

2 attachments (2 MB)

Safran 2023AIS_Marked-up_22AUG2024.pdf; Safran-AEI-rev_01July2024_Cooling Towers.xlsx;

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

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C2 - Confidential

Good morning Amy,

I have attached a marked-up copy of Safran's 2023 AIS, as requested. I also included an Excel file that better explains the site's Cooling Towers and Condensate Towers (I expect there to be further discussion on this topic).

Given your feedback, we have decided NOT to make any changes to the EF's for the Boilers and TOX's/Carbonizing Furnaces. Once the emissions tests are completed later this year for all of these, I think we can then have a more fruitful conversation about which direction we will pursue.

I remain at your disposal for anything related to this application, and I/we will travel to Frankfort upon request to explain further our processes if needed. Also, I will gladly host a meeting at our site to explain our processes in excruciating detail. I think we have a great opportunity here and now, and I want to be sure the final permit is exactly reflective of our operations.

Thanks again for your help!

Todd

From: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>**Sent:** Monday, August 19, 2024 11:18 AM**To:** FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>**Cc:** Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>**Subject:** RE: Safran Permit App. Submitted

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Good morning Todd,

So that's a little bit of a complex question. We test for compliance and to help determine if emission factors are appropriate, but most of the time, a single test cannot replace the EF used for the PTE. This is because typically, the PTE is based on worst-case and operation at max capacity, and many times, tests are not done at max capacity, or worst-case (per 401 KAR 50:045 they are required to be done under normal conditions that are representative of the source's operations and create the highest rate of emissions, this doesn't always equal worst-case, but it depends on the operation). Also, if there is variation in process materials, a single test may not be appropriate for use in establishing the PTE, even if we do use it to demonstrate compliance. We also want to be more conservative in establishing PTE because we don't want facilities to find themselves in a situation where they are under-reporting later. So we determine how to handle stack-tested EFs on a case-by-case basis.

Typically, tests that we think should be done to replace a more generic emission factor are identified as such in the permit (e.g. "This testing shall be done to demonstrate compliance and determine emission factors"), but sometimes we neglected to use that language on older permits (we are trying to remedy that as we renew permits).

You can always ask for the use of tested value in lieu of what we have on file, I would just say make sure you only do so if the process was tested at (or near) its max capacity during the test and the process doesn't experience significant variation in feed material (or material contributing to emissions). If you know the date (or at least the year) of the test, please provide that for any EFs you are requesting so we can double check the number against the test results in our files.

You should always request a change where the test EF is higher than what we have on file.

Hopefully that helps some, sorry for writing a book, but if you need me to clarify or answer any other questions, don't hesitate to give me a call or send me another email.

Thank you,

Amy K. Tempus-Doom, PE

(she/her)

Environmental Engineer Consultant

Division for Air Quality

Permit Review Branch

300 Sower Boulevard

Frankfort, Kentucky 40601

502-782-6786

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Sent: Monday, August 19, 2024 10:11 AM

To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Subject: RE: Safran Permit App. Submitted

C2 - Confidential

Good morning Amy

I have begun to mark-up the 2023 EIS Facility general report. I have made several changes, but I am wondering about EF's. Do you want me to include the most recent emissions testing EF's for the emissions points that have been tested (i.e. thermal oxidizers and boilers)? It looks like many still have AP-42 EF's when I know we have emissions test data. Thanks!

Todd

From: FOSTER Todd (SAFRAN LANDING SYSTEMS)

Sent: Thursday, August 15, 2024 2:18 PM

To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; swashburn@eqm.com; FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Subject: RE: Safran Permit App. Submitted

C2 - Confidential

Hi Amy,

I included the March email request below, and then I added my comments (highlighted). I will have the redlined EIS Facility general report to you early next week. I apologize for how long this is taking. Thank you.

Todd

Thank you for the call this morning, as promised, here's a little more detail on the information we need/questions we need answered.

1. For the vapor degreaser, we need information regarding whether this unit meets the definition of an "affected facility" in [401 KAR 59:185](#). Specifically, whether it meets any of the definitions of a "cold cleaner", "open top vapor degreaser", or "conveyorized degreaser" as defined in Section 1.

Safran does not believe its vapor degreasers meet any of the three (3) categories/definitions you referenced in your question (see below).

Operating Process of Airless Vacuum Vapor Degreaser Equipment

1. Initial Vacuum Process

After loading parts into the vapor degreasing system, the door is then closed and sealed to the open air. The air within the degreasing chamber is then evacuated via a vacuum pump to achieve pressure of less than 5 torr.

2. Release of Solvent and Vapor

Once the vacuum is achieved within the chamber, solvent and vapor is released into the machine from the vapor supply tank. These substances then adhere as liquid to the surface area of the parts that need to be cleaned, beginning the cleaning process.

3. Cleaning by Condensation

Condensation will cause the parts to become heated during the cleaning process. The parts are then cooled and rinsed with liquid solvent to remove deposits. This cleaning and spraying cycle can be repeated a number of times, based upon operator selection, until the cleaning process is completed.

4. Solvent and Vapor Removal

During the vapor recovery process, the hot solvent vapor is removed from the degreasing chamber to the heat exchanger to be condensed. From there, it is returned to the solvent holding tank.

5. Restoration of Atmospheric Pressure

In the final phase of operation, the degreasing chamber is restored to atmospheric pressure in order to remove remaining solvent. Once atmospheric pressure is achieved, the operator is able to safely open the door and remove the clean, fully dried parts. Due to the unique methods used, there is no solvent odor or exposure risk to the operator.

**** Pollution Prevention:** Reducing pollution and emissions was a key part of Baron Blakeslee's mission. With the air and solvent never mixing within this system, the risk of solvent emissions is eliminated (see link below).

[Airless Vacuum Vapor Degreasing Basics - Baron Blakeslee](#)

2. For the needling/cut fiber (pre-form) we need information regarding whether the controls are interlocked/integral to the process in some way. If not, the PTE for this activity is the "pre-control" value.

The carbon fiber collection controls are interlocked to the process. If the production line powers up, the carbon fiber collector bound to that line will also powers up. The same holds true if the production line powers down.

3. For the chemical transfer & storage system(s), we need information regarding the applicability of [401 KAR 59:050](#) and whether they meet the definition of an "affected facility" in Section 2 of that regulation. Make sure to pay specific attention to the definition of "Petroleum Liquids".

This process was decommissioned in December 2015, and it has been completely removed.

4. For the emergency generators/fire pumps, since it was indicated on the call that these remain in one location all the time, they are stationary RICE and will be subject to [40 CFR 63, Subpart ZZZZ](#) and depending on construction date, may also be subject to [40 CFR 60, Subpart JJJJ](#). For each of these we'll need a DEP7007N, DEP7007EE, and DEP7007V form submitted with emission calculations and engine manufacturer certification if available. Please make sure to use the current version of the forms as they have changed. There's a link to them in my signature below.

Safran had submitted the appropriate forms just recently (July 2024) via the Internet portal. I can send them again if you do not have them.

5. For the Finished Disk Coating and Drying with oven (and all coating applications), we will need emission calculations not just for VOC/HAP but Particulate if the coating is applied via a spray. So any info that can be provided about those would be helpful.

The table below briefly describes each process, and I have attached the PM emissions calculations to this email ("A66 notification – PM Calculations 2024").

Description	Additional Emission Unit Information/Comments
1 Electric Curing Oven - A66 Curing (801)	Cures A66 (titanium/silica mix) onto disks; No HAPs/Non-VOC - assume no emissions
Anti-Oxidant Coating (A123)	No HAPs/Non-VOC - assume no emissions [50% water, 50% Phosphoric acid, aluminum salt (3:1)]
Anti-Oxidant Coating & Curing (A66)	No HAPs/Non-VOC - assume no emissions
Finished Disk Coating and Drying with Oven	No HAPs/Non-VOC Liquid (same as A66 and 801 curing) - assume no emissions

RFPC A66 filters:

- [24"H x 24"W x 12"D MERV 14 Microglass Single Header Extended Surface Air Filter | Fastenal](#)
- [24"W x 24"L 2-Plv Panel Dry and Tackified Sides Air Filter | Fastenal](#)
- -24x24x15 2P Spraystop SPAK SHC: 104-501-001

6. Regarding the source-wide VOC emissions, because there have been a few instances of Safran reporting VOC emissions from the facility to EIS that are greater than the 90 tpy limit (and reporting much less to FOB), we will need to reconcile this issue or move forward with a Title V permitting application. I am attaching the most recent facility general report (2022 emission data as reported in 2023), so Safran can look at what we have on file for the facility and see if there are any issues or requested changes to be noted there.

Please move forward with a Title V permit at this time.

7. Regarding the Boiler #1-#4 capacity increases, we confirmed on the call that these increases are corrections to the permit and no modifications or burner changes have occurred to the boilers.

Yes, I confirm that the Boiler #1-#4 capacity increases are corrections to the permit, and no modifications or burner changes have occurred to the boilers.

8. Regarding the RTO burner ratings – we simply need the burner ratings for the RTOs so we can calculate potential emissions from the NG combustion in the RTO. This can be in MMBTU or mmscf, either one is fine.

TOX #1 – 0.044 SCFH
 TOX #2 – 3 MMBTU/hr
 TOX #3 – 3 MMBTU/hr
 TOX #4 – 8 MMBTU/hr

From: Tempus-Doom, Amy K (EEC)

Sent: Tuesday, July 30, 2024 2:48 PM

To: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; swashburn@eqm.com

Cc: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Subject: RE: Safran Permit App. Submitted

Good afternoon,

While Babak and I appreciate this information, there is some confusion happening regarding discrepancies in the forms we received due to the lack of a cover letter. I think we need to get to a good starting place to first have these more technical discussions, and part of that goes back to getting a response to my original email and getting a marked up copy of the most recent facility general report.

In looking through historical records and such, I think that historically, Safran changed the VOC EF for 03A-Process #1 from 405.22 to 22.9 lb/ton carbon. We had accepted that, and somehow it got changed back, and we're trying to track down why that might have been. We recognize that under normal operation, the CVI furnaces will send all NGE to the boilers and control those emissions, but we must account for the potential for that NOT to happen. I have some ideas on how we can do that within the confines of our system, but I think it would be better to have those discussions on a call later.

Also, of note, many previous communications from Safran identify methane as a VOC, and include it in emission calculations as such. It is important to note that, while methane IS a GHG, and still must be accounted for, it is NOT a VOC, as far as EPA and air permitting are concerned. <https://www.epa.gov/air-emissions-inventories/what-definition-voc>

Our (Kentucky's) definitions refer to 40 CFR 52.100(s) for the definition of VOC, and it is here: <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-51/subpart-F>

This may affect previous emissions estimates for VOC.

Finally, while most of the communication DAQ has been receiving from Safran has been marked as "C2 - Confidential" it is **VERY important to note that DAQ is not and cannot treat electronic communications or submittals as confidential**. Accordingly, please do NOT send confidential information through the eForms portal or via email. Please let me know if you need to make a claim of confidentiality and I will help walk you through the process.

So, in summary, the two things we need from Safran right now are as follows:

1. A response to and clarity on each item on the original email I sent. I have attached it to this email for your convenience.
2. A marked up (redline/annotated/commented) copy of the EIS Facility general report identifying any changes/corrections Safran is requesting at this time to what we already have on file, which is also attached for your convenience. This **must** be the starting point because we are required to modify what is already in our system, we cannot start over.

Once we get this information, we can then formulate better questions, have more productive discussions, and determine further information we may need from Safran, including setting up a call/site visit.

Please let us know when we can expect these two pieces of information so we can continue moving this renewal forward.
 Thank you,

Amy K. Tempus-Doom, PE
(she/her)
Environmental Engineer Consultant
Division for Air Quality
Permit Review Branch
300 Sower Boulevard
Frankfort, Kentucky 40601
502-782-6786

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Sent: Tuesday, July 30, 2024 10:57 AM
To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: FW: Safran Permit App. Submitted

FYI

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Sent: Wednesday, July 24, 2024 4:42 PM
To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Cc: Washburn, Stephen <swashburn@eqm.com>; FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Subject: RE: Safran Permit App. Submitted

C2 - Confidential

Thank you for your prompt response Stephen.

Stephen and Babak –

With respect to Question #2, our CVI process is quite complicated, and it would be a major understatement to state or think that CVI furnaces create “emissions” under normal operations, because they do not:

- For the very rare instance in which NGE could be vented to the atmosphere during a process upset (i.e. boilers off-line), this is the only situation in which NGE is an emission. If this occurs, we have methods in place (flow meters and calculations) that would tell us how much NGE is emitted, and for this, the size of the CVI furnace could matter.
- The Natural Gas Effluent (NGE) from each CVI furnace is used as process fuel for the Boilers (burns similar to natural gas). NGE is not an emission under normal operating conditions! For site emissions calculations purposes, we quantify the amount of NGE generated and sent to the Boilers as process fuel, apply the appropriate emissions factors to this amount (from the Boiler testing results), and determine the Boiler emissions. With the emissions points being the Boilers and not the CVI furnaces, I am not certain that the size of the CVI furnaces is applicable when the State calculates emissions. This is a tricky issue to deal with, and it’s one that will most likely require far more discussion between us to determine how best to proceed.
- My Engineers and I just completed an extensive review of the CVI process to better understand the pre-cycle Venting, and we have concluded (calculations shown below) that there are zero VOC emissions to the atmosphere during the venting stage of both CVI sizes. I will be requesting to remove CVI Venting as an emissions source.

F50x CVI Gas Ramping - Per CVI Start			
Time to begin gas ramping	18	seconds	
Time to switch valves (VU119/UV114)	45	seconds	
Time to ramp:	27	seconds	
NG flow after valve switch:	1,000	nlpm	
PG flow after valve switch:	120	nlpm	
Volume of air/N2 displaced	234	(n)liters	
Volume of NG added	0	kg	
Volume of air/N2 displaced w/ NGE	23,747	liters	
Furnace void space when full	27,791	liters	
Piping void space to displace	6,199	liters	
Total void space to displace	33,990	liters	
NGE to atm.	-10,243	liters	Therefore we are not sending any NGE to the atm., during initial ramp-up.

F60x CVI Gas Ramping - Per CVI Start		
Time to begin gas ramping	18	seconds

Time to switch valves (VU119/UV114)	45	seconds
Time to ramp:	27	seconds
NG flow after valve switch:	1,000	nlp/m
PG flow after valve switch:	120	nlp/m
Volume of air/N2 displaced	234	(n)liters
Volume of NG added	0	kg
Volume of air/N2 displaced w/ NGE	23,747	liters
Furnace void space when full	13,066	liters
Piping void space to displace	62,858	liters
Total void space to displace	75,924	liters
NGE to atm.	-52,177	liters

Therefore we are not sending any NGE to the atm., during initial ramp-up.

The Safran Team is continuing to analyze our processes and their potential emissions (both types and volumes). To this end, the application materials you now have are far more complete/accurate than what Safran has sent back in 2017, but I strongly believe we can do better. Safran has dedicated many more people to analyzing the site's emissions (both potential and actual), and we are taking a hard look at every process to make sure the information we provide the State is the best we have (or can get). I fully expect there to be many more updates over the coming months to the information we have provided to this point.

I would very much like to explain face-to-face in far greater detail many of our processes that difficult to understand through application materials. In the past, DEP personnel have come to the site for a half day or training and discussions. However, I can also meet you in Frankfort if that's a better option for you. If you are open to a face-to-face meeting, just let me know.

Todd

From: Washburn, Stephen <swashburn@eqm.com>
Sent: Wednesday, July 24, 2024 1:32 PM
To: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Cc: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Subject: RE: Safran Permit App. Submitted

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Todd, Babak,

- Here is the form DEP7007A which I originally provided as part of the permit application package. Hopefully, this contains all of the information that you need.
- Regarding Question 2. I have no background on the individual furnace capacities. Also, I do not have access to the KY EIS for the facility so I cannot see what is reported there for the different furnaces. Therefore, the information in KY EIS should probably take precedence over the number provided on form DEP7007B.

Many Thanks,
Stephen

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Sent: Wednesday, 24 July, 2024 07:22
To: Washburn, Stephen <swashburn@eqm.com>
Cc: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Subject: FW: Safran Permit App. Submitted

⚠ CAUTION: EXTERNAL SENDER *This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.*

C2 - Confidential

Good morning Stephen,

Please see the email below from the State regarding the permit application. Please address Questions 1 and 2, and send me the updated forms/information so that I may forward them on. I am out of the office most of next week, but I will be checking my emails. I will take care of Questions 3 and 4.

Thanks.

Todd

From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Sent: Tuesday, July 23, 2024 3:28 PM
To: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: RE: Safran Permit App. Submitted

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Hi Todd,
Thanks for the update. Early part of August would be fine.
Babak

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Sent: Tuesday, July 23, 2024 2:30 PM
To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: Re: Safran Permit App. Submitted

Good afternoon,

I am out of the office TH and FR this week and all of next week. If not too big of a request, may I respond upon my return? Thank you.

Todd

Sent from my iPhone

On Jul 22, 2024, at 1:10 PM, Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov> wrote:

CAUTION: This message originated from an outside organization. In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Good afternoon Todd,
Thank you for submitting the renewal application forms. There are few items that require clarification for the Division to move forward with processing the renewal application and renewing the permit. Please provide the following information:

1. Please submit the DEP7007A Form for the boilers. That way I can identify the capacity and the model number of each boilers and match it with the correct Infiltration Furnaces.
2. Are the Infiltration Furnaces capacities for each group (i.e Furnaces 501 thru 509 or 601 thru 603) the same? Historically, they are different. In the DEP7007B form Safran submitted, the total process weight rate of the all 18 furnaces is listed as 0.068 tons/hr, but if you take a look at the Kentucky Emission Inventory System (EIS) for the facility, you will see that each group has a different max capacities. Please provide additional information on this.
3. Please provide more info on how the VOC emission factor was calculated for the Infiltration furnaces and calculation methodology for VOC hourly/Annual emission calculations (sample calculations).
4. I have the same question as above (2 and 3) for the Carbonizing Furnaces in regards to thruput, and I also need HCN emission factor/hourly/annual emission calculations. Please provide CO and NOx emission calculations, or let me know if something has changed in the process that the calculations currently on file in EIS are no longer appropriate for these units.

Thank you
Babak

From: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>
Sent: Thursday, July 11, 2024 4:50 PM
To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Subject: Safran Permit App. Submitted

C2 - Confidential

Hi Babak,

I submitted our air permit renewal application today, and it is definitely more accurate than what the State has received in the past. However, don't hesitate to contact me directly with any questions or concerns. I want this to be a very well written permit, and I'll do everything I can to facilitate this process.

Thanks for your understanding!

Todd

<image001.png>

Todd FOSTER

HSE Engineering Manager
Safran Landing Systems

P +00 (1) 859 817 3105 • M +00 (1) 859 479 6943

www.safran-landing-systems.com

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<image003.jpg> <image005.gif><image006.gif><image007.gif>
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<AI 137 2022 survey 2-19-2024.pdf>

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Outlook

Thermal Well Emissions

From FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Date Thu 4/10/2025 2:51 PM

To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Cc FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

 1 attachment (28 KB)

Thermal Well Emissions.xlsx;

This Message Originated from Outside the Organization

This Message Is From an External Sender.

Report Suspicious

Hey there,

We have completed our analysis and calculations for the B500 and B600 Thermal Wells (attached). The total emissions of all VOC's is 1.8e-6 tpy. Yes it is a very small number, and we expected it to be, so this is reassuring.

We will include this in the appropriate Form and get it submitted properly if you are ok with this analysis. Let us know if you require anything else. Thanks!

Todd

Todd FOSTER

HSE Engineering Manager

Safran Landing Systems

P +00 (1) 859 817 3105 • M +00 (1) 859 479 6943

www.safran-landing-systems.com



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October 22, 2025

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Air Permit Support Section
300 Sower Boulevard
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC - Permit Application
Source ID: 21-015-00125
AI#: 137

Dear Sir or Madam:

Safran Landing Systems Kentucky LLC (SLS) is submitting the enclosed application for the addition of a new Carbonization Reactor (494) to the High Temperature Carbon Manufacturing Area, located at our facility at One Carbon Way, Walton, Kentucky 41094. This will be a minor permit revision under KAR 52:030 of Section 14. Reactor 494 will be identical to existing carbonization reactors 490 - 493. Process exhaust will be ducted to Thermal Oxidizer #4 for destruction. No more than two reactors (492, 493, or 494) will be exhausting to Thermal Oxidizer #4 at one time.

SLS is also requesting to leave the A360 Spray Booth (Emission Unit 23) in the current permit application. The A360 operation was originally permitted in the F-13-023 R4 permit. The mixing booth was installed, but the process was never operated. SLS is requesting that this activity remain in the permit and construction of the A360 spray booth is permitted. The A360 coating will eventually replace the A66 coating.

Lastly, SLS requests to add the Wheels and Brakes Rework Oven as an insignificant activity. The rework oven is used for touch-up drying of painted wheels and piston assemblies. See the attached emission calculation sheet for the PTE calculations. This will be a minor permit revision under KAR 52:030 of Section 14.

Carbonizing Reactor 494

This permit package consists of the following:

- DEP7007B Manufacturing or Process Operations
- DEP7007GG Control Equipment
- DEP7007N Source Emissions Profile

- DEP7007V Applicable Requirements

Emission Units

SLS is requesting to install the following new emission units:

- Carbonizing Reactor #494 controlled by thermal oxidizer #4

SLS is requesting to complete installation of the following existing emission units:

- A360 Spray Booth

The original and two copies of the application for construction of the new emission unit is enclosed. If you have any additional questions, please contact me at 859-959-1538

Sincerely,
Safran Landing Systems Kentucky LLC

FERN Benjamin
(SAFRAN LANDING SYSTEMS)
Date: 2025.10.22 11:59:47
-04'00'

Digitally signed by FERN Benjamin (SAFRAN LANDING SYSTEMS)

Benjamin F. Fern

Enclosures

Page 1 of 3

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU03	Carbonizing Reactor 494	Carbon Brake Pre-Forms	28519.2	lbs/batch	0.0595	Carbonized Brake Pre-Forms	75	ton/yr.	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Section B.3: Notes, Comments, and Explanations

Reactor 494 is indential to reactors 492 and 493. For C2/2/5/3 Reactors (490,491,492,493,494) the process cycle time is 84 hrs this includes loading/unloading

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007GG

Control Equipment

Additional Documentation

Complete Sections GG.1 through GG.12, as applicable

Attach manufacturer's specifications for each control device

Complete DEP7007AI

Source Name: Sfran Landing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023-R4

Agency Interest (AI) ID: 137

Date: 10/21/2025

Section GG.1: General Information - Control Equipment																	
Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/Serial #	Date Installed	Inlet Gas Stream Data For <u>All</u> Control Devices						Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers <u>Only</u>			Equipment Operational Data For <u>All</u> Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68°F)	Average Particle Diameter (µm)	Particle Density (lb/ft³) or Specific Gravity	Gas Density (lb/ft³)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H ₂ O)	Pollutants Collected/Controlled	Pollutant Removal (%)	
TOX#4	Thermal Oxidizer #4	n/a	PCC	TO System / 3990	4/1/2019	1700	550	n/a	n/a	158.7	0.1	HCN, NH3, CO2, H2O, CO	Venturi Exhaust Blower	n/a	HAP's, VOC's	99.999991	

Identify all Emission	Identify
-----------------------	----------

[illegible]

Section GG.12: Notes, Comments, and Explanations	

Additional Documentation

Complete DEP7007AI

Section N.1: Emission Summary

Section N.2: Stack Information

Section N.3: Fugitive Information

Section N.4: Notes, Comments, and Explanations

Safran Landing Systems LLC

Source Name:

21- 015-00125

KY EIS (AFS) #:

F-13-023 R4

Permit #:

Agency Interest (AI) ID:

137

10/21/2025

N.1: Emission Summary

[illegible]

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C-TO4	Reactor 443, Reactor 492, Reactor 493, Reactor 494	2.5	80.73	860	38.92297	-84.60817	2056	1277	10.9

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations	

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999 DEP7007V Applicable Requirements and Compliance Activities ___ Section V.1: Emission and Operating Limitation(s) ___ Section V.2: Monitoring Requirements ___ Section V.3: Recordkeeping Requirements ___ Section V.4: Reporting Requirements ___ Section V.5: Testing Requirements ___ Section V.6: Notes, Comments, and Explanations Additional Documentation ___ Complete DEP7007AI							
Source Name: Safran Landing Systems, LLC KY EIS (AFS) #: 21- 015-00125 Permit #: F-13-023 R4 Agency Interest (AI) ID: 137 Date: 10/21/2025							
Section V.1: Emission and Operating Limitation(s)							
Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU03	Carbonizing Reactors	401 KAR 59.010 401 KAR 63.020	HCN	0.7 ton/yr. site wide	n/a	n/a	Compliant while meeting permit requirements

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU03	Carbonizing Reactors	HCN	401 KAR 63-020	Temperature; Furnace Process	Thermal oxidizer operating temperature; Process rate & op. hours of furnaces

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU03	Carbonizing Reactors	HCN	401 KAR 63:020	HCN; Process Parameters; Therm. Ox. Temperature	HCN emissions; Furnace process rate & op. hours; Thermal oxidizer operating temperature

Section V.4: Reporting Requirements					
Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU03	Carbonizing Reactors	HCN	401 KAR 63:020	HCN; Process Parameters; Temperature Excursions	Semi-annual reports of monthly HCN emissions; Furnace process rate & op. hours; 3-Hour periods Thermal Oxidizer temperature remains below demonstrated compliance temperature

Section V.5: Testing Requirements					
Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing

Section V.6: Notes, Comments, and Explanations	

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 03 (03) Carbonizing Furnaces ~~Furnaces~~ Reactors

Description:

This emission point consists of ~~nine (9)~~ Eight (8) electric carbonizing ~~furnaces~~ reactors: 441, 442, ~~481, 482~~, 490, 491, 492, 493, ~~494~~ and 443. Pre-forms from the needling and cutting machines are carbonized in ~~Furnaces~~ Reactors 441, 442, and 443 before undergoing a second stage carbonization process in the ~~furnaces~~ Reactors ~~481, 482~~, 490, 491, 492 ~~or 493~~ or 494. The output rate of carbonized brake pre-forms is approximately 2419.5 TPY. Four (4) thermal oxidizers control the emissions of these ~~furnaces~~ reactors.

Construction commenced for: Thermal Oxidizer #1 - September 1998,

Thermal Oxidizer #2 - January 2001,

Thermal Oxidizer #3 - January 2008, and

Thermal Oxidizer #4 - 2017.

Carbonizing Furnaces Reactor 441, 481, and 482	Control Device, Thermal Oxidizer #1
Carbonizing Furnaces Reactors 490 and 491	Control Device, Thermal Oxidizer #2
Carbonizing Furnaces Reactors 442	Control Device, Thermal Oxidizer #3
Carbonizing Furnaces Reactors 443, 492, and 493 , and 494	Control Device, Thermal Oxidizer #4

APPLICABLE REGULATIONS:

401 KAR 59:010, New process operations.

STATE-ORIGIN REQUIREMENTS:

401 KAR 63:020, Potentially hazardous matter or toxic substances.

1. Operating Limitations:

- a. Pursuant to 401 KAR 63:020, no owner or operator shall allow any affected facility to emit potentially hazardous matter or toxic substances, including HCN, in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants.
- b. For the thermal oxidizers, the permittee shall meet the temperature operating limits at all times (after establishing limits through testing).

Compliance Demonstration Method:

- i. Records shall be kept of the maintenance activities.
- ii. To show compliance with 63:020, the permittee shall follow the attached OM&M [Emergency Procedure for Incinerator Issues (Carbonization Only)] in Appendix A.

2. Emission Limitations:

- a. Pursuant to 401 KAR 59:010, Section 3, opacity shall not exceed twenty (20) percent.
- b. Pursuant to 401 KAR 63:020, total, site-wide emissions of HCN shall not exceed 0.7 tons/yr.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

In addition:

For Thermal Oxidizer #1: HCN emissions shall not exceed 5.96E-09 lbs/hr

For Thermal Oxidizer #2: HCN emissions shall not exceed 1.57E-4 lbs/hr

For Thermal Oxidizer #3: HCN emissions shall not exceed 5.96E-09 lbs/hr

For Thermal Oxidizer #4: HCN emissions shall not exceed 0.156 lbs/hr

- c. Pursuant to 401 KAR 59:010, Appendix A, The emissions of particulate matter shall not exceed the allowable rate limit as calculated by the following equations using the process weight rate (in units of tons/hr).

For process rates up to 1,000 lbs/hr: $E = 2.34$

For process rates up to 60,000 lbs/hr: $E = 3.59 \times P^{0.62}$

For process rates in excess of 60,000 lbs/hr: $E = 17.31 \times P^{0.16}$

For the equations: E = rate of emission in lbs/hr and P = process weight rate in tons/hr (monthly throughput in tons/monthly hours of operation).

Compliance Demonstration Method:

- i. This affected facility shall be assumed to be in compliance with the above opacity and mass emission standards as long as the control equipment is operating, and properly maintained, in accordance with the manufacturer's recommendations.
- ii. This affected facility shall be assumed to be in compliance with 401 KAR 63:020 by meeting all requirements listed in **1. Operating Limitations**, above, **3. Testing Requirements**, below, and in the OM&M [**Emergency Procedure for Incinerator Issues (Carbonization Only)**] in Appendix A (Refer to **2.b Emission Limitations**, above).
- iii. Refer to permit SECTION D – SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS, for information about additional source-wide emission limitations and testing.
- iv. Refer to permit SECTION E – SOURCE CONTROL EQUIPMENT REQUIREMENTS, for additional information about requirements for operation of the control equipment.

3. Testing Requirements:

- a. Testing of the thermal oxidizers shall be performed using method OTM 29 and/or other methodologies approved by the Division for determination of HCN emission (hydrogen cyanide) for the thermal oxidizer units that control HCN.
- b. For the Thermal Oxidizer #4, the permittee shall perform testing of the oxidizer within 365 days of the installation of all three furnaces (F443, F492, and F493) authorized under F-13-023 R3. The C1 (Carbonization Stage 1 process) cycle furnace shall be tested within 180 days of the installation of the final carbonizing furnace authorized by permit F-13-023 R3. Should construction of the new furnaces pause for more than 7 months (215 days) or it is determined that any furnace permitted under F-13-023 R3 will not be constructed/installed, the permittee shall notify the Division and conduct testing on the

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

completed furnaces and Thermal Oxidizer #4 within 180 days of the most recently installed furnace becoming operational.

- c. Results of the following testing shall be submitted to the Division to demonstrate compliance with 401 KAR 63:020.
 - i. Thermal Oxidizer #1 exhaust gas stream shall be tested for HCN under conditions deemed as 'worst case' with C1 and C2/2.5/3 cycles running simultaneously. The worst case scenario shall be supported by valid data and detailed in the testing protocol. The test shall consist of three, one-hour runs.
 - ii. Thermal Oxidizer #2 inlet gas stream shall be tested for HCN with a C2/2.5/3 cycle running. The test shall consist of three, one-hour runs.
 - iii. Thermal Oxidizer #3 inlet gas stream will be tested for HCN with a C1 cycle running. The test shall consist of three, one-hour runs. The test will consist of three, one-hour runs.
 - iv. Thermal Oxidizer #4 inlet and exhaust gas streams shall be tested for HCN under conditions deemed as 'worst case' with C1 and C2/2.5/3 cycles running simultaneously. The worst case scenario shall be supported by valid data and detailed in the testing protocol. The test will consist of three, one-hour runs.
- d. A testing protocol shall be submitted to ensure testing will be adequate to establish calculation for PTE.
- e. The permittee shall conduct performance testing every five (5) years following the initial compliance test for each of the thermal oxidizers that destructs HCN.
- f. Refer to permit SECTION G – GENERAL PROVISIONS, item 5. Testing Requirements, for additional requirements.
- g. The permittee shall also operate the thermocouple in **4.c. Specific Monitoring Requirements**, below, during all testing.

4. Specific Monitoring Requirements:

- a. The permittee shall monitor the monthly process rate and hours of operation for the furnaces.
- b. The permittee shall monitor the operating temperature of each thermal oxidizer on a continuous basis when the associated carbonizing furnaces are in operation. Thermal Oxidizer #4 shall be designed/chosen to have a thermocouple located within 10 feet of the combustion chamber to monitor operating temperature of the chamber.
- c. The permittee shall install an additional thermocouple to monitor the operating temperature for the combustion chamber on the Thermal Oxidizer #3. This thermocouple will be within approximately 10 feet of the combustion chamber and will include a data logger for

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

recording temperature on a continuous basis.

5. Specific Recordkeeping Requirements:

- a. The permittee shall keep records of hydrogen cyanide emissions monthly.
- b. Thermal oxidizer combustion operating temperatures shall be recorded on a continuous basis when associated carbonizing ~~furnaces~~ **reactors** are in operation.
- c. Records of repair and maintenance shall be kept for each thermal oxidizer.
- d. Refer to Compliance Demonstration Method under **1. Operating Limitations**, above, for additional recordkeeping requirements.

6. Specific Reporting Requirements:

- a. The permittee shall identify, record, and submit a written report to the Division's Florence Field Office of each instance in excess of 3 hours during which the average operating temperature of the thermal oxidizer used to control emissions from an affected facility remains more than 28° C (50° F) below that at which compliance was demonstrated during the most recent measurement of thermal oxidizer efficiency. If no such periods occur, the permittee shall state this in a report to be submitted semiannually.
- b. Refer to permit SECTION F – MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS.
- c. Refer to permit SECTION G – GENERAL PROVISIONS, item G.4.b, regarding construction notifications.

Rework Oven

	lbs/gallon	gallons per part	parts per year	PTE ton/year
Worst Case PM	10.99	0.04	156	0.03429
Worst Case VOC	7.486	0.066	156	0.03854
Worst Case Xylene	1.256	0.001	156	0.00010
Worst Case Ethylbenzene	0.419	0.001	156	0.00003
Worst Case MEK	1.359	0.04	156	0.00424
Worst Case Stronium Chromate	6.797	0.04	156	0.02121
Worst Case Barium Chromate	0.136	0.04	156	0.00042

$(\text{Parts/yr} * \text{gallons/part} * \text{lbs/gallon}) / 2000$

2-3 parts/week

156 parts per year

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD

Insignificant Activities

- ☐ Section DD.1: Table of Insignificant Activities
☐ Section DD.2: Signature Block
☐ Section DD.3: Notes, Comments, and Explanations

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-0025

Permit #: F-13-023-R4

Agency Interest (AI) ID: 137

Date: 10/21/2025

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA 36	Electric Rework Oven (60KW) (3 parts/week)	W&B Rework Oven	401 KAR 63:010	PM 0.03 tons; VOC 0.04 tons; xylene 0.0001 tons; ethylebenzene 0.00003 tons; MEK 0.004 tons; Strontium Chromate 0.0212 tons; Barium Chromate 0.00042 tons

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:

P. Garnier

Authorized Signature

Philippe GARNIER

Type/Print Name of Signatory

23 OCT 2025

Date

Title of Signatory

Section DD.3: Notes, Comments, and Explanations

Condensate Tower VOC and HAPs										
Tower Information					PTE Calculation					
Description			Flowrate		Total HAPS			VOC ²		
Name	ID #	Contact/Non-Contact	Gal./Min	million gallon/year	PPM	lb/hr	ton/yr	PPM	lb/hr	ton/yr
Condensate #1 (A)	131T01	Contact	761	399.98	108.70	8.28E-02	0.3626	19.90	1.52E-02	0.0664
Condensate #1 (B)	131T02	Contact	761	399.98	108.70	8.28E-02	0.3626	19.90	1.52E-02	0.0664
Condensate #2 (C)	131T03	Contact	500	262.80	108.70	5.44E-02	0.2382	19.90	9.96E-03	0.0436
Condensate #2 (D)	131T04	Contact	500	262.80	108.70	5.44E-02	0.2382	19.90	9.96E-03	0.0436
Condensate #2 (E)	131T05	Contact	500	262.80	108.70	5.44E-02	0.2382	19.90	9.96E-03	0.0436
Condensate #3 (F)	131T06	Contact	660	346.90	108.70	7.18E-02	0.3145	19.90	1.31E-02	0.0576
Condensate #3 (G)	131T07	Contact	660	346.90	108.70	7.18E-02	0.3145	19.90	1.31E-02	0.0576
Condensate #3 (H)	131T08	Contact	660	346.90	108.70	7.18E-02	0.3145	19.90	1.31E-02	0.0576
Main Plant Cooling #3 (A)	112T03A	Contact	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694
Main Plant Cooling #3 (B)	112T03B	Contact	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694
Main Plant Cooling #3 (C)	112T03C	Contact	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694
Main Plant Cooling #3 (D)	112T03D	Contact	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694
Main Plant Cooling #3 (E)	112T03E	Contact	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694
Ton/Yr = (million Gallon/Yr * 8.34) * (ppm/1000000)/2000 Lb/Hr = (ton/yr*2000)/8760					Total	1.60E+00	7.0101	--	3.87E-02	1.2834
PPM is from average of 2001, 2003, and 2006 water sampling.										

Condensate Tower VOC and HAPS										
Tower Information			PTE Calculation						Size LxW (ft)	Diameter
Description	Flowrate		Total HAPS			VOC ²				
Name	Gal./Min	million gallon/year	PPM	lb/hr	ton/yr	PPM	lb/hr	ton/yr		
Condensate #1 (A)	761	399.98	108.70	8.28E-02	0.3626	19.90	1.52E-02	0.0664	11.8 x 11.8 ft	-
Condensate #1 (B)	761	399.98	108.70	8.28E-02	0.3626	19.90	1.52E-02	0.0664	11.8 x 11.8 ft	-
Condensate #2 (C)	500	262.80	108.70	5.44E-02	0.2382	19.90	9.96E-03	0.0436	11.8 x 11.8 ft	-
Condensate #2 (D)	500	262.80	108.70	5.44E-02	0.2382	19.90	9.96E-03	0.0436	11.8 x 11.8 ft	-
Condensate #2 (E)	500	262.80	108.70	5.44E-02	0.2382	19.90	9.96E-03	0.0436	11.8 x 11.8 ft	-
Condensate #3 (F)	660	346.90	108.70	7.18E-02	0.3145	19.90	1.31E-02	0.0576	11.8 x 11.8 ft	-
Condensate #3 (G)	660	346.90	108.70	7.18E-02	0.3145	19.90	1.31E-02	0.0576	11.8 x 11.8 ft	-
Condensate #3 (H)	660	346.90	108.70	7.18E-02	0.3145	19.90	1.31E-02	0.0576	11.8 x 11.8 ft	-
Main Plant Cooling #3 (A)	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694	13.5 x 20.5 ft	14 ft
Main Plant Cooling #3 (B)	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694	13.5 x 20.5 ft	14 ft
Main Plant Cooling #3 (C)	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694	13.5 x 20.5 ft	14 ft
Main Plant Cooling #3 (D)	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694	13.5 x 20.5 ft	14 ft
Main Plant Cooling #3 (E)	1,942	1020.72	108.70	2.11E-01	0.9253	19.90	3.87E-02	0.1694	13.5 x 20.5 ft	14 ft
Ton/Yr = (million Gallon/Yr * 8.34) * (ppm/1000000)/2000 Lb/Hr = (ton/yr*2000)/8760			Total	1.60E+00	7.0101	--	3.87E-02	1.2834		
PPM is from average of 2001, 2003, and 2006 water sampling.										



RE: Cooling towers X and Y length data

From FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Date Wed 10/15/2025 5:23 PM

To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

This Message Originated from Outside the Organization

This Message Is From an External Sender.

Report Suspicious

Babak,

For Main plant #3 towers 1-5 the diameter should be 12 ft. An elevation of 25 ft is correct.

For condensate 1-8 they are 11.8 ft x 11.8 ft with and elevation of 25 feet. The equivalent diameter of 11.8 X 11.8 is 12.9ft. The 13.11ft must have been a math error on my end.

Thanks

Ben

Benjamin FERN

Environmental Engineer | Safran Landing Systems | HSE

M (859)-979-1538

1 Carbon Way

Walton, Kentucky 41094

www.safran-group.com



From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

Sent: Wednesday, October 15, 2025 11:03 AM

To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Subject: RE: Cooling towers X and Y length data

CAUTION: THIS MESSAGE COMES FROM OUTSIDE OF SAFRAN.

In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Thanks Ben, in the previously submitted forms, the Main Plant tower's diameter and stack height were listed as 12 ft and 25 ft, respectively. The condensate tower's stack diameter was noted as 13.11 ft, with a stack height of 25 ft. However, I see that the attached form shows different measurements. Could you please double-check and confirm which values are correct?

Thank you again

Babak

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Sent: Tuesday, October 14, 2025 2:21 PM
To: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Subject: RE: Cooling towers X and Y length data

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Babak,

Attached are the length and width measurements for the contact cooling towers. Condensate towers 1-8 have rectangular exhausts, Main plant 3 1-5 have circular exhausts but I've included the base l x w measurements as well. Do you need heights for these?

Also, I will have the information for 494 and A360 to you by the end of this week.

Let me know if you need anything else.

Thanks

Ben

Benjamin FERN
Environmental Engineer | Safran Landing Systems | HSE
M (859)-979-1538
1 Carbon Way
Walton, Kentucky 41094
www.safran-group.com



From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Sent: Thursday, October 9, 2025 12:20 PM
To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Subject: Cooling towers X and Y length data

CAUTION: THIS MESSAGE COMES FROM OUTSIDE OF SAFRAN.

In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Hi Ben,

I believe this should be the final set of information—the X and Y length data needed for modeling. This applies only to the cooling towers with HAP emissions (Main Plant and Condensate Towers). Please email me the info at your earliest convenience, or by October 23, 2025.

Thank you for your help,

Babak

#

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#

APPENDIX A

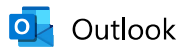
OM&M - Emergency Procedure for Thermal Oxidizer Issues (Carbonization Only)

If there is a facility-wide power interruption or a Thermal Oxidizer-specific malfunction:

1. Thermal oxidizers will automatically shut down or go off-line.
2. The control signal 'authorization' from the thermal oxidizer to the respective reactor(s) is lost.
3. The respective reactor(s) will discontinue heating until control signal 'authorization' is re-gained.
4. All carbon plant thermal oxidizers (#1 – #4) may be operated on emergency power supplied by the Carbon plant's emergency diesel generators. This enables the facility to quickly re-start thermal oxidizer #2 and #4 (490/491 and 492/493/494– C2/2.5/3 cycle reactors) to minimize process gas emissions (minimal delay).
5. After a facility-wide power interruption, **and if the pressure increases in the 441/442/443 reactors**, process gases from will briefly (<30 seconds) vent to the thermal oxidizer stack. After this brief diversion, the reactor extraction fans are re-started and the process gases will be routed back to the thermal oxidizer destruction chamber. The thermal oxidizer will be re-started when it is safe to do so, usually within ~70 minutes.
6. After a facility-wide power interruption, **and if the pressure in the 441/442/443 reactors does not increase**, process gases will continue to be routed through the thermal oxidizer combustion chamber instead of through a vent to the stack (bypassing the combustion chamber) when control signal 'authorization' from the thermal oxidizer is lost. This is to take advantage of residual thermal oxidizer heat to further combust process gases. The thermal oxidizer will be re-started when it is safe to do so, usually within ~70-80 minutes.
7. Process gases from 490/491 and 492/493/494 (C2/2.5/3 cycle reactors) will vent to the building roof until the respective thermal oxidizer is online.
8. Maintenance and Operations personnel will immediately investigate the cause of the thermal oxidizer failure (if not already apparent as in a facility-wide power failure).
9. Once the problem is remedied, thermal oxidizers #1, #3 & #4 will be re-started 80 minutes after the control signal authorization was lost (this time delay is to ensure highly flammable process gases have not collected in the thermal oxidizer chamber, thus mitigating an explosion risk when the thermal oxidizer burner is lit). Thermal oxidizer #2 may be re-started immediately after the problem is remedied.
10. The C1 process reactor exhaust lines were outfitted with heat tracing to minimize the build-up of residual particulates and tars inside the lines. The lines are cleaned no less often than every 30 cycles to help assure a high level of safety.
11. Regular preventive maintenance is performed on the thermal oxidizers, which includes, but is not limited to:
 - Inspection and cleaning or replacement of air and water filters
 - Inspection of thermocouples and flame detection sensors (i.e. photo-eyes)
 - Visual inspection and cleaning of the electrical boxes and control circuitry (including wiring, controllers, circuit boards and associated electronics)
12. Facility maintains stock levels of critical thermal oxidizer parts in order to replace malfunctioning equipment in a timely manner. For parts not having physical contact with the process gas stream, they will receive immediate attention in their repair or replacement (the actual time

depends greatly on the complexity of the issue). For parts having physical contact with the process gas stream, any repair work must wait a minimum of ~70-80 minutes before starting.

13. Other procedures are kept on site available for inspection.



RE: Locations

From FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Date Wed 5/14/2025 11:23 AM
To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

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Report Suspicious

Babak,

See below for building dimensions.

And building dimensions where the boilers, reactors and painting lines are located

Building Dimensions

Name/ID/Description of Building (if applicable)	Height (ft)	Width (ft)	Length (ft)	Comments
Building 3 - Wheels & Brakes	25	205	550	Paint Line
Building 1 – Carbon	60	250	360	Reactors 441, 442, 490,491, 50x, 601, 602, 603
Building 5 - Carbon	80	120	280	Reactors 443, 492,493,494, 604-609
Boiler House 1/2	20	40	70	Boilers 1&2
Boiler House 3	20	32	55	Boiler 3
Boiler House 4/5	20	60	100	Boilers 4 &5

Still working on the paint line acfms

Thanks

Ben

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RE: Locations

From FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

Date Wed 5/14/2025 10:52 AM

To Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>

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Babak,

Here are the property boundaries..

Still working on the rest.

Coordinates of the Plant Property Boundary in UTM's

NW Corner	38.925782 -84.610223
NE Corner	38.925409, -84.605318
SE Corner	38.922221, -84.604979
SW Corner	38.922722, -84.610644

Thanks

Ben

#

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FW: BAC Drift Eliminator Documentation

From FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>

Date Wed 3/26/2025 4:29 AM

To Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>; Anderson, Ryan (EEC) <ryana@ky.gov>

Cc KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>

 1 attachment (817 KB)

Condensate Towers_BAC Brochure_Drift.pdf;

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

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Please see the attached spec. sheet (including drift loss on p.6) for our condensate towers.

From: SAMPSON Jay (SAFRAN LANDING SYSTEMS) <jay.sampson@safrangroup.com>

Sent: Tuesday, March 25, 2025 11:21 AM

To: FOSTER Todd (SAFRAN LANDING SYSTEMS) <todd.foster@safrangroup.com>; FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>; KUNTZ Yann (SAFRAN LANDING SYSTEMS) <yann.kuntz@safrangroup.com>; MOORHEAD Ian (SAFRAN LANDING SYSTEMS) <ian.moorhead@safrangroup.com>

Subject: BAC Drift Eliminator Documentation

Jay SAMPSON

Reliability Engineering Manager | Central Engineering
Safran Landing Systems

P (859) 817-3076 • M (859) 803-2562

www.safran-landing-systems.com



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ISO 9001
COMPANY



SERIES V COOLING TOWERS

COOLING
TOWERS

EVAPORATIVE
CONDENSERS

CLOSED CIRCUIT
COOLING

THERMAL
STORAGE



Baltimore Aircoil

ONE OF THE **Amsted**
INDUSTRIES



Thermal Performance Certified by the Cooling Technology Institute

Bulletin S282/1-OGA

BAC Certified Quality and Performance

Serving the Industry Since 1938

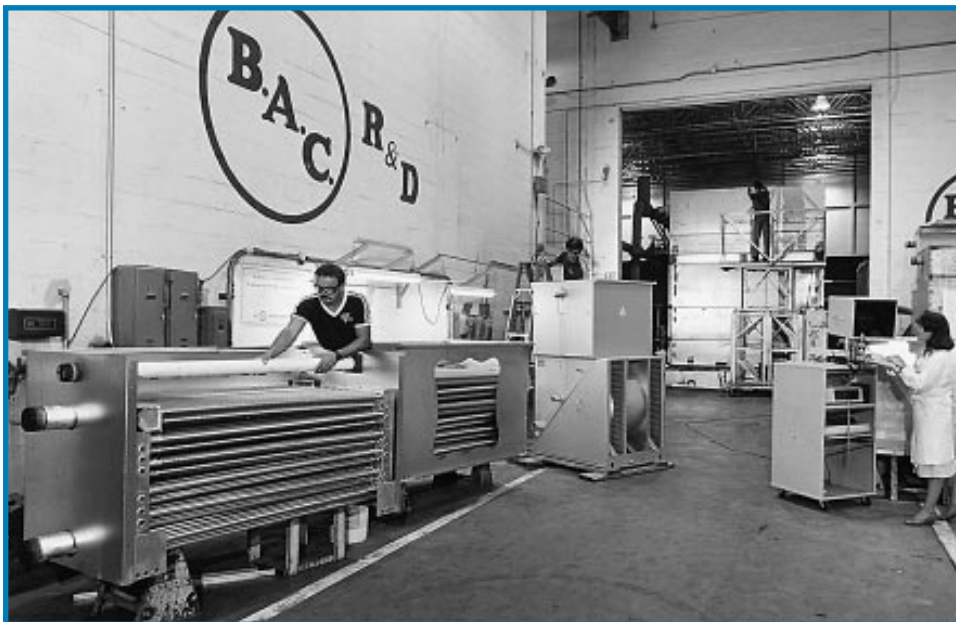
Founded in 1938, Baltimore Aircoil Company specializes in the design and manufacture of evaporative cooling and heat transfer equipment. The superior quality and performance benefits of BAC products are the result of a continuing research and development program and years of engineering experience. The design and construction innovations developed by BAC engineers offer more installation flexibility and easier maintenance plus longer, more reliable, and cost effective operation. Every BAC Series V Cooling Tower comes with a five year mechanical equipment warranty and the BAC commitment of customer satisfaction.

Research and Development

BAC maintains the industry's most advanced cooling tower research and product development facility where a broad range of environmental and operating conditions are simulated to evaluate material and component performance. After new concepts are screened by computer modeling, tests are conducted on prototype modules used in conceptual development as well as full scale operating cooling towers.

In addition to controlled environmental testing, a broad range of material and component development programs are conducted. These programs include fan development, dynamic and static stress evaluations, accelerated aging and corrosion testing, hydraulic tests and wind tunnel tests.

The BAC research and development program has resulted in over a hundred patents and the most complete line of proven evaporative cooling products in the industry.



Cooling tower research and development programs are conducted at BAC's 25,000 square foot testing facility.

ISO 9001 Certification

ISO 9001 Certification guarantees the consistently high quality of Series V Cooling Towers.



It confirms BAC's commitment to quality assurance and reaffirms that BAC meets international standards set for management principles, designs, closed-loop corrective action, training and documentation control in all of its engineering and manufacturing operations.

Exclusive CTI Performance Certification

The thermal performance of BAC Series V Cooling Towers has been certified by the Cooling Technology Institute in accordance with its standard STD-201. CTI Certification assures that the thermal capacities set forth in this brochure accurately reflect actual cooling tower performance and eliminates the need for costly individual cooling tower testing. BAC is the only manufacturer of forced draft centrifugal fan cooling towers whose thermal performance is independently certified.

NOTE: The Cooling Technology Institute (CTI) is a nonprofit self-governing technical association of manufacturers, users, and suppliers of evaporative cooling equipment, and engineering firms having an interest in water conservation. It is dedicated to improving the technology, design, performance, and maintenance of evaporative cooling equipment. As such, CTI offers a thermal performance certification program to all cooling tower manufacturers.

BAC Cooling
Tower Capacity—
VTO-12 to 176 tons;
VT1-209 to 1335 tons;
VTL-16 to 272 tons.

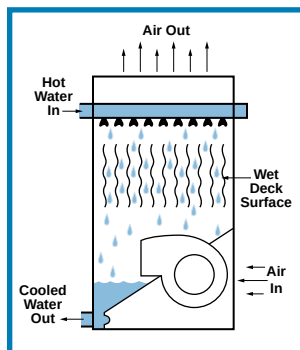


Five Year Mechanical Equipment Warranty

The five year warranty provided on BAC Series V Cooling Towers is the most comprehensive fan motor and mechanical equipment warranty available in the industry. Included in the five year warranty are mechanical equipment

support, fans, fan shafts, bearings, sheaves, and standard totally enclosed fan cooled fan motors.

Principle of Operation



Water from the heat source is distributed over the wet deck surface through large orifice spray nozzles. Simultaneously, air is blown upward over the wet deck surface, causing a small portion of the water to evaporate. This evaporation removes

the heat from the remaining water. The cooled water is collected in the tower sump and returned to the heat source.



Series V Advantages

Engineered for a Wide Range of Applications

The versatility of BAC Series V Cooling Towers ensures efficient operation in a variety of applications including heavy industrial, process, refrigeration, and HVAC. They provide many installation, maintenance, and operation features which result in lower cost of ownership. From overall design and component configuration to materials and performance specifications, BAC Series V Cooling Towers are engineered to be reliably operated under a wide range of conditions.

Installation Flexibility and Minimal Rigging Cost

BAC Series V Cooling Towers can be ideally located to meet virtually any engineering, environmental, or aesthetic requirements. Design features include single-sided air inlet and vertical discharge which permit the tower to be positioned in tight layouts. Ducted units are available which can be located indoors for aesthetic conditions, reliable year round operation, or for a sound sensitive application.



For architectural or height sensitive installations, the innovative Low Profile Series V Cooling Tower can be used to reduce the overall height of enclosures.

The modular design of the Series V Cooling Towers can greatly reduce rigging costs. The fan sections are built into the pan with the motors and drives factory-installed and aligned. As a result, rigging consists only of placing the fan/pan section in place and mounting the heat transfer section on top of it.

Low Sound Operation

BAC Series V Cooling Towers feature centrifugal fans which have inherent low sound characteristics to meet specific sound requirements. For situations when one direction is particularly sound sensitive, the unit can be oriented so that the quiet blank off panel faces toward the sound sensitive direction. When even quieter operation is desired, Series V Cooling Towers can be supplied with optional sound attenuators.



Low Profile Series V units ship completely assembled and ready to set in place using conveniently located lifting devices.



Series V Cooling Tower installation in residential area.

Easy Maintenance

Routine cleaning and maintenance of cooling towers prolong equipment life and ensure system performance. BAC Series V Cooling Towers are designed to be easily cleaned and



maintained. All mechanical equipment is located outside the moist airstream and can be accessed from the base of the tower. The unique sloping

pan localizes dirt and debris for easy removal. The strainer and makeup valve can be readily accessed for routine cleaning and adjustment.

Reliable Year Round Operation

BAC Series V Cooling Towers are designed to operate reliably and efficiently under a wide range of conditions including low ambient temperatures. Fans, motor, and drive system are



located outside of the moist discharge airstream protecting them from moisture condensation and icing. Patented four-sided fan cawling enables efficient close temperature control and minimum energy consumption.

Cost Effective Operation and Standby Capability

Reduced operating costs can be achieved during off peak operation by taking advantage of the ENERGY-MISER® Fan System option available on Series V Cooling Towers.



The ENERGY-MISER® Fan System is an energy-saving capacity control alternative to two-speed motors for Series V Cooling Towers. It consists of two standard, single-speed fan motors and drive assemblies. One drive assembly is sized for full speed and load, and the other is sized for approximately 2/3 speed, and consumes only 1/3 of design horsepower. This allows the system to be operated like a two-speed motor, but with the *reserve capacity of a standby motor* in the event of a failure. In fact, controls and wiring are virtually identical to those required for a two-speed, two-winding motor.

Significant energy savings are achieved when operating at the lower speed during periods of reduced load and/or wet bulb temperature. The ENERGY-MISER® Fan System is *comprised entirely of stock components for quick replacement* from any BAC factory.

BAC Cooling Towers are Built To Last

Factory Manufactured and Assembled by ISO 9001 Certified Company

BAC Series V Cooling Towers are manufactured and assembled under closely controlled conditions to ensure that each unit is precisely built to the same high quality standards. Strict incoming Q/A programs assure the quality of supplied components. BAC assumes single source responsibility for all major components to eliminate problems caused by variations in quality and performance from multiple vendors.

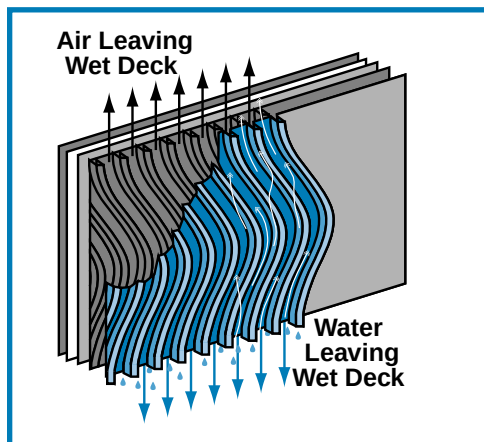
Quality Construction for Long Life

BAC Series V Cooling Towers offer more value from the ground up. Standard materials of construction are G235 (Z700 metric) galvanized steel which is universally recognized for its resistance to normal corrosion. Construction options such as the exclusive BALTIBOND® Corrosion Protection System and Stainless Steel can extend the life of your BAC Series V Cooling Tower.

1. Water Distribution System

- Schedule 40 PVC spray header and branches
- Large orifice, nonclog, plastic nozzles
- Grommetted for easy maintenance

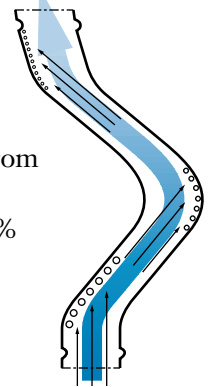
2. Wet Deck Surface



Standard-PVC-BACount® Wet Deck Surface (suitable to 130°F) is impervious to rot, decay, fungus or biological attack and has a flame spread rating of 5 per ASTM Standard E84-77a. High Temp Wet Deck is available for applications with entering water temperature up to 150°F.

3. Drift Eliminators

- Three distinct changes in air direction to effectively strip entrained moisture from leaving airstream
- Drift loss limited to 0.002% of total water circulated
- Assembled in easy to handle sections



Materials Options (Wet Deck and Eliminators):

- Galvanized Steel—for applications with entering water temperature up to 170°F
- BALTIBOND® Corrosion Protection System—for applications where corrosive conditions exist or when entering water temperatures approach a maximum of 140°F
- 304 Stainless Steel—for applications where severe corrosive conditions exist and entering water temperatures approach a maximum of 170°F

4. Casing/Pan-Fan Section

Standard—All steel panels and structural elements of the Series V Cooling Tower are constructed of heavy gauge G235 (Z700 metric) galvanized steel.

Options:

- BALTIBOND® Corrosion Protection System
- 304 Stainless Steel Cold Water Basin
- 304 Stainless Steel Construction



5. Fan Motors and Drives

- Totally enclosed fan cooled (TEFC) with a service factor of 1.15
- V-belt drives are designed for not less than 150% of motor nameplate horsepower
- Mounted at the base of the tower for easy access



6. Centrifugal Fans

- Statically and dynamically balanced, forward curved centrifugal fans are mounted in BAC designed housings with curved air inlet rings for smooth air entry
- VTO/VT1 Cooling Towers have continuous, four-sided discharge cowls mounted inside the sloping pan sides to minimize static pressure loss for increased fan efficiency and lower horsepower
- VTL Cooling Tower has a patented close coupled transition duct uniquely curved and flared to maximize efficiency

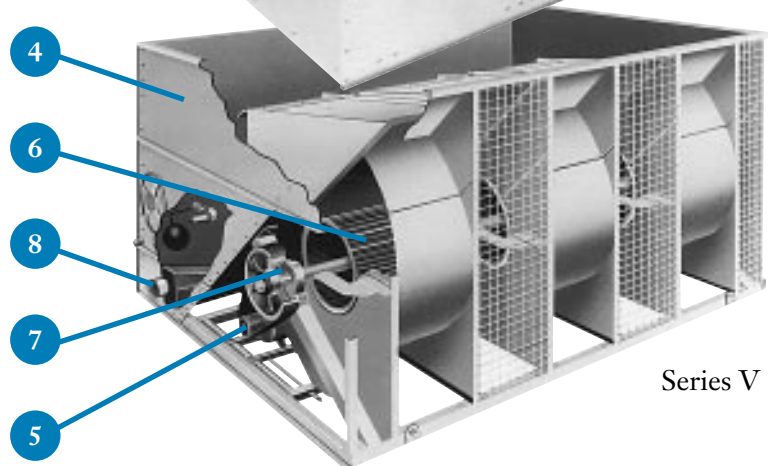
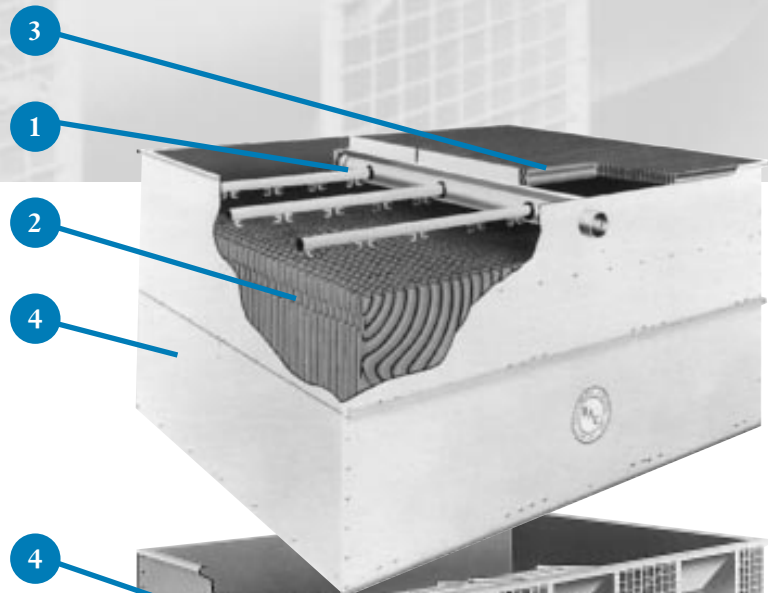


7. Fan Shaft and Bearings

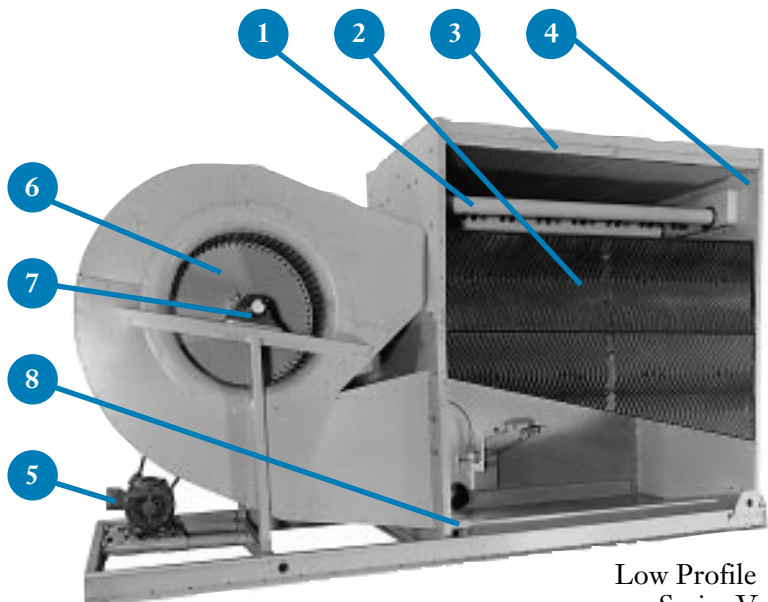
- Steel shafts supported on each end by heavy duty bearings
- Bearings have a minimum L10 of 40,000 hours (average 280,000 hours)
- Extended lube lines can be provided to permit lubrication of the drive bearings from the sides of the unit

8. Strainer

- Large lift-out strainer washes clean quickly when service is required
- Anti-vortexing baffle, included with the strainer, is specially designed to prevent air entrainment



Series V



Low Profile
Series V

Construction Options

Series V Cooling Towers are available in a wide range of construction options to meet the individual corrosion resistance, unit operating life, and budgetary requirements of every job.

Standard Corrosion Resistant Construction

All steel panels and structural elements of the Series V Cooling Tower are constructed of heavy gauge G235 (Z700 metric) hot-dip galvanized steel as standard. The ASTM designation G235 (Z700 metric) means that the weight of protective zinc coating is 2.35 ounces per square foot of steel surface, as verified by the ASTM A525 Triple-Spot Test. A zinc-rich primer is applied to the cut edges of all hot-dip galvanized components prior to assembly. This standard corrosion resistant construction will provide reliable corrosion protection and long life for most industrial cooling, air conditioning, and refrigeration applications.

Optional BALTIBOND® Corrosion Protection System

Many galvanized steel cooling towers are prematurely replaced due to short term exposures to abnormally corrosive conditions caused by unexpected upsets in chemical treatment programs or other factors. The BALTIBOND® Corrosion Protection System



BALTIBOND® Corrosion Protection System application facility

is an advancement in materials engineering developed by BAC specifically for increased protection from adverse operating conditions. The manufacturing process fuse bonds a special hybrid polymer to all hot-dip galvanized steel components of the cooling tower, extending the life of the base material. Tens of thousands of BAC installations worldwide prove the effectiveness and durability of the BALTIBOND® Corrosion Protection System. (For further details, see BAC Bulletin S650/1-0).

Optional Stainless Steel Cold Water Basin

The cold water basin may be exposed to extended periods of stagnant water where variations in treatment chemicals and natural contaminants can attack the basin material. Under these circumstances and in order to protect against these contaminants, the cold water basin is available constructed of Type 304 Stainless Steel, as an option. The steel panels and structural members above the cold water basin can be constructed of the standard G235 (Z700 metric) hot-dip galvanized steel or the optional BALTIBOND® Corrosion Protection System.

Optional Stainless Steel Construction

The Series V Cooling Tower is available in all stainless steel construction for applications exposed to extremely corrosive conditions or where the ultimate in corrosion protection and long life is desired. All steel panels and structural elements, including the structural frames, cold water basin, and mechanical equipment supports are constructed of Type 304 Stainless Steel.

Optional Factory Mutual Approval



Series V Cooling Towers are available with Factory Mutual (FM) Approved construction as an option. Consult your local BAC Representative for additional applications assistance.

Series V Selection Charts

Select the Ideal Unit for Your Application

The selections contained in the following tables are certified by the Cooling Technology Institute (CTI) in accordance with CTI Certification Standard STD-201. They are based on the desired flow rate for entering and leaving water temperatures and entering air wet bulb temperatures.

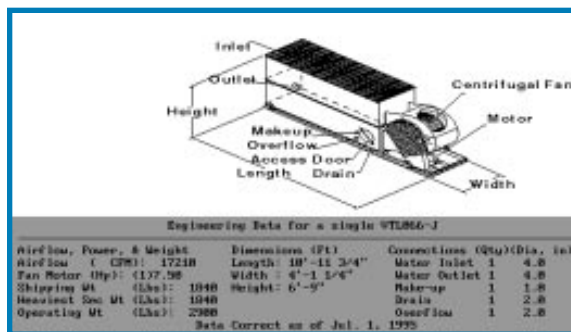
NOTE: CTI Certification under STD-201 applies only to selections with entering water temperatures of 125°F or less, temperature ranges of 4°F or more, temperature approaches of 5°F or more, and wet bulbs between 60°F and 80°F.

To obtain the model number for the Series V Cooling Tower that meets the requirements of your application locate the column headed by the proper entering air wet bulb temperature as well as the entering and exiting water temperatures. Read down that column until you reach a number equal to or greater than the water flow to be cooled. At that point proceed horizontally to the left column to find the model number of the recommended unit. In situations where the desired GPM exceeds the maximum value indicated in the table, BAC Cooling Towers can be multiplexed to accommodate the larger flow rate. When engineering a multiplexed cooling tower system contact your local BAC Representative for unit layout and piping recommendations.

For selecting the appropriate Series V Cooling Tower for design conditions not indicated, or for additional alternative horsepower options, refer to BAC Selection Software, or contact your local BAC Representative for selection assistance.

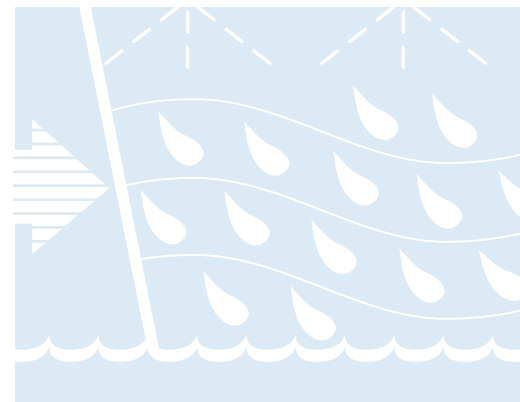
Easy-to-Use Selection Software

BAC offers easy-to-use software to assist customers in the selection and evaluation of Series V and Low Profile Series V Cooling Towers. The program provides equipment specifications, layout recommendations, sound data, and other information to aid in selecting the best BAC product for your application. The BAC Selection Software can be downloaded from the BAC web page at www.BaltimoreAircoil.com.



Sample Selection Software output screen

Series V Selection Charts



Model VTL Low Profile Cooling Towers

Model No.	Fan HP	Wet Bulb (°F) ►	80				79				78			
		Water (°F) ►	105/90	100/90	100/85	95/85	100/85	99/84	95/85	94/84	100/85	98/83	95/85	93/83
VTL 016-E	1.5		52	66	32	39	36	32	44	39	39	31	48	38
VTL 021-F	2		69	86	42	52	47	41	57	51	51	40	63	50
VTL 027-F	2		89	108	57	68	63	56	75	67	68	55	81	65
VTL 030-G	3		99	120	64	76	70	63	83	74	75	62	90	73
VTL 034-H	5		112	136	73	86	79	71	94	84	85	70	102	82
VTL 039-H	5		129	152	87	100	94	85	109	98	100	84	117	96
VTL 045-H	5		147	186	89	110	99	87	123	108	108	85	135	105
VTL 051-G	3		168	205	108	128	118	106	141	126	127	104	153	123
VTL 059-H	5		194	236	126	148	137	123	163	146	148	121	177	143
VTL 066-J	7.5		217	264	141	166	153	138	183	163	165	135	198	160
VTL 072-K	10		237	287	154	181	168	151	199	178	180	148	216	175
VTL 079-K	10		260	308	176	203	190	173	220	199	203	170	237	196
VTL 082-K	10		272	335	168	202	185	164	225	198	201	160	246	194
VTL 092-L	15		305	375	188	227	208	184	252	222	226	180	276	218
VTL 095-K	10		314	372	211	243	228	207	265	239	244	203	285	234
VTL 103-K	10		342	420	212	255	233	207	283	250	254	203	309	244
VTL 116-L	15		384	471	240	288	264	235	319	282	286	230	348	276
VTL 126-M	20		417	511	261	313	287	256	347	307	311	250	378	300
VTL 137-M	20		452	537	303	350	328	298	382	344	351	292	411	337
VTL 152-M	20		498	633	300	371	333	294	414	363	364	288	456	355
VTL 171-L	15		566	697	356	425	390	348	470	416	423	341	513	408
VTL 185-M	20		613	753	385	460	423	377	509	451	458	370	555	442
VTL 198-N	25		655	805	413	493	453	404	545	483	490	396	594	473
VTL 209-O	30		691	849	436	521	478	428	575	510	518	419	627	500
VTL 227-O	30		748	885	506	582	546	497	633	571	584	488	681	561
VTL 245-P	40		814	1007	504	606	555	493	672	593	602	483	735	581
VTL 272-P	40		899	1069	601	694	650	589	757	681	696	579	816	669

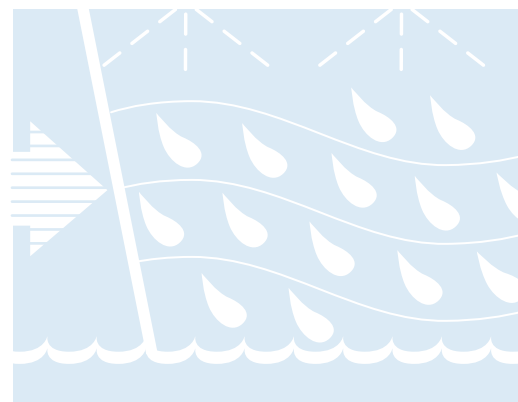
Model VTO Cooling Towers

Model No.	Fan HP	Wet Bulb (°F) ►	80				79				78			
		Water (°F) ►	105/90	100/90	100/85	95/85	100/85	99/84	95/85	94/84	100/85	98/83	95/85	93/83
VTO-12-E	1.5		40	55	21	28	24	20	32	27	27	20	36	26
VTO-14-F	2		47	64	25	32	28	24	37	31	31	23	42	31
VTO-19-G	3		63	80	37	46	41	36	52	45	45	35	57	44
VTO-24-G	3		80	98	50	60	55	49	66	58	59	48	72	57
VTO-28-H	5		93	113	89	70	64	58	77	69	70	56	84	67
VTO-32-H	5		107	144	57	74	65	56	85	73	73	55	96	71
VTO-41-J	7.5		135	173	79	99	88	78	111	97	97	76	123	95
VTO-52-J	7.5		172	213	108	129	118	105	143	126	128	103	156	124
VTO-57-K	10		189	232	119	142	130	116	157	139	141	114	171	136
VTO-65-J	7.5		217	271	132	159	145	129	178	156	158	126	195	152
VTO-75-K	10		249	308	155	186	170	151	206	182	185	148	225	178
VTO-78-K	10		260	312	169	197	184	165	216	193	197	162	234	189
VTO-88-L	15		292	350	192	223	208	188	244	219	224	184	264	214
VTO-102-L	15		339	418	211	253	232	206	280	247	251	202	306	242
VTO-107-L	15		356	428	232	270	252	227	296	265	271	222	321	260
VTO-116-M	20		385	462	252	294	274	247	322	288	294	243	348	282
VTO-132-L	15		438	541	273	327	300	267	363	320	325	262	396	314
VTO-145-M	20		481	593	300	360	330	294	398	352	358	288	435	345
VTO-155-N	25		514	633	322	385	353	315	426	377	383	308	465	369
VTO-166-N	25		552	664	360	419	391	353	460	411	421	346	498	403
VTO-176-O	30		585	703	382	445	415	374	488	436	446	367	528	428

75						72						70			68			65	
100/85	98/83	95/85	93/83	95/80	90/80	100/85	98/83	95/85	93/83	92/77	87/77	95/85	90/75	85/75	95/85	95/80	90/80	95/80	90/80
47	40	60	50	29	36	55	40	70	61	27	34	76	26	32	82	48	61	54	69
62	53	78	66	38	47	72	53	92	80	36	44	100	35	42	108	63	80	71	91
81	69	98	84	52	62	92	69	113	100	49	58	122	47	56	131	81	99	90	112
90	77	109	93	58	69	102	77	126	111	55	65	136	53	63	145	89	110	100	124
102	88	123	105	66	78	116	88	142	125	62	74	153	60	71	164	101	124	113	140
117	103	139	120	79	91	132	103	158	141	75	87	170	73	84	181	117	139	129	156
133	112	168	141	88	99	155	112	197	172	75	93	215	72	90	232	134	171	153	196
152	131	186	158	98	116	174	131	215	189	93	110	232	89	106	248	152	187	171	212
176	152	214	183	114	135	201	152	247	218	108	128	267	104	123	286	176	216	197	244
197	170	240	205	128	151	225	170	276	243	121	143	299	116	138	319	197	241	220	273
215	185	261	223	140	165	245	185	301	265	132	156	325	127	151	347	215	263	240	297
238	208	281	244	161	185	267	208	320	285	153	176	343	148	170	365	236	282	261	315
245	208	303	255	150	182	283	208	352	308	141	171	382	135	164	410	244	305	277	347
275	233	339	286	169	204	317	233	395	345	158	192	428	151	184	459	274	342	310	389
286	249	340	293	192	222	322	249	387	344	182	210	416	176	203	443	284	340	315	381
308	261	380	320	190	230	355	261	441	386	178	216	479	171	207	513	307	382	347	435
347	295	427	361	215	259	399	295	495	433	202	244	536	194	234	575	346	430	390	488
376	321	463	392	235	282	433	321	536	470	221	266	580	212	255	621	376	466	423	529
412	359	490	423	277	320	465	359	559	496	262	303	601	253	292	639	409	491	454	550
449	377	571	476	270	334	525	377	675	583	254	315	739	244	302	799	452	581	517	670
511	435	629	532	321	384	588	435	732	639	302	362	796	290	348	855	510	634	575	722
553	471	681	575	348	416	636	471	792	691	327	392	860	315	377	923	551	685	622	780
591	505	728	616	373	446	680	505	846	739	351	420	918	338	404	986	590	733	665	834
624	533	768	650	394	471	718	533	892	779	371	444	968	357	427	1039	623	773	702	879
683	597	809	701	462	532	768	597	921	818	438	505	988	423	488	1050	678	811	751	906
732	621	907	763	453	456	846	621	1060	922	426	513	1154	409	493	1243	730	914	827	1045
818	712	975	840	547	633	924	712	1113	986	518	600	1197	500	579	1275	813	977	902	1095

75						72						70			68			65	
100/85	98/83	95/85	93/83	95/80	90/80	100/85	98/83	95/85	93/83	92/77	87/77	95/85	90/75	85/75	95/85	95/80	90/80	95/80	90/80
35	28	48	38	18	24	43	36	60	49	26	35	67	16	21	74	36	49	42	59
41	33	56	44	22	28	50	42	69	58	30	41	78	19	25	86	42	57	49	69
56	47	72	60	33	41	66	57	86	74	44	56	94	30	37	102	57	73	65	85
72	61	89	75	45	54	83	72	103	90	57	70	112	41	49	120	72	89	81	102
84	72	103	87	53	63	96	85	119	104	67	82	129	48	58	138	84	103	94	117
94	76	127	101	51	66	114	96	156	130	71	94	174	45	58	191	95	129	112	154
121	101	156	129	71	89	142	123	185	159	95	121	204	64	80	221	122	159	140	184
155	132	192	162	97	116	179	157	224	195	124	152	243	88	105	262	155	193	175	221
170	145	210	177	107	128	196	172	244	213	137	167	265	97	116	285	170	211	192	240
194	164	243	203	118	143	226	196	286	247	153	190	313	106	129	338	194	245	221	282
224	190	277	233	139	167	259	226	324	282	179	220	353	126	151	379	224	279	253	319
235	202	283	241	153	178	267	237	326	287	191	228	352	139	162	377	233	284	261	320
265	229	318	272	174	202	301	267	365	322	216	257	394	158	184	421	263	319	293	359
305	259	377	317	190	228	352	308	440	383	243	299	479	171	206	515	304	380	344	434
322	278	388	331	210	245	367	324	447	393	262	312	483	191	223	517	320	389	357	439
349	302	419	359	229	266	397	352	482	425	285	339	520	208	243	556	346	420	387	474
394	335	488	411	246	295	455	399	569	495	315	387	619	222	267	666	393	491	445	561
433	369	535	451	271	325	499	438	624	543	347	425	678	245	294	729	432	539	488	615
463	394	571	482	290	348	534	468	665	580	371	454	723	262	315	777	462	575	522	656
500	431	602	514	326	380	568	503	693	609	406	485	748	296	346	800	496	603	554	681
530	457	637	545	346	404	602	534	733	645	431	514	792	315	367	846	526	638	587	720

Series V Selection Charts



Model VT1 Cooling Towers

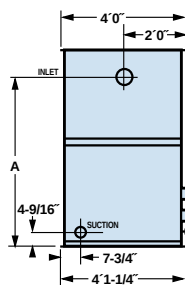
Model No.	Fan HP	Wet Bulb (°F) ►	80				79				78			
		Water (°F) ►	105/90	100/90	100/85	95/85	100/85	99/84	95/85	94/84	100/85	98/83	95/85	93/83
VT1-N209-P	40		691	897	397	500	445	388	565	489	490	379	627	478
VT1-N220-O	30		732	910	449	541	495	439	602	530	538	430	660	519
VT1-N240-P	40		798	991	525	591	541	481	657	579	588	471	720	567
VT1-N255-P	40		850	1026	548	641	597	537	705	628	643	526	765	616
VT1-N270-Q	50		900	1085	581	679	633	570	746	666	682	558	810	653
VT1-N301-Q	50		996	1298	569	718	638	556	812	701	703	543	903	685
VT1-N325-P	40		1083	1349	660	798	729	646	889	781	794	632	975	765
VT1-N346-Q	50		1152	1434	705	850	778	690	947	833	846	675	1038	815
VT1-N370-Q	50		1234	1495	792	929	864	776	1020	910	932	760	1100	891
VT1-N395-R	60		1317	1594	847	992	924	830	1090	972	996	813	1185	953
VT1-N418-P (2) 40			1382	1795	794	999	889	776	1129	977	980	758	1254	955
VT1-N440-O (2) 30			1464	1820	898	1082	990	879	1204	1060	1076	860	1320	1038
VT1-N480-P (2) 40			1596	1982	1050	1182	1082	962	1314	1159	1176	941	1440	1134
VT1-N510-P (2) 40			1700	2052	1096	1282	1194	1074	1410	1257	1286	1052	1530	1232
VT1-N540-Q (2) 50			1800	2170	1162	1358	1266	1140	1492	1332	1364	1117	1620	1306
VT1-275-P	40		912	1195	514	652	578	502	740	637	639	490	825	623
VT1-307-O	30		1026	1286	618	750	684	604	838	734	746	591	921	718
VT1-340-P	40		1136	1423	685	831	758	670	928	813	827	655	1020	795
VT1-375-P	40		1255	1529	794	936	869	778	1033	917	939	762	1125	898
VT1-400-Q	50		1339	1628	848	999	928	831	1103	978	1002	814	1200	958
VT1-415-R	60		1388	1689	881	1037	964	863	1144	1016	1040	845	1245	995
VT1-416-O (2) 30			1379	1803	781	989	877	763	1121	966	969	745	1248	944
VT1-478-N (2) 25			1596	1998	964	1170	1066	942	1305	1144	1163	922	1434	1119
VT1-507-O (2) 30			1693	2118	1023	1240	1132	1000	1385	1214	1233	978	1680	1187
VT1-560-O (2) 30			1875	2284	1186	1397	1297	1161	1543	1368	1402	1137	1680	1340
VT1-600-P (2) 40			2008	2445	1273	1498	1391	1246	1654	1467	1503	1220	1800	1437
VT1-550-P (2) 40			1824	2390	1029	1305	1156	1004	1481	1275	1278	981	1650	1245
VT1-680-P (2) 40			2272	2846	1370	1662	1516	1339	1856	1626	1654	1310	2040	1591
VT1-750-P (2) 40			2510	3058	1588	1872	1738	1556	2066	1833	1878	1524	2250	1795
VT1-800-Q (2) 50			2678	3256	1696	1998	1856	1662	2206	1957	2004	1627	2400	1916
VT1-830-R (2) 60			2776	3378	1762	2074	1928	1726	2288	2031	2082	1690	2490	1989
VT1-825-P (3) 40			2736	3586	1543	1957	1734	1507	2221	1912	1917	1471	2475	1868
VT1-921-O (3) 30			3078	3858	1854	2250	2052	1812	2514	2201	2238	1771	2763	2153
VT1-1020-P (3) 40			3408	4269	2055	2493	2274	2009	2784	2439	2481	1964	3060	2386
VT1-1125-P (3) 40			3765	4587	2382	2808	2607	2334	3099	2750	2817	2285	3375	2692
VT1-1200-Q (3) 50			4017	4884	2544	2997	2784	2493	3309	2935	3006	2441	3600	2874
VT1-1245-R (3) 60			4164	5067	2643	3111	2892	2589	3432	3047	3123	2535	3735	2984
VT1-1335-S (3) 75			4466	5425	2841	3338	3102	2780	3683	3270	3350	2723	4005	3202

75						72						70			68			65	
100/85	98/83	95/85	93/83	95/80	90/80	100/85	98/83	95/85	93/83	92/77	87/77	95/85	90/75	85/75	95/85	95/80	90/80	95/80	90/80
616	510	802	657	354	446	731	627	962	820	477	615	1062	317	400	1157	921	817	719	955
657	555	809	685	403	486	761	664	960	832	521	643	1046	363	439	1128	655	824	744	945
716	607	881	747	441	532	830	725	1044	905	569	702	1137	398	480	1226	715	898	811	1028
767	660	928	790	495	580	875	773	1072	940	621	744	1161	449	526	1243	761	930	853	1053
810	699	981	836	526	615	927	819	1133	994	658	788	1225	477	559	1312	806	983	903	1113
887	732	1159	947	507	640	1054	903	1393	1185	684	886	1539	453	573	1679	894	1180	1037	1382
970	819	1197	1013	593	717	1127	981	1423	1231	768	950	1554	533	646	1676	968	1221	1101	1401
1033	873	1272	1078	633	765	1198	1045	1513	1309	819	1012	1649	569	689	1779	1030	1297	1171	1489
1113	955	1349	1146	715	839	1272	1122	1562	1367	899	1079	1692	648	760	1814	1104	1352	1239	1534
1189	1021	1439	1223	765	897	1358	1198	1665	1458	961	1153	1802	693	813	1931	1179	1442	1322	1635
1232	1020	1604	1315	708	893	1462	1253	1924	1640	953	1230	2124	634	801	2314	1242	1634	1438	1909
1314	1111	1618	1371	806	972	1522	1329	1920	1663	1042	1286	2092	726	878	2256	1310	1648	1488	1890
1432	1214	1762	1495	882	1064	1660	1449	2088	1811	1138	1404	2274	796	961	2452	1430	1796	1622	2056
1534	1319	1856	1579	990	1160	1750	1547	2144	1880	1242	1488	2322	898	1052	2486	1522	1860	1706	2106
1620	1398	1962	1672	1052	1230	1854	1637	2266	1988	1316	1576	2450	954	1117	2624	1612	1966	1806	2226
810	666	1064	866	457	581	967	825	1285	1089	621	809	1423	408	519	1555	817	1084	951	1274
916	770	1137	958	552	672	1522	927	1920	1170	1042	1286	2092	495	603	2256	1310	1648	1488	1890
1015	853	1257	1060	613	745	1183	1027	1503	1295	799	993	1643	550	669	1776	1012	1284	1155	1479
1128	964	1376	1163	715	843	1295	1138	1600	1394	906	1093	1737	646	762	1865	1119	1379	1260	1570
1204	1029	1467	1240	764	900	1381	1213	1704	1486	966	1166	1850	690	814	1986	1194	1470	1344	1672
1249	1068	1521	1287	794	935	1432	1259	1766	1541	1004	1210	1917	717	845	2058	1239	1525	1394	1733
1226	1009	1607	1310	694	881	1460	1247	1937	1644	942	1224	2144	620	787	2341	1236	1637	1437	1921
1427	1200	1790	1491	862	1048	1663	1444	2110	1820	1124	1397	2307	774	942	2494	1424	1804	1623	2077
1514	1274	1875	1581	915	1112	1763	1531	2237	1929	1193	1482	2445	822	999	2642	1510	1913	1722	2202
1685	1439	2055	1736	1067	1259	1934	1699	2391	2083	1352	1632	2596	964	1137	2788	1672	2060	1882	2345
1806	1543	2200	1860	1146	1350	2072	1820	2558	2230	1450	1749	2777	1035	1220	2982	1791	2205	2016	2510
1620	1332	2128	1732	914	1161	1933	1649	2569	2178	1243	1618	2845	815	1037	3109	1633	2169	1901	2548
2030	1707	2514	2121	1226	1490	2366	2054	3006	2590	1598	1986	3286	1099	1338	3552	2024	2568	2310	2958
2256	1928	2752	2326	1430	1686	2590	2275	3200	2788	1812	2186	3474	1292	1524	3730	2238	2758	2520	3140
2408	2058	2934	2480	1528	1800	2762	2427	3408	2972	1932	2332	3700	1381	1627	3972	2388	2940	2688	3344
2498	2136	3042	2573	1588	1870	2864	2518	3532	3082	2008	2420	3834	1435	1691	4116	2478	3050	2788	3466
2430	1998	3193	2599	1371	1742	2900	2474	3854	3267	1864	2427	4268	1223	1556	4663	2450	3253	2852	3822
2748	2311	3411	2873	1656	2016	3207	2782	4074	3511	2163	2691	4455	1486	1810	4818	2742	3480	3129	3996
3045	2560	3771	3181	1839	2235	3549	3081	4509	3885	2397	2979	4929	1649	2007	5328	3036	3852	3465	4437
3384	2892	4128	3488	2145	2529	3885	3413	4800	4183	2718	3279	5211	1938	2286	5595	3357	4137	3780	4710
3612	3086	4401	3720	2292	2700	4143	3640	5112	4458	2898	3498	5550	2071	2441	5958	3582	4410	4032	5016
3747	3204	4563	3860	2382	2805	4296	3777	5298	4622	3012	3630	5751	2152	2536	6174	3717	4575	4182	5199
4018	3437	4888	4138	2559	3012	4606	4050	5676	4952	3231	3894	6157	2313	2723	6606	3986	4899	4483	5570

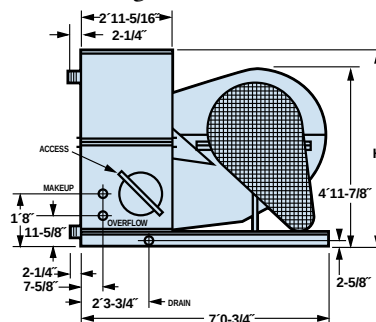
VTL Engineering Data

Models VTL-016 to VTL-272

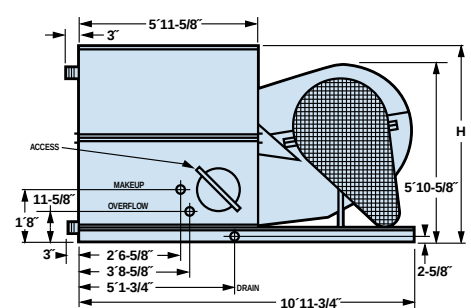
Do not use for pre-fabrication of connecting piping. Detailed dimensional drawings are available on the BAC web site: www.BaltimoreAircoil.com. In the interest of product improvement, specifications and dimensions are subject to change without notice.



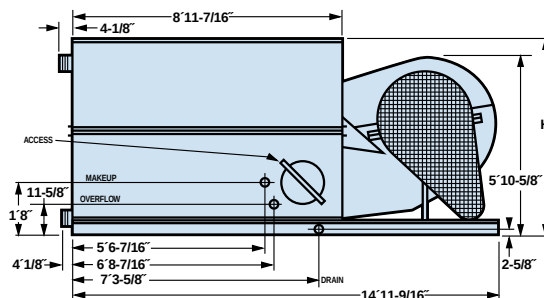
Models
VTL-016-E to 137-M



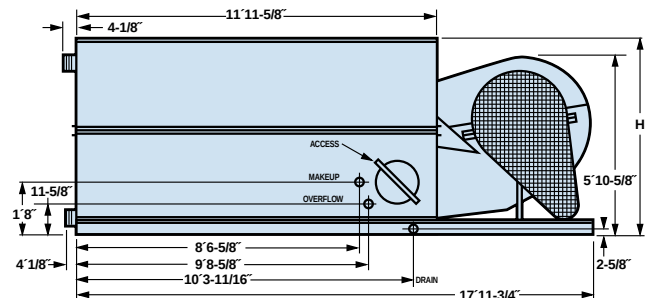
Models VTL-016-E to 039-H



Models VTL-045-H to 079-K

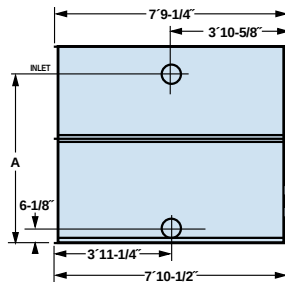


Models VTL-082-K to 095-K

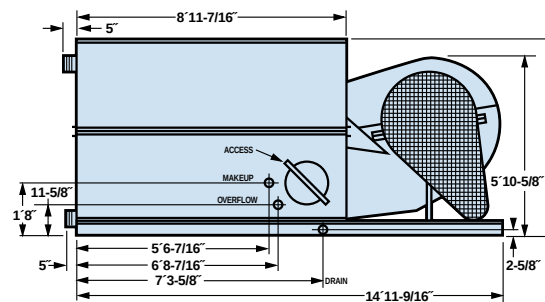


Models VTL-103-K to 137-M

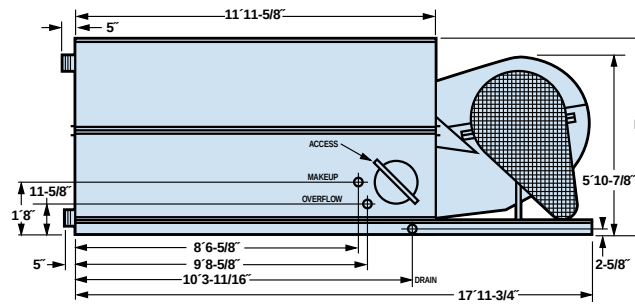
Model No.	Fan HP	CFM	Weight (lbs)		Dimensions		Water Inlet Conn.	Water Outlet Conn.	Make-up Conn.	Drain Conn.	Over-flow Conn.
			Approx. Oper.	Approx. Shpg.	A	H					
VTL-016-E	1.5	7680	1620	1100	4' 0-3/4"	5' 1-1/4"	3"	3"	1"	2"	2"
VTL-021-F	2	8150	1660	1140	4' 0-3/4"	5' 1-1/4"	3"	3"	1"	2"	2"
VTL-027-F	2	7370	1740	1220	5' 7"	6' 6-1/4"	3"	3"	1"	2"	2"
VTL-030-G	3	8270	1770	1250	5' 7"	6' 6-1/4"	3"	3"	1"	2"	2"
VTL-034-H	5	9420	1810	1290	5' 7"	6' 6-1/4"	3"	3"	1"	2"	2"
VTL-039-H	5	8680	1910	1390	7' 1-5/16"	8' 1-13/16"	3"	3"	1"	2"	2"
VTL-045-H	5	16910	2710	1650	4' 0-3/4"	5' 1-1/4"	4"	4"	1"	2"	2"
VTL-051-G	3	13350	2810	1750	5' 7"	6' 6-1/4"	4"	4"	1"	2"	2"
VTL-059-H	5	15490	2830	1770	5' 7"	6' 6-1/4"	4"	4"	1"	2"	2"
VTL-066-J	7.5	17210	2900	1840	5' 7"	6' 6-1/4"	4"	4"	1"	2"	2"
VTL-072-K	10	18690	2930	1870	5' 7"	6' 6-1/4"	4"	4"	1"	2"	2"
VTL-079-K	10	17500	3100	2040	7' 1-5/16"	8' 1-13/16"	4"	4"	1"	2"	2"
VTL-082-K	10	22400	3810	2260	5' 7"	6' 6-1/4"	6"	6"	1"	2"	2"
VTL-092-L	15	24980	3940	2390	5' 7"	6' 6-1/4"	6"	6"	1"	2"	2"
VTL-095-K	10	21150	4070	2510	7' 1-5/16"	8' 1-11/16"	6"	6"	1"	2"	3"
VTL-103-K	10	24990	4740	2680	5' 7"	6' 6-1/4"	6"	6"	1"	2"	3"
VTL-116-L	15	28200	4800	2740	5' 7"	6' 6-1/4"	6"	6"	1"	2"	3"
VTL-126-M	20	30700	4810	2750	5' 7"	6' 6-1/4"	6"	6"	1"	2"	3"
VTL-137-M	20	29560	5120	3060	7' 1-5/16"	8' 1-13/16"	6"	6"	1"	2"	3"



**Models
VTL-152-M to
272-P**



Models VTL-152-M to 227-O



Models VTL-245-P to 272-P

Model No.	Fan HP	CFM	Weight (lbs)		Dimensions		Water Inlet Conn.	Water Outlet Conn.	Make-up Conn.	Drain Conn.	Over-flow Conn.
			Approx. Oper.	Approx. Shpg.	A	H					
VTL-152-M	20	45870	6580	3440	4' 0-3/4"	5' 1-1/4"	8"	8"	2"	2"	3"
VTL-171-L	15	39940	6820	3680	5' 7"	6' 6-1/4"	8"	8"	2"	2"	3"
VTL-185-M	20	43150	6960	3820	5' 7"	6' 6-1/4"	8"	8"	2"	2"	3"
VTL-198-N	25	46090	7000	3860	5' 7"	6' 6-1/4"	8"	8"	2"	2"	3"
VTL-209-O	30	48630	7040	3900	5' 7"	6' 6-1/4"	8"	8"	2"	2"	3"
VTL-227-O	30	46550	7470	4300	7' 1-5/16"	8' 1-13/16"	8"	8"	2"	2"	3"
VTL-245-P	40	58820	8970	4790	5' 7"	6' 6-1/4"	8"	8"	2"	2"	3"
VTL-272-P	40	56760	9490	5310	7' 1-5/16"	8' 1-13/16"	8"	8"	2"	2"	3"

Notes:

All connections 6" and smaller are MPT. Connections 8" and larger are beveled-for-welding.

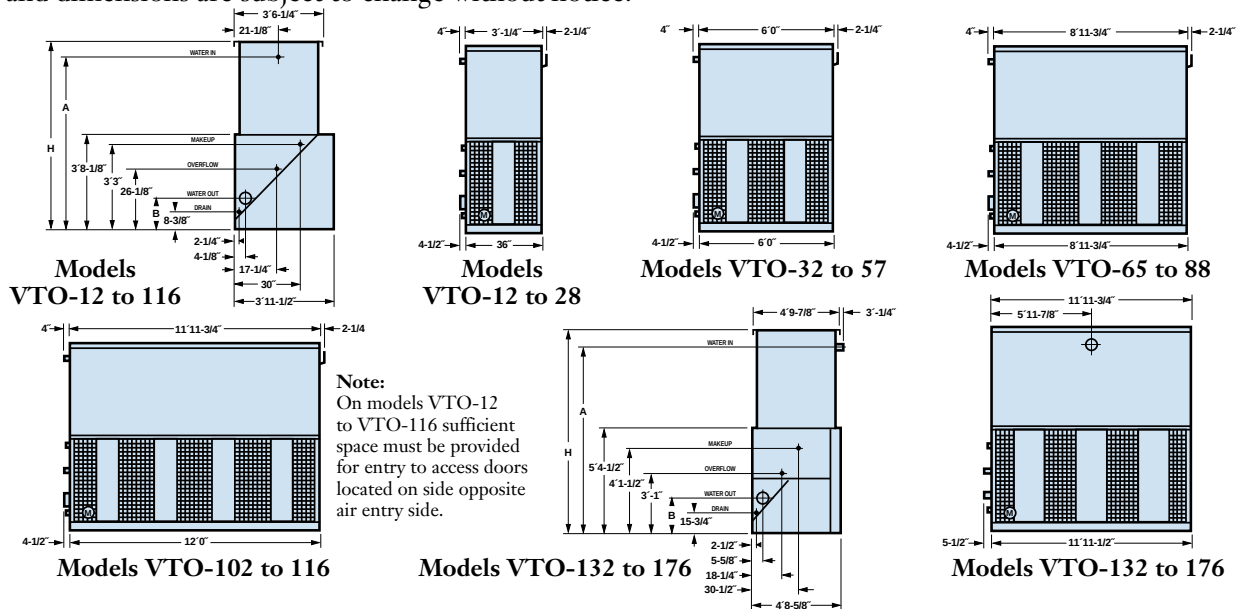
When multiple towers are required, equalizer connections must be furnished. Consult your local BAC Representative for size and location.

Fan HP is at 0" ESP. To operate against external static pressure up to 1/2", consult your local BAC Representative.

VTO Engineering Data

Models VTO-012 to VTO-176

Do not use for pre-fabrication of connecting piping. Detailed dimensional drawings are available on the BAC web site: www.BaltimoreAircoil.com. In the interest of product improvement, specifications and dimensions are subject to change without notice.



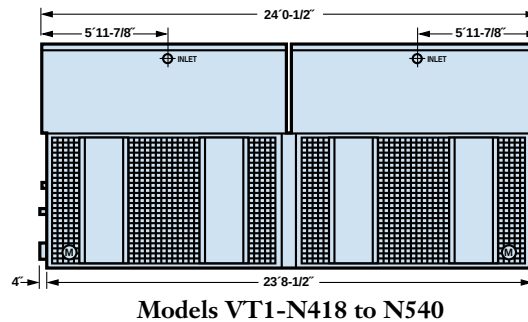
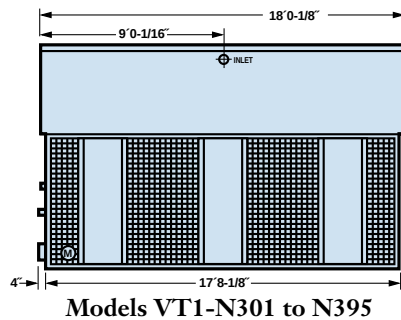
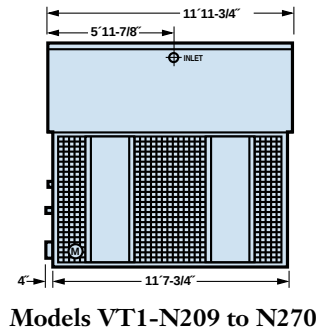
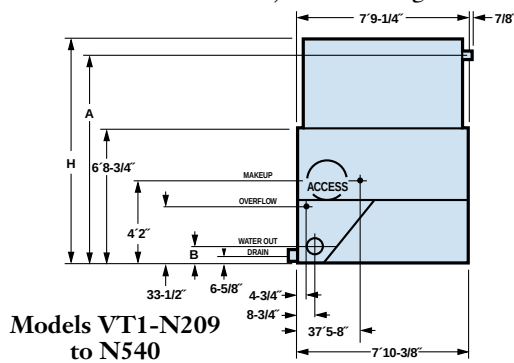
Model No.	Fan HP	CFM	Weight (lbs)			Dimensions			Water Inlet Conn.	Water Outlet Conn.	Make-up Conn.	Drain Conn.	Over-flow Conn.
			Approx. Oper.	Approx. Shpg.	Heaviest Section (PAN)	A	H	B					
VTO-12-E	1-1/2	4970	960	790	790	6' 7-7/8"	7' 6-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-14-F	2	5460	970	800	800	6' 7 7/8"	7' 6-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-19-G	3	6190	990	820	820	6' 7 7/8"	7' 6-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-24-G	3	5945	1050	950	630	8' 1 7/8"	9' 0-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-28-H	5	6960	1170	970	650	8' 1 7/8"	9' 0-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-32-H	5	11820	1590	1230	1230	6' 7 7/8"	7' 6-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-41-J	7 1/2	13435	1650	1290	1290	6' 7 7/8"	7' 6-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-52-J	7 1/2	12960	1780	1540	870	8' 1 7/8"	9' 0-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-57-K	10	14180	1790	1550	880	8' 1 7/8"	9' 0-1/8"	12 7/8"	3"	3"	1"	2"	2"
VTO-65-J	7 1/2	16860	2580	2000	1070	8' 1 7/8"	9' 0-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-75-K	10	18435	2590	2010	1080	8' 1 7/8"	9' 0-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-78-K	10	17990	2710	2130	1080	9' 7 1/8"	10' 6-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-88-L	15	20420	2770	2190	1140	9' 7 1/8"	10' 6-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-102-L	15	25060	3310	2500	1330	8' 1 7/8"	9' 0-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-107-L	15	24460	3680	2870	1540	9' 7 7/8"	10' 6-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-116-M	20	26760	3740	2930	1600	9' 7 1/8"	10' 6-1/8"	12 7/8"	4"	4"	1"	2"	2"
VTO-132-L	15	30,600	5190	3820	2000	10' 9 7/8"	11' 9-1/8"	23 1/4"	6"	6"	1"	2"	3"
VTO-145-M	20	33,670	5200	3830	2010	10' 9 7/8"	11' 9-1/8"	23 1/4"	6"	6"	1"	2"	3"
VTO-155-N	25	36,240	5250	3880	2060	10' 9 7/8"	11' 9-1/8"	23 1/4"	6"	6"	1"	2"	3"
VTO-166-N	25	35,265	5650	4280	2220	12' 3 7/8"	13' 3 1/8"	23 1/4"	6"	6"	1"	2"	3"
VTO-176-O	30	37,330	5680	4310	2250	12' 3 7/8"	13' 3 1/8"	23 1/4"	6"	6"	1"	2"	3"

Notes: All connections 3" and smaller are MPT. Connections 4" and larger are beveled-for-welding and suitable for grooved piping connection. Fan HP is at 0" ESP. To operate against external static pressure up to 1/2", consult your local BAC Representative.

VT1 Engineering Data

Models VT1-N209 to VT1-N540

Do not use for pre-fabrication of connecting piping. Detailed dimensional drawings are available on the BAC web site: www.BaltimoreAircoil.com. In the interest of product improvement, specifications and dimensions are subject to change without notice.



Model No.	Fan HP	CFM	Weight (lbs)			Dimensions			Water Inlet Conn.	Water Outlet Conn.	Make-up Conn.	Drain Conn.	Over-flow Conn.
			Approx. Oper.	Approx. Shpg.	Heaviest Section (PAN)	A	H	B					
VT1-N209-P	40	60,300	9,180	5,350	3,300	10'7 5/8"	11'3 3/8"	12"	8"	8"	2"	2"	3"
VT1-N220-O	30	53,100	9,490	5,660	3,110	12'4 5/8"	13'2 1/8"	12"	8"	8"	2"	2"	3"
VT1-N240-P	40	57,950	9,680	5,850	3,300	12'4 5/8"	13'2 1/8"	12"	8"	8"	2"	2"	3"
VT1-N255-P	40	55,900	10,380	6,550	3,300	13'9 3/8"	14'6 7/8"	12"	8"	8"	2"	2"	3"
VT1-N270-Q	50	59,850	10,420	6,590	3,340	13'9 3/8"	14'6 7/8"	12"	8"	8"	2"	2"	3"
VT1-N301-Q	50	86,150	13,380	7,530	4,590	10'7 5/8"	11'3 3/8"	12"	8"	8"	2"	2"	3"
VT1-N325-P	40	77,450	14,110	8,260	4,550	12'4 5/8"	13'2 1/8"	12"	8"	8"	2"	2"	3"
VT1-N346-Q	50	83,050	14,150	8,300	4,590	12'4 5/8"	13'2 1/8"	12"	8"	8"	2"	2"	3"
VT1-N370-Q	50	80,150	15,130	9,280	4,690	13'9 3/8"	14'6 7/8"	12"	8"	8"	2"	2"	3"
VT1-N395-R	60	84,750	15,250	9,400	4,710	13'9 3/8"	14'6 7/8"	12"	8"	8"	2"	2"	3"
VT1-N418-P	(2) 40	120,600	18,490	10,680	6,580	10'7 5/8"	11'3 3/8"	11"	(2) 8"	10"	2"	2"	2"
VT1-N440-O	(2) 30	106,200	19,110	11,300	6,200	12'4 5/8"	13'2 1/8"	11"	(2) 8"	10"	2"	2"	3"
VT1-N480-P	(2) 40	115,900	19,490	11,680	6,580	12'4 5/8"	13'2 1/8"	11"	(2) 8"	10"	2"	2"	3"
VT1-N510-P	(2) 40	111,800	20,890	13,080	6,580	13'9 3/8"	14'6 7/8"	11"	(2) 8"	10"	2"	2"	3"
VT1-N540-Q	(2) 50	119,700	20,970	13,160	6,660	13'9 3/8"	14'6 7/8"	11"	(2) 8"	10"	2"	2"	3"

Notes: All connections 6" and smaller are MPT. Connections 8" and larger are beveled-for-welding.

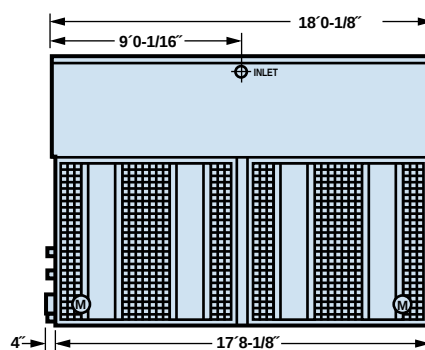
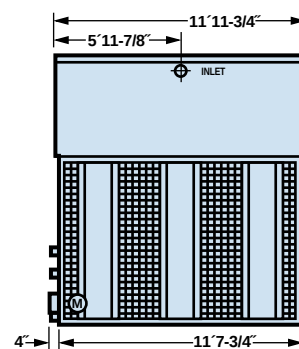
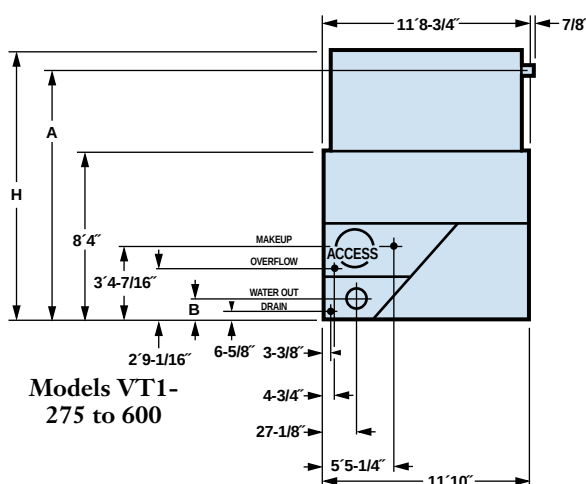
When multiple towers are required, equalizer connections must be furnished. Consult your local BAC Representative for size and location.

Fan HP is at 0" ESP. To operate against external static pressure up to 1/2", consult your local BAC Representative.

VT1 Engineering Data (cont.)

Models VT1-275 to VT1-1335

Do not use for pre-fabrication of connecting piping. Detailed dimensional drawings are available on the BAC web site: www.BaltimoreAircoil.com. In the interest of product improvement, specifications and dimensions are subject to change without notice.



Notes:

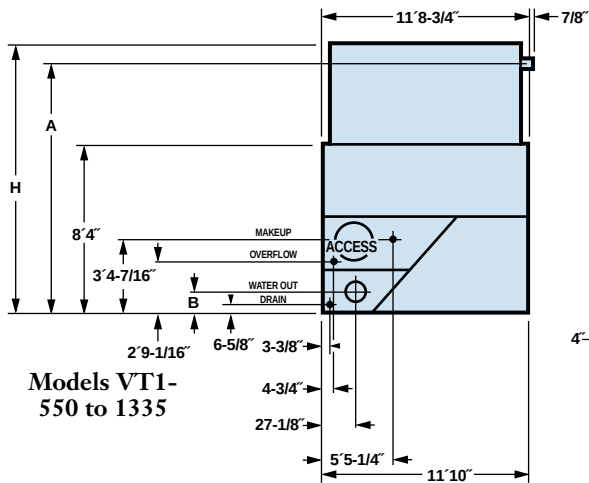
All connections 6" and smaller are MPT. Connections 8" and larger are beveled-for-welding.

When multiple towers are required, equalizer connections must be furnished. Consult your local BAC Representative for size and location.

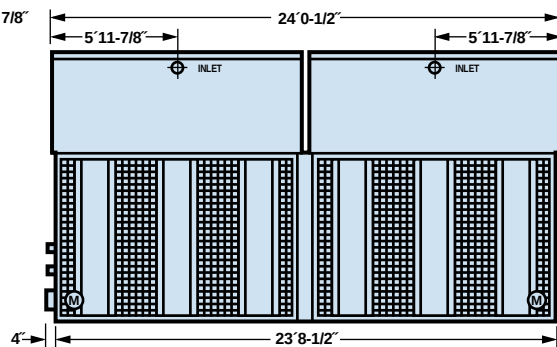
Fan HP is at 0" ESP. To operate against external static pressure up to 1/2", consult your local BAC Representative.

Fans on Models VT1-416 thru 600 must be cycled simultaneously for capacity control. For additional steps of control beyond on/off operation, the ENERGY-MISER® Fan System or two-speed motors are recommended.

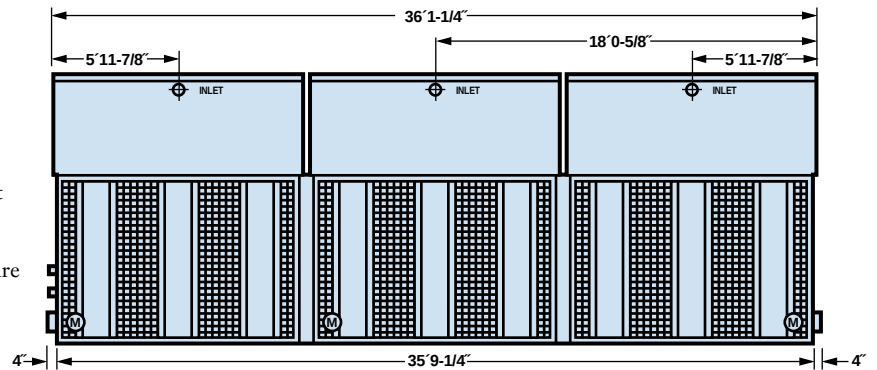
Model No.	Fan HP	CFM	Weight (lbs)			Dimensions			Water Inlet Conn.	Water Outlet Conn.	Make-up Conn.	Drain Conn.	Over-flow Conn.
			Approx. Oper.	Approx. Shpg.	Heaviest Section (PAN)	A	H	B					
VT1-275-P	40	82,530	15,190	8,040	5,140	12'2 7/8"	12'10 5/8"	14 1/2"	8"	8"	2"	2"	3"
VT1-307-O	30	74,350	15,780	8,630	4,950	13'11 7/8"	14'9 3/8"	14 1/2"	8"	8"	2"	2"	3"
VT1-340-P	40	81,550	15,970	8,820	5,140	13'11 7/8"	14'9 3/8"	14 1/2"	8"	8"	2"	2"	3"
VT1-375-P	40	79,300	16,940	9,790	5,140	15'4 5/8"	16'2 1/8"	14 1/2"	8"	8"	2"	2"	3"
VT1-400-Q	50	85,150	16,980	9,830	5,180	15'4 5/8"	16'2 1/8"	14 1/2"	8"	8"	2"	2"	3"
VT1-415-R	60	90,250	17,100	9,950	5,300	15'4 5/8"	16'2 1/8"	14 1/2"	8"	8"	2"	2"	3"
VT1-416-O	(2)30	125,046	22,430	11,530	7,280	12'1 7/8"	12'10 5/8"	13 1/2"	10"	10"	2"	2"	3"
VT1-478-N	(2)25	116,150	23,600	12,700	7,240	13'10 7/8"	14'9 3/8"	13 1/2"	10"	10"	2"	2"	3"
VT1-507-O	(2)30	123,150	23,640	12,740	7,280	13'10 7/8"	14'9 3/8"	13 1/2"	10"	10"	2"	2"	3"
VT1-560-O	(2)30	119,750	25,080	14,180	7,280	15'3 5/8"	16'2 1/8"	13 1/2"	10"	10"	2"	2"	3"
VT1-600-P	(2)40	131,250	25,460	14,560	7,660	15'3 5/8"	16'2 1/8"	13 1/2"	10"	10"	2"	2"	3"



Models VT1-550 to 1335



Models VT1-550 to 830



Models VT1-825 to 1335

Notes:

All connections 6" and smaller are MPT. Connections 8" and larger are beveled-for-welding.

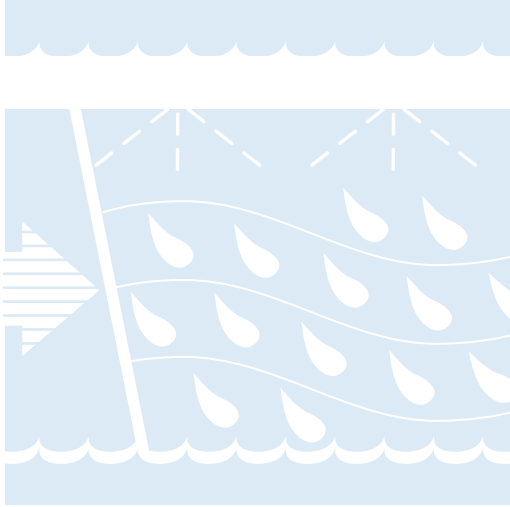
When multiple towers are required, equalizer connections must be furnished. Consult your local BAC Representative for size and location.

Fan HP is at 0" ESP. To operate against external static pressure up to 1/2", consult your local BAC Representative.

Model No.	Fan HP	CFM	Weight (lbs)			Dimensions			Water Inlet Conn.	Water Outlet Conn.	Make-up Conn.	Drain Conn.	Over-flow Conn.
			Approx. Oper.	Approx. Shpg.	Heaviest Section (PAN)	A	H	B					
VT1-550-P	(2) 40	165,060	30,590	16,020	10,220	12'2 7/8"	12'10 5/8"	12 1/2"	(2) 8"	12"	2"	2"	3"
VT1-680-P	(2) 40	163,100	32,150	17,580	10,220	13'11 7/8"	14'9 3/8"	12 1/2"	(2) 8"	12"	2"	2"	3"
VT1-750-P	(2) 40	158,600	34,090	19,520	10,220	15'4 5/8"	16'2 1/8"	12 1/2"	(2) 8"	12"	2"	2"	3"
VT1-800-Q	(2) 50	170,300	34,170	19,600	10,300	15'4 5/8"	16'2 1/8"	12 1/2"	(2) 8"	12"	2"	2"	3"
VT1-830-R	(2) 60	180,500	34,410	19,840	10,540	15'4 5/8"	16'2 1/8"	12 1/2"	(2) 8"	12"	2"	2"	3"
VT1-825-P	(3) 40	247,590	45,980	24,000	15,300	12'2 7/8"	12'10 5/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"
VT1-921-O	(3) 30	223,050	47,750	25,770	14,730	13'11 7/8"	14'9 3/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"
VT1-1020-P	(3) 40	244,650	48,320	26,340	15,300	13'11 7/8"	14'9 3/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"
VT1-1125-P	(3) 40	237,900	51,230	29,250	15,300	15'4 5/8"	16'2 1/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"
VT1-1200-Q	(3) 50	255,450	51,350	29,370	15,420	15'4 5/8"	16'2 1/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"
VT1-1245-R	(3) 60	270,750	51,710	29,730	15,780	15'4 5/8"	16'2 1/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"
VT1-1335-S	(3) 75	290,550	51,770	29,790	15,840	15'4 5/8"	16'2 1/8"	13 1/2"	(3) 8"	(2) 10"	3"	2"	3"



Engineering Considerations



Tower Positioning

Series V Cooling Towers must have an adequate supply of fresh air to the air inlets. When units are placed in enclosures or close to adjacent building walls, make sure that the warm, saturated discharge air is not deflected and drawn back into the air inlets.

Warning: Position each cooling tower in a manner so as to prevent the introduction of the warm discharge air and the associated drift (which may contain chemical or biological contaminants such as Legionella) into the ventilation system of the building.

Indoor Installations

Many indoor installations require the use of inlet and/or discharge ductwork. Towers installed with inlet ductwork must be ordered with solid-bottom panels. Generally, intake ducts are used only on smaller units while the equipment room is used as a plenum for larger units. Discharge ductwork will normally be required to carry the saturated discharge air from the building.

Both intake and discharge ductwork must have access doors to allow servicing of the fan assembly, eliminators, and water distribution system. All ductwork should be symmetrical and designed to provide even air distribution across the face of intakes and discharge openings.

Warning: The discharge opening must be positioned to prevent the introduction of discharge air into the fresh air intakes serving the tower or the ventilation systems of this or adjacent buildings.

Cold Weather Operation

Series V Cooling Towers are suitable for most cold weather applications when installed with proper capacity control and freeze protection. Review cold weather applications with your local BAC Representative to ensure the unit selection, location, control, and accessories are adequate for reliable operation.

Protection Against Basin Water Freezing

As long as the Series V Cooling Tower is in operation under load with appropriate capacity control, the recirculating cooling water will not freeze. However, when the tower is shut down, the basin water must be protected. An indoor auxiliary sump is the best means of avoiding basin water freezing in an idle tower. With this remote sump system, the basin water is always drained to the indoor sump whenever the recirculating water pump is stopped.

Where a remote sump is impractical because of tower location or space limitations, supplementary heat must be supplied to the basin water through the use of electric-immersion heaters, steam coils, or hot-water coils.

In addition, all exposed water piping and make-up lines that do not drain at shutdown should be insulated and traced with electric heater tape.

Piping and Valves

To prevent basin overflow at shutdown and to ensure satisfactory pump operation at start up, locate any heat exchanger(s) and as much tower piping as possible below the operating level of the tower. Piping should be sized and installed in accordance with good piping practice.

Make-up water supply pressure should be maintained between 15 and 50 psig for proper operation. Additionally, support all piping independently with pipe hangers or supports. External shut-off valves are required if the system design requires the isolation of individual cooling tower cells. Maximum spray pressure at the inlet header is 5.0 psig. When multiple towers are used on a common system, install equalizing lines between the sumps of the separate units to ensure balanced water level in all units.

Sound

As society becomes more concerned about the quality of its environment, sound is becoming an important consideration in the selection and location of mechanical equipment. There are three steps involved in evaluating the sound from a cooling tower: establishing the sound criteria, estimating the sound levels generated by the cooling tower, and comparing the sound criteria to the generated sound levels.

The system designer usually establishes the acceptable sound level for the project based on his judgment, local code requirements, and the needs of the owner.

BAC has certified sound levels generated by the cooling tower. In addition, the designer must take into account the effects of the geometry of the tower installation, as well as the distance and direction from the tower to sound sensitive areas. The last step is to compare the established noise criteria with the expected sound levels to determine if the tower sound will be acceptable.

In the event that the cooling tower sound may be excessive for the particular site conditions, packaged sound attenuation, barrier walls, or relocation of towers are available means to reduce or control the sound levels.

Water Treatment Requirements

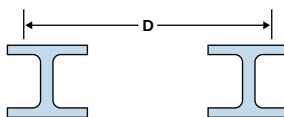
In order to control potential contaminants, a water treatment program is required. Typically, a simple bleed-off may be adequate for control of scale and corrosion. Biological contaminations such as Legionella, however, must be controlled with biocides and such treatment should be initiated at system start up and continued regularly.

Whatever water treatment program is selected it must be compatible with construction materials. Maintain the pH of the circulating water between 7.0 and 9.0. Units with galvanized steel construction and circulating water pH of 8.3 or higher may require periodic

passivization to prevent the accumulation of a white waxy, nonprotective zinc corrosion called white rust. Batch feeding of chemicals into the unit is not recommended for units with galvanized steel construction. If units are constructed of corrosion resistant materials, acid treatment may be considered; however, the water quality must be maintained within guidelines set forth in the Operating and Maintenance Instructions for this equipment. For specific recommendations on water treatment, contact a competent water treatment supplier.

Steel Support Specifications

Series V Cooling Towers are designed to be supported by two I-beams spaced a distance “D” apart, running the full length of the unit.



Model Numbers	Maximum D (inches)	Deflection (inches)
VTO12 thru 28	45-3/8	3/32
VTO 32 thru 57	45-3/8	3/16
VTO 65 thru 88	45-3/8	5/16
VTO 102 thru 116	45-3/8	3/8
VTO 132 thru 176	54-1/4	3/8
VT1-N209 thru N270	91-5/8	3/8
VT1-N301 thru N395	91-5/8	1/2
VT1-N418 thru N540	91-5/8	1/2
VT1-275 thru 415	139-1/4	3/8
VT1-416 thru 600	139-1/4	1/2
VT1-550 thru 830	139-1/4	1/2
VT1-825 thru 1335	139-1/4	1/2
VTL 016 thru 039	47	1/4
VTL 045 thru 079	47	3/8
VTL 082 thru 092	47	1/2
VTL 103 thru 137	47	1/2
VTL 152 thru 227	92-1/4	1/2
VTL 245 thru 272	92-1/4	1/2

If point vibration isolation is used, the isolators must be located under the supporting steel, not between the support steel and the cooling tower.

Series V Cooling Tower Accessories

Sound Attenuation*†

Series V Cooling Tower installations will meet most sound level criteria without attenuation. For extremely sound sensitive installations, packaged sound attenuators specifically built, tested, and rated for Series V Cooling Towers are available for field mounting. BAC-designed sound attenuation guarantees the acoustic and thermal performance specified for your project. The complete attenuation package consists of staggered, acoustically-lined, vertical baffles for air intake and an acoustically-lined, tapered, discharge attenuator.

Discharge Hoods*†

BAC offers a full line of standard discharge hoods that are built, tested, and rated specifically for all Series V Cooling Towers. The hoods are designed to increase the discharge air velocity to avoid recirculation in extremely tight enclosures. They can be used to elevate the tower discharge above the adjacent walls.

Solid Bottom Panels*†

Factory-installed bottom panels are available. Their use is required when the intake air is ducted to the unit.

Bottom Screens*

To prevent unauthorized access, air inlet screens can be factory installed on the bottom of the cooling tower.

ENERGY-MISER® Fan System

The ENERGY-MISER® Fan System is an improved capacity control alternative to two-speed motors on all Series V Cooling Towers. Part-load efficiencies are improved, and it provides standby protection with the use of two single-speed motors.

*Available with the BALTIBOND® Corrosion Protection System or stainless steel.

† Larger fan motors and drives may be necessary when this option is provided.

The ENERGY-MISER® Fan System consists of two standard 1800 RPM motors and drive assemblies on either end of the fan shaft. The smaller motor is approximately 1/3 the design horsepower and 2/3 fan speed.

Capacity Control Dampers*†

Modulating capacity control dampers are available for all Series V Model Cooling Towers when close control of leaving water temperature is required and/or the tower will be operating under varying loads at below-freezing ambient temperatures. Capacity control dampers provide better temperature control than can be obtained from the cycling of the unit fans alone. A standard electrical control package for dampers is available.

Basin Heaters

Cooling towers exposed to extremely low temperatures require protection to prevent freezing of the basin water when the unit is idle. Factory installed heaters which maintain +40°F water temperature at 0°F ambient provide such protection.

Model Nos.	Standard Heaters		Canadian Heaters	
	No. of Heaters	KW Per Heater	No. of Heaters	KW Per Heater
VTO12 thru 28	1	2	1	2
VTO 32 thru 57	1	2	1	2
VTO 65 thru 88	1	2	1	3
VTO 102 thru 116	1	3	1	5
VTO 132 thru 176	1	3	1	5
VT1-N209 thru N270	1	5	1	7.5
VT1-N301 thru N395	1	7	1	10
VT1-N418 thru N540	2	5	2	7.5
VT1-275 thru 415	1	8	1	10
VT1-416 thru 600	1	12	2	7.5
VT1-550 thru 830	2	8	2	10
VT1-825 thru 1335	3	8	3	10
VTL 016 thru 039	1	2	1	2
VTL 045 thru 079	1	3	1	5
VTL 082 thru 095	1	4	1	5
VTL 103 thru 137	1	5	1	7.5
VTL 152 thru 227	1	7	1	9
VTL 245 thru 272	1	9	1	12

Basin Coil

A steam or a hot water coil for basin water freeze protection can be factory-installed in the cooling tower basin. The coil is constructed from galvanized steel pipe ready for piping to an external steam or hot water source.

Steam Injector

A factory installed brass steam injector nozzle for basin water freeze protection can be provided in the cooling tower basin. The steam injector is sized to maintain 40°F pan water at 0°F ambient with min. 5 psig.

Vibration Cutout Switch

This option opens the fan motor control circuit upon sensing excessive vibration. The electronic switch is furnished mounted, but unwired, on the fan support framework.

Electric Water Level Control

A factory-set electric water level control system can be substituted for a standard mechanical makeup valve to provide even more accurate water level control. No field adjustment is required to accommodate variations in thermal loads or to make up water supply pressures.

Ladder, Safety Cage, Handrail

These items are available for field installation on all Series V models and are constructed to OSHA standards. They may be mandated by governmental authorities and/or applicable industry standards. NOTE: When these options are employed, the tower should be equipped with steel eliminators.

Vibration Isolators

BAC Series V Cooling Towers operate with virtually no vibration and generally do not require vibration isolation. When required, spring-type isolator rails can be furnished by BAC for installation between the supporting steel and the bottom framework of the unit.

Extended Lubrication Lines

Lubrication lines with standard grease fittings are extended outside the fan section.

Basin Sweeper Piping

This is an effective method of eliminating debris which may collect in the cold water basin of the tower. A complete piping system in the tower basin is provided for connection to side stream filtration equipment with a supply pressure of 10-20 psig.

Connections

The design of the Series V Tower allows for additional connections to be installed in the pan for equalizing, bypass, or optional suction location. When the tower is specified for remote sump operations, the float valve and strainer are omitted and an oversized outlet is provided. Connections can be provided as flanged, beveled-for-welding, or threaded depending on size and location.

Remote Sump Tanks

A full line of RS model Remote Sump Tanks is available for sump water protection during shutdown in freezing weather. These tanks are complete with strainer and anti-vortexing baffle, makeup assembly, and overflow and drain connections.

IOBIO® Bacteria, Slime, and Algae Control

An IOBIO® Control is available to control the growth of microorganisms associated with open recirculating cooling water by automatically introducing a precise, low concentration of elemental iodine into the recirculating water. Contact your BAC Representative for details.

Export Shipments

Series V Cooling Towers can be prepared for export shipment in either of two ways: a complete plastic covering and minimum export crating acceptable to the carrier, or completely closed export boxing.



December 11, 2025

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Air Permit Support Section
300 Sower Blvd
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC – Emission Unit 06 Finishing Machines #1 & #2
Decommissioned
Source ID: 21-015-00125
AI#: 137

Dear Mr. Michael Fant,

Safran Landing Systems Kentucky LLC is submitting this letter to inform you that as of December 8, 2025 Finishing Machines #1 & #2 (EU06) will longer operate, and decomissioning procedures have begun. The dust collector that serviced Finishing Machines #1 & #2 also serves Machining Line 4 and will remain operational to continue to capture Machining Line #4 emissions.

The decommissioning of Finishing Machines #1 & #2 commenced on December 8th, 2025, at our facility located at One Carbon Way, Walton, Kentucky 41094.

If you have any additional questions, please contact me at 859-959-1538.

Sincerely,
Safran Landing Systems Kentucky LLC


Benjamin Fern
Environmental Engineer

Fakharpour, Babak (EEC)

From: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Sent: Friday, May 22, 2026 2:19 PM
To: Fakharpour, Babak (EEC)
Subject: RE: Cooling tower table
Attachments: DEP7007N Form - VOC HAPS Contact Cooling Towers C#2.pdf; DEP7007N Form - VOC HAPS Contact Cooling Towers C#3.pdf; DEP7007N Form - VOC HAPS Contact Cooling Towers C#1.pdf; DEP7007N Form - VOC HAPS Contact Cooling Towers MP#3.pdf; Tables Diagrams.pdf; DEP7007B Form - Manufacturing or Processing Operations 2026.pdf

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C2 - Confidential

Babak,

Attached are the updated N forms, B Form, and tables we discussed on our phone call on 5/19/2026.

Please let me know if you have any other questions.

Thanks

Ben

Benjamin FERN

Environmental Engineer | Safran Landing Systems | HSE
M (859)-979-1538
1 Carbon Way
Walton, Kentucky 41094
www.safran-group.com



From: FERN Benjamin (SAFRAN LANDING SYSTEMS)
Sent: Friday, May 15, 2026 6:13 AM
To: 'Fakharpour, Babak (EEC)' <Babak.Fakharpour@ky.gov>

Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Subject: RE: Cooling tower table

C2 - Confidential

Babak,

See the table below. Hope this helps. Please let me know if you have and questions.

Permit Naming			Safran Naming			
04A	Main Plant Cooling Tower #3	3A	Main Plant Cooling Tower #3	1	or	3A
		3B		2	or	3B
		3C		3	or	3C
		3D		4	or	3D
		3E		5	or	3E
04B	Condensate Tower #1	1A	Condensate Tower #1 or C1,2	1	or	a
		1B		2	or	b
	Condensate Tower #2	2A	Condensate Tower #2 or C3,4,5	3	or	c
		2B		4	or	d
		2C		5	or	e
	Condensate Tower #3	3A	Condensate Tower #3 or C6,7,8	6	or	f
		3B		7	or	g
		3C		8	or	h
04C	Accelerated Cooling Tower	#1	Accelerated Cooling Tower	#1		
		#2		#2		
04D	Main Plant Cooling Tower #1	1A	Main Plant Cooling #1	1	or	A
		1B		2	or	B
		1C		3	or	C
04E	Main Plant Cooling Tower #2	2A	Main Plant Cooling Tower #2	1	or	A
		2B		2	or	B
04F	RFPC Tower	#1	RFPC Tower	#1		
		#2		#2		

Benjamin FERN

Environmental Engineer | Safran Landing Systems | HSE

M (859)-979-1538

1 Carbon Way

Walton, Kentucky 41094
www.safran-group.com



From: Fakharpour, Babak (EEC) <Babak.Fakharpour@ky.gov>
Sent: Thursday, May 14, 2026 1:24 PM
To: FERN Benjamin (SAFRAN LANDING SYSTEMS) <benjamin.fern@safrangroup.com>
Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: Cooling tower table

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In case of suspicion, click on "Report to SAFRAN Security" from the Outlook ribbon.

Here you go:

Group 3
Emission Unit 04 (EU 04) – Cooling Tower Systems



Emission Point #	Unit Name	Maximum Capacity (gal/hr)	Drift Loss	Control Device	Construction Commenced
Emission Unit 04 (EU 04) – Cooling Towers					
04 A	Main Plant Cooling Towers #3 (Contact water)	3A	116,520	0.002%	2018
		3B	116,520		
		3C	116,520		
		3D	116,520		
		3E	116,520		
04B	Condensate Towers #1 (Contact water)	1A	45,660		1998
		1B	45,660		
	Condensate Towers #2 (Contact water)	2A	30,000		2012
		2B	30,000		
		2C	30,000		
	Condensate Towers #3 (Contact water)	3A	39,600		2012
		3B	39,600		
		3C	39,600		
04C	Accelerated Cooling Tower (Non-Contact Water)	#1	42,900	0.002%	2012
		#2	42,900		
04D	Main Plant Cooling Towers #1 (Non-Contact Water)	1A	67,980	0.002%	1998
		1B	67,980		
		1C	67,980		
04E	Main Plant Cooling Towers #2 (Non-Contact Water)	2A	40,800	0.002%	2012
		2B	40,800		
04F	RFPC Tower(Non-Contact Water)	#1	67,800	0.002%	2018
		#2	67,800		

#

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Table 2 - Analytical Results (4-23-2026)

Tower		Condensate 1-2		Condensate 3-5		Condensate 6-8		Main Plant #3	
Location		B500 a/b	C1-2 Discharge	B500 c/d	C3,4,5 Discharge	B600 A	C6,7,8 Discharge	Water Reuse	Tower Basin
Analyte		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOC	Benzene	3500		1400		2700		3.9	
	Ethylbenzene	4.1		1.8		3.3			
	Toluene	270		120		210			
	Chloroform		6.5						7.5
SVOC	Acenaphthylene	2500		3100		15000			
	Naphthalene	5800		4500		10000		68	
	Benzo(a)pyrene		140		25				
	Benzo(b)fluoranthene		78		12				
	Benzo[g,h,i]perylene		210		34				
	Fluorathene						270		
	Indo[1,2,3-cd]pyrene		71		11				
	Phenathrene					6300			
	Pyrene		88			7000	660		
TDS	mg/l	<10	300	<10	990	52	150	160	560

Average Results from 3/29/2026, 3/27/2026 Analyses were used for the Naphthalene concentration for Main Plant #3 Water Reuse

Table 3 - Contact Cooling Tower VOC/HAPs PTE									
Tower Details	Name		Condensate #1 (A,B)		Condensate #2 (C,D,E)		Condensate #3 (F,G,H)		Main Plant Cooling #3
			30		30		30		60
			Slip Stream - Gal./Min		1800		1800		3600
			Slip Stream - Gal./Hr		1.8		1.8		3.6
			Slip Stream - 1000 Gal./Hr		15,768		15,768		31,536
			Slip Stream - mmgal/yr		0.0018		0.0018		0.0036
			Slip Stream - mmgal/hr		6814		6814		13627
Pollutant		Analytical Result (µg/L)		Analytical Result (µg/L)		Analytical Result (µg/L)		Analytical Result (µg/L)	
Total VOC	µg/hr	12074.1	82269793	9122	62153585	34213	233120572	71.9	979816
	lbs/hr		0.18137		0.13703		0.51394		0.00216
	TPY		0.79442		0.60017		2.25107		0.00946
Benzene	µg/hr	3500	23848094	1400	9539238	2700	18397101	3.9	53147.18145
	lbs/hr		0.05258		0.02103		0.04056		0.00012
	TPY		0.23028		0.09211		0.17765		0.00051
Ethylbenzene	µg/hr	4.1	27936	2	12265	3	22485	0	0
	lbs/hr		0.00006		0.00003		0.00005		0
	TPY		0.00027		0.00012		0.00022		0
Toluene	µg/hr	270	1839710	120	817649	210	1430886	0	0
	lbs/hr		0.00406		0.00180		0.00315		0.00000
	TPY		0.01776		0.00790		0.01382		0.00000
Acenaphthylene	µg/hr	2500	17034353	3100	21122598	15000	102206118	0	0
	lbs/hr		0.03755		0.04657		0.22533		0.00000
	TPY		0.16449		0.20397		0.98693		0.00000
Phenathrene	µg/hr	0	0	0	0	6300	42926570	0	0
	lbs/hr		0.00000		0.00000		0.09464		0.00000
	TPY		0.00000		0.00000		0.41451		0.00000
Naphthalene	µg/hr	5800	39519699	4500	30661835	10000	68137412	68	926668.8047
	lbs/hr		0.08713		0.06760		0.15022		0.00204
	TPY		0.38161		0.29608		0.65795		0.00895

Total VOC (TPY)		0.79		0.60		2.25		9.46E-03
-----------------	--	------	--	------	--	------	--	----------

2.20E-09 3.785411784	Total VOC input from slip streams for Condensate Systems 1-3		3.65	TPY
	Total VOC Input from Water ReUse System		9.46E-03	TPY
	Total VOC Input for all Contact Systems		3.66	TPY

4/23/2026 Sampling Results

HAPs Totals			
Benzene	0.50056	Tons Per Year	
Ethylbenzene	0.00061	Tons Per Year	µg/hr=L/hr*µg/L
Toluene	0.03948	Tons Per Year	lbs/hr= µg/hr* 2.20E-09
Acenaphthylene	1.35538	Tons Per Year	TPY = lbs/hr*8760/2000
Phenathrene	0.41451	Tons Per Year	

Naphthalene	1.34459	Tons Per Year
-------------	---------	---------------

Table 4 - VOC/HAP's Emission Factor Calculations

Name	Condensate #1 (A)	Condensate #1 (B)	Condensate #2 (C)	Condensate #2 (D)	Condensate #2 (E)	Condensate #3 (F)	Condensate #3 (G)	Condensate #3 (H)	Main Plant Cooling #3 (A)	Main Plant Cooling #3 (B)	Main Plant Cooling #3 (C)	Main Plant Cooling #3 (D)	Main Plant Cooling #3 (E)
ID #	131T01	131T02	131T03	131T04	131T05	131T06	131T07	131T08	112T03A	112T03B	112T03C	112T03D	112T03E
gal/min	761	761	500	500	500	660	660	660	2718.8	2718.8	2718.8	2718.8	2718.8
gal/hr	45660	45660	30000	30000	30000	39600	39600	39600	163128	163128	163128	163128	163128
mmgal/hr	0.04566	0.04566	0.03	0.03	0.03	0.0396	0.0396	0.0396	0.163128	0.163128	0.163128	0.163128	0.163128
mmgal/yr	400.0	400.0	262.8	262.8	262.8	346.9	346.9	346.9	1429.0	1429.0	1429.0	1429.0	1429.0
Number of Cells	2		3			3			5				
Total VOC													
PTE (TPY)	0.7944		0.6002			2.2511			0.0095				
PTE (lbs/yr)	794.4174	794.4174	400.1136	400.1136	400.1136	1500.7132	1500.7132	1500.7132	3.7845	3.7845	3.7845	3.7845	3.7845
Emission Factor (lb/mmgal)	1.9861	1.9861	1.5225	1.5225	1.5225	4.3261	4.3261	4.3261	2.65E-03	2.65E-03	2.65E-03	2.65E-03	2.65E-03
Benzene													
PTE (TPY)	0.2303		0.0921			0.1776			0.0005				
PTE (lbs/yr)	230.2831	230.2831	61.4088	61.4088	61.4088	118.4313	118.4313	118.4313	0.2053	0.2053	0.2053	0.2053	0.2053
Emission Factor (lb/mmgal)	0.5757	0.5757	0.2337	0.2337	0.2337	0.3414	0.3414	0.3414	1.44E-04	1.44E-04	1.44E-04	1.44E-04	1.44E-04
Ethylbenzene													
PTE (TPY)	0.0003		0.0001			0.0002			0.0000				
PTE (lbs/yr)	0.2698	0.2698	0.0790	0.0790	0.0790	0.1447	0.1447	0.1447	0.0000	0.0000	0.0000	0.0000	0.0000
Emission Factor (lb/mmgal)	0.0007	0.0007	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene													
PTE (TPY)	0.01776		0.00790			0.01382			0.00000				
PTE (lbs/yr)	17.76470	17.76470	5.26361	5.26361	5.26361	9.21132	9.21132	9.21132	0.00000	0.00000	0.00000	0.00000	0.00000
Emission Factor (lb/mmgal)	0.0444	0.0444	0.0200	0.0200	0.0200	0.0266	0.0266	0.0266	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthalene													
PTE (TPY)	0.1645		0.2040			0.9869			0.0000				
PTE (lbs/yr)	164.4879	164.4879	135.9767	135.9767	135.9767	657.9517	657.9517	657.9517	0.0000	0.0000	0.0000	0.0000	0.0000
Emission Factor (lb/mmgal)	0.4112	0.4112	0.5174	0.5174	0.5174	1.8967	1.8967	1.8967	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenathrene													
PTE (TPY)	0.0000		0.0000			0.4145			0.0000				
PTE (lbs/yr)	0.0000	0.0000	0.0000	0.0000	0.0000	276.3397	276.3397	276.3397	0.0000	0.0000	0.0000	0.0000	0.0000
Emission Factor (lb/mmgal)	0.0000	0.0000	0.0000	0.0000	0.0000	0.7966	0.7966	0.7966	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthlene													
PTE (TPY)	0.3816		0.2961			0.6580			0.0089				
PTE (lbs/yr)	381.6120	381.6120	197.3855	197.3855	197.3855	438.6345	438.6345	438.6345	3.5793	3.5793	3.5793	3.5793	3.5793
Emission Factor (lb/mmgal)	0.9541	0.9541	0.7511	0.7511	0.7511	1.2645	1.2645	1.2645	2.50E-03	2.50E-03	2.50E-03	2.50E-03	2.50E-03

$$\text{Emission Factor (lb/mmgal)} = ((\text{PTE(TPY)} \times 2000) / \text{Number of Cells}) / \text{mmgal/yr}$$

TABLE 5 - Particulate Matter Emissions

Safran Landing Systems Kentucky LLC

Description		Flowrate				Sampling Results		
		Contact/Non-			Million	Million Gallons /	TDS (Highest Inlet Value)	Drift Loss
Name	ID #	Contact	Gal./Min	Gal./Hr	Gallons/ Hr	Year		
Condensate #1 (A)	131T01	Contact	761	45660	0.04566	400.0	0.002%	270
Condensate #1 (B)	131T02	Contact	761	45660	0.04566	400.0	0.002%	270
Condensate #2 (C)	131T03	Contact	500	30000	0.03	262.8	0.002%	270
Condensate #2 (D)	131T04	Contact	500	30000	0.03	262.8	0.002%	270
Condensate #2 (E)	131T05	Contact	500	30000	0.03	262.8	0.002%	270
Condensate #3 (F)	131T06	Contact	660	39600	0.0396	346.9	0.002%	270
Condensate #3 (G)	131T07	Contact	660	39600	0.0396	346.9	0.002%	270
Condensate #3 (H)	131T08	Contact	660	39600	0.0396	346.9	0.002%	270
Main Plant Cooling #3 (A)	112T03A	Contact	2718.8	163128	0.163128	1429.0	0.002%	480
Main Plant Cooling #3 (B)	112T03B	Contact	2718.8	163128	0.163128	1429.0	0.002%	480
Main Plant Cooling #3 (C)	112T03C	Contact	2718.8	163128	0.163128	1429.0	0.002%	480
Main Plant Cooling #3 (D)	112T03D	Contact	2718.8	163128	0.163128	1429.0	0.002%	480
Main Plant Cooling #3 (E)	112T03E	Contact	2718.8	163128	0.163128	1429.0	0.002%	480
Main Plant Cooling #1 (A)	112T01A	Non-Contact	1133	67980	0.06798	595.5	0.002%	460
Main Plant Cooling #1 (B)	112T01B	Non-Contact	1133	67980	0.06798	595.5	0.002%	460
Main Plant Cooling #1 (C)	112T01C	Non-Contact	1133	67980	0.06798	595.5	0.002%	460
Main Plant Cooling #2 (A)	112T02A	Non-Contact	680	40800	0.0408	357.4	0.002%	460
Main Plant Cooling #2 (B)	112T02B	Non-Contact	680	40800	0.0408	357.4	0.002%	460
RFPC Tower #1	112T1	Non-Contact	1130	67800	0.0678	593.9	0.002%	460
RFPC Tower #2	112T2	Non-Contact	1130	67800	0.0678	593.9	0.002%	460
Accelerating Cooling #1	1210	Non-Contact	715	42900	0.0429	375.8	0.002%	750
Accelerating Cooling #2	12100	Non-Contact	715	42900	0.0429	375.8	0.002%	750

8.34 Water lb/gal

31.3% * EPA. 1979. *Effects of Pathogenic and Toxic Material Transport Via Cooling Device Drift - Vol. 1 Technical Report*. EPA-600/7-79-251a. November 1979.

22.1% ** Maximum droplet size governed by atmospheric dispersion. Larger droplets fall to the ground before evaporating into a particle (EPA 1979).

5.7%

TABLE 5 - Particulate Matter Emissions

Safran Landing Systems Kentucky LLC

Drift Loss	Calculations						Emission Factors		
	Particulate Matter		PM ₁₀		PM _{2.5}				
Annual Drift Loss Water (lbs per hr)	PM lb/hr	PM ton/yr	PM ₁₀ lb/hr	PM ₁₀ ton/yr	PM _{2.5} lb/hr	PM _{2.5} ton/yr	PM lb/mmgal	PM ₁₀ lb/mmgal	PM _{2.5} lb/mmgal
7.6161	0.0006	0.0028	0.0005	0.0020	0.0001	0.0005	0.014	0.0100	0.0026
7.6161	0.0006	0.0028	0.0005	0.0020	0.0001	0.0005	0.014	0.0100	0.0026
5.0040	0.0004	0.0019	0.0003	0.0013	0.0001	0.0003	0.014	0.0100	0.0026
5.0040	0.0004	0.0019	0.0003	0.0013	0.0001	0.0003	0.014	0.0100	0.0026
5.0040	0.0004	0.0019	0.0003	0.0013	0.0001	0.0003	0.014	0.0100	0.0026
6.6053	0.0006	0.0024	0.0004	0.0017	0.0001	0.0004	0.014	0.0100	0.0026
6.6053	0.0006	0.0024	0.0004	0.0017	0.0001	0.0004	0.014	0.0100	0.0026
6.6053	0.0006	0.0024	0.0004	0.0017	0.0001	0.0004	0.014	0.0100	0.0026
27.2098	0.0041	0.0179	0.0029	0.0126	0.0007	0.0033	0.025	0.0177	0.0046
27.2098	0.0041	0.0179	0.0029	0.0126	0.0007	0.0033	0.025	0.0177	0.0046
27.2098	0.0041	0.0179	0.0029	0.0126	0.0007	0.0033	0.025	0.0177	0.0046
27.2098	0.0041	0.0179	0.0029	0.0126	0.0007	0.0033	0.025	0.0177	0.0046
27.2098	0.0041	0.0179	0.0029	0.0126	0.0007	0.0033	0.025	0.0177	0.0046
CONTACT TOWERS	0.0247	0.1081	0.0174	0.0763	0.0045	0.0197			
11.3391	0.0016	0.0072	0.0012	0.0050	0.0003	0.0013	0.024	0.0170	0.0044
11.3391	0.0016	0.0072	0.0012	0.0050	0.0003	0.0013	0.024	0.0170	0.0044
11.3391	0.0016	0.0072	0.0012	0.0050	0.0003	0.0013	0.024	0.0170	0.0044
6.8054	0.0010	0.0043	0.0007	0.0030	0.0002	0.0008	0.024	0.0170	0.0044
6.8054	0.0010	0.0043	0.0007	0.0030	0.0002	0.0008	0.024	0.0170	0.0044
11.3090	0.0016	0.0071	0.0011	0.0050	0.0003	0.0013	0.024	0.0170	0.0044
11.3090	0.0016	0.0071	0.0011	0.0050	0.0003	0.0013	0.024	0.0170	0.0044
7.1557	0.0017	0.0074	0.0012	0.0052	0.0003	0.0013	0.039	0.0276	0.0071
7.1557	0.0017	0.0074	0.0012	0.0052	0.0003	0.0013	0.039	0.0276	0.0071
NON-CONTACT TOWERS	0.0135	0.0590	0.0095	0.0417	0.0025	0.0107			
TOTAL PM	0.0381	0.1671							
TOTAL PM10	0.0269	0.1180							
TOTAL PM2.5	0.0069	0.0304							

Sampling Occurred on 6,7,8 Applying that value for towers 1-5
 Non Contact Towers use Highest value from July 2025 Sampling
 Refrenced Cooling Tower PM Calculator Tab for calculations

$annual\ drift\ loss\ water\ (lb/hr) = gal/min * 8.34 * drift\ loss * 60$

$pm\ lb/hr = annual\ drift\ loss\ water * tds / 1000000 * 31.3\%$

$pm_{10}\ lb/hr = annual\ drift\ loss\ water * tds / 1000000 * 22.1\%$

$pm_{2.5}\ lb/hr = annual\ drift\ loss\ water * tds / 1000000 * 5.7\%$

$pm\ ton/yr = pm\ lb/hr * 8760 / 2000$

$lb/mmgal = (ton/yr * 2000) / (MillionGallons/yr)$

Figure #1 - Condensate Towers 1-3 Process Flow Diagram

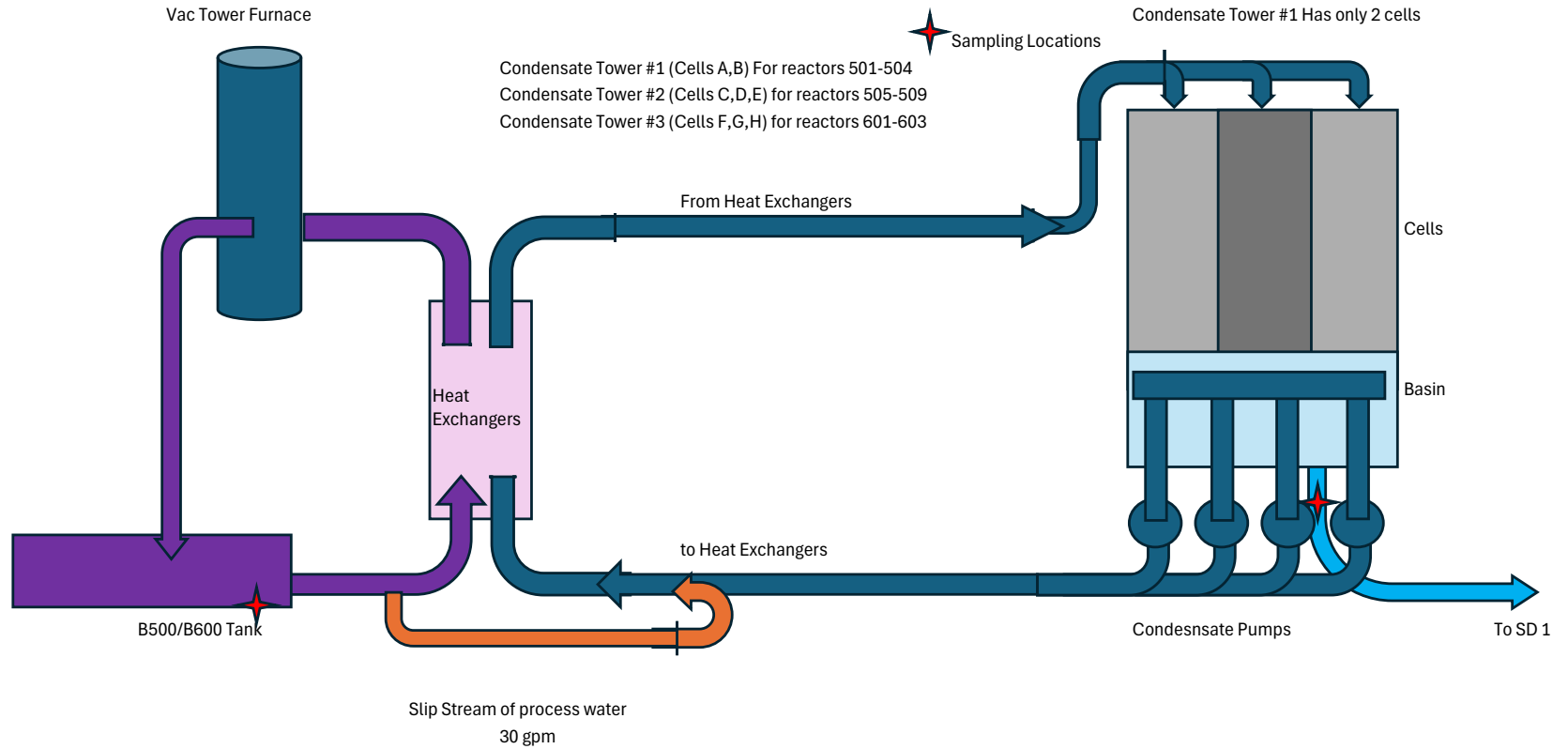
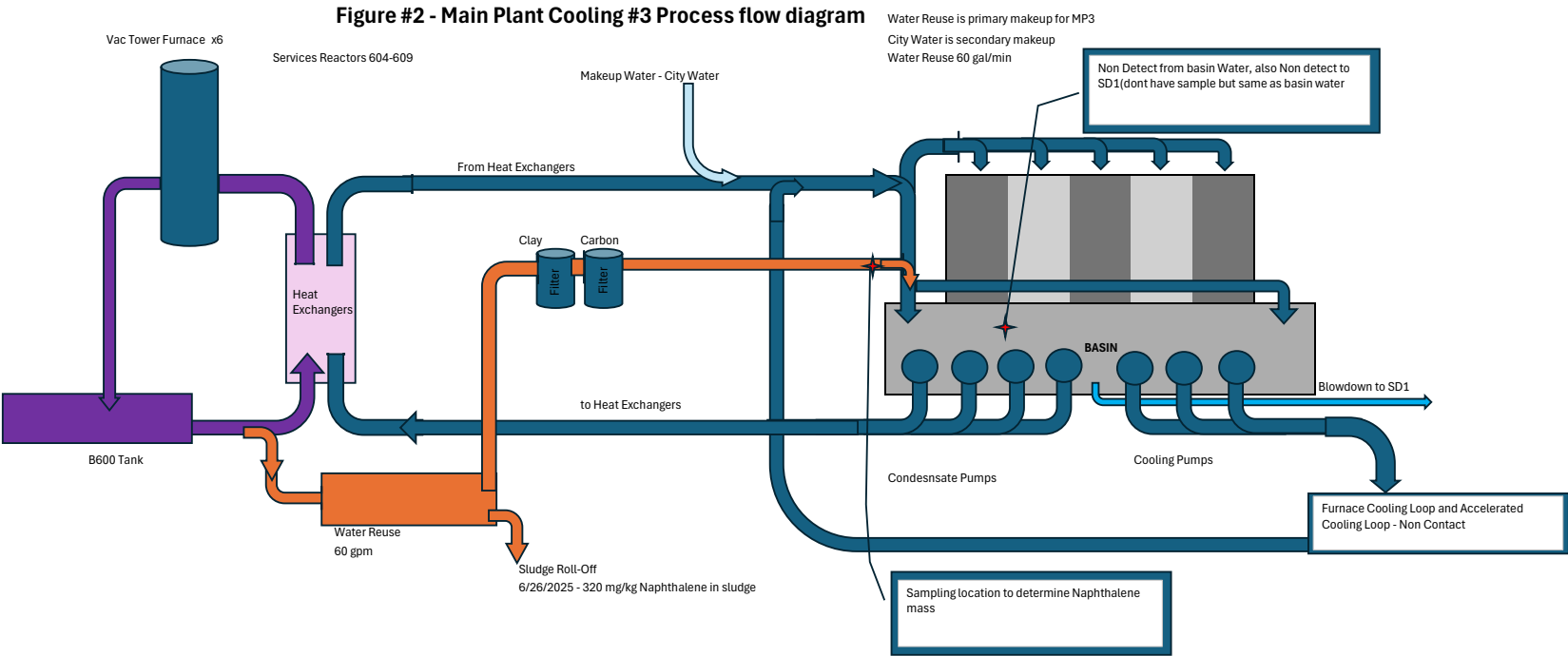


Figure #2 - Main Plant Cooling #3 Process flow diagram



Water Reuse is primary makeup for MP3
City Water is secondary makeup
Water Reuse 60 gal/min

Non Detect from basin Water, also Non detect to SD1(dont have sample but same as basin water)

Sampling location to determine Naphthalene mass

Basin Capacity	1 ft thick walls		Cubic Feet	1	7.480519	gallon
Length	73	71	9585			71700.78
Width	20.75	18.75			liter	271417
Height	7.2	7.2				3.785412

Using 68ug/L the concentration in the basin should be 250.54 ppb(ug/L)

68/1000 0.068 271417 *1000000000

250.537 should be detectable in basin sample. Was not

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007B

Manufacturing or Processing Operations

- ___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N,
DEP7007V, and DEP7007GG.

- ___ Attach a flow diagram
___ Attach SDS

Source Name: Safran Lanfing Systems Kentucky, LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 5/22/2026

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process <u>Continuous</u> or <u>Batch</u> ?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU04	Accelerated Cooling #1	Non-Contact Water Cooling Tower	1210	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	FXV-0641	12/2012	Continuous	n/a	n/a
EU04	Accelerated Cooling #2	Non-Contact Water Cooling Tower	12100	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	FXV-0641	12/2012	Continuous	n/a	n/a
EU04	Main Plant Cooling #1 (A)	Non-Contact Water Cooling Tower	112T01A	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	3412C	09/1998	Continuous	n/a	n/a
EU04	Main Plant Cooling #1 (B)	Non-Contact Water Cooling Tower	112T01B	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	3412C	09/1998	Continuous	n/a	n/a
EU04	Main Plant Cooling #1 (C)	Non-Contact Water Cooling Tower	112T01C	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	3412C	09/1998	Continuous	n/a	n/a
EU04	Main Plant Cooling #2 (A)	Non-Contact Water Cooling Tower	112T02A	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1-375-P	12/2012	Continuous	n/a	n/a

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU04	Main Plant Cooling #2 (B)	Non-Contact Water Cooling Tower	112T02B	Non-Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1-375-P	12/2012	Continuous	n/a	n/a
EU04	RFPC Tower #1	Non-Contact Water Cooling Tower	112T1	Non-Contact Water Cooling Tower	evapco	P-6	06/2018	Continuous	n/a	n/a
EU04	RFPC Tower #2	Non-Contact Water Cooling Tower	112T2	Non-Contact Water Cooling Tower	evapco	P-6	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (A)	Contact Water Cooling Tower	112T03A	Contact Water Cooling Tower	Baltimore Aircoil Compnay	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (B)	Contact Water Cooling Tower	112T03B	Contact Water Cooling Tower	Baltimore Aircoil Compnay	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (C)	Contact Water Cooling Tower	112T03C	Contact Water Cooling Tower	Baltimore Aircoil Compnay	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (D)	Contact Water Cooling Tower	112T03D	Contact Water Cooling Tower	Baltimore Aircoil Compnay	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Main Plant Cooling #3 (E)	Contact Water Cooling Tower	112T03E	Contact Water Cooling Tower	Baltimore Aircoil Compnay	S3E-1424-13R-5	06/2018	Continuous	n/a	n/a
EU04	Condensate #1 (A)	Contact Water Cooling Tower	131T01	Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #1 (B)	Contact Water Cooling Tower	131T02	Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #2 (A)	Contact Water Cooling Tower	131T03	Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #2 (B)	Contact Water Cooling Tower	131T04	Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1 340	09/1998	Continuous	n/a	n/a
EU04	Condensate #2 (C)	Contact Water Cooling Tower	131T05	Contact Water Cooling Tower	Baltimore Aircoil Compnay	VT1 340	12/2012	Continuous	n/a	n/a

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process <u>Continuous</u> or <u>Batch</u> ?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU04	Condensate #3 (A)	Contact Water Cooling Tower	131T06	Contact Water Cooling Tower	Baltimore Aircoil Compnay	3412C	12/2012	Continuous	n/a	n/a
EU04	Condensate #3 (B)	Contact Water Cooling Tower	131T07	Contact Water Cooling Tower	Baltimore Aircoil Compnay	3412C	12/2012	Continuous	n/a	n/a
EU04	Condensate #3 (C)	Contact Water Cooling Tower	131T08	Contact Water Cooling Tower	Baltimore Aircoil Compnay	3412C	12/2012	Continuous	n/a	n/a

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU04	Accelerated Cooling #1	Process Water	42,900	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Accelerated Cooling #2	Process Water	42,900	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #1 (A)	Process Water	67,980	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #1 (B)	Process Water	67,980	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #1 (C)	Process Water	67,980	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #2 (A)	Process Water	40,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #2 (B)	Process Water	40,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	RFPC Tower #1	Process Water	67,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	RFPC Tower #2	Process Water	67,800	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (A)	Process Water	163,128	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU04	Main Plant Cooling #3 (B)	Process Water	163,128	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (C)	Process Water	163,128	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (D)	Process Water	163,128	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Main Plant Cooling #3 (E)	Process Water	163,128	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #1 (A)	Process Water	45,660	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #1 (B)	Process Water	45,660	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #2 (A)	Process Water	30,000	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #2 (B)	Process Water	30,000	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #2 (C)	Process Water	30,000	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #3 (A)	Process Water	39,600	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EU04	Condensate #3 (B)	Process Water	39,600	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU04	Condensate #3 (C)	Process Water	39600	gal/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Section B.3: Notes, Comments, and Explanations

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999				DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations										Additional Documentation ___ Complete DEP7007AI							
Source Name:				Safran Landing Systems Kentucky, LLC																	
KY EIS (AFS) #:				21- 015-00125																	
Permit #:				F-13-023 R4																	
Agency Interest (AI) ID:				137																	
Date:				5/22/2026																	
N.1: Emission Summary																					
Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions						
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)					
EU04	Condensate Tower #1 (A)	131TO1	Contact Water Cooling Tower	N/A	N/A	C1-A	.04566 mmgal/hr	Total VOC	1.986	Analytical Data, Water Sample	N/A	N/A	0.9069	N/A	0.39721	N/A					
EU04	Condensate Tower #1 (A)	131TO1	Contact Water Cooling Tower	N/A	N/A	C1-A	.04566 mmgal/hr	Benzene	0.576	Analytical Data, Water Sample	N/A	N/A	0.0263	N/A	0.11514	N/A					
EU04	Condensate Tower #1 (A)	131TO1	Contact Water Cooling Tower	N/A	N/A	C1-A	.04566 mmgal/hr	Ethylbenzne	0.001	Analytical Data, Water Sample	N/A	N/A	0.00003	N/A	0.00013	N/A					
EU04	Condensate Tower #1 (A)	131TO1	Contact Water Cooling Tower	N/A	N/A	C1-A	.04566 mmgal/hr	Toluene	0.044	Analytical Data, Water Sample	N/A	N/A	0.00203	N/A	0.00888	N/A					

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Condensate Tower #1 (A)	131TO1	Contact Water Cooling Tower	N/A	N/A	C1-A	.04566 mmgal/hr	Acenaphthylene	0.411	Analytical Data, Water Sample	N/A	N/A	0.01878	N/A	0.08224	N/A
EU04	Condensate Tower #1 (A)	131TO1	Contact Water Cooling Tower	N/A	N/A	C1-A	.04566 mmgal/hr	Naphthalene	0.954	Analytical Data, Water Sample	N/A	N/A	0.0436	N/A	0.19081	N/A
EU04	Condensate Tower #1 (B)	131TO2	Contact Water Cooling Tower	N/A	N/A	C1-B	0.04566 mmgal/hr	Total VOC	1.523	Analytical Data, Water Sample	N/A	N/A	0.9069	N/A	0.39721	N/A
EU04	Condensate Tower #1 (B)	131TO2	Contact Water Cooling Tower	N/A	N/A	C1-B	0.04566 mmgal/hr	Benzene	0.234	Analytical Data, Water Sample	N/A	N/A	0.0263	N/A	0.11514	N/A
EU04	Condensate Tower #1 (B)	131TO2	Contact Water Cooling Tower	N/A	N/A	C1-B	0.04566 mmgal/hr	Ethylbenzene	0.0003	Analytical Data, Water Sample	N/A	N/A	0.00003	N/A	0.00013	N/A
EU04	Condensate Tower #1 (B)	131TO2	Contact Water Cooling Tower	N/A	N/A	C1-B	0.04566 mmgal/hr	Toluene	0.02	Analytical Data, Water Sample	N/A	N/A	0.00203	N/A	0.00888	N/A
EU04	Condensate Tower #1 (B)	131TO2	Contact Water Cooling Tower	N/A	N/A	C1-B	0.04566 mmgal/hr	Acenaphthylene	0.517	Analytical Data, Water Sample	N/A	N/A	0.01878	N/A	0.08224	N/A
EU04	Condensate Tower #1 (B)	131TO2	Contact Water Cooling Tower	N/A	N/A	C1-B	0.04566 mmgal/hr	Naphthalene	0.751	Analytical Data, Water Sample	N/A	N/A	0.0436	N/A	0.19081	N/A

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C1-A	Condensate #1A	13.11	33.5	860	38.92293	-84.60951			
C1-B	Condensate #1B	13.11	33.5	860	38.92293	-84.60947			
C2-A	Condensate #2A	13.11	33.5	860	38.9229	-84.60921			
C2-B	Condensate #2B	13.11	33.5	860	38.9229	-84.60917			
C2-C	Condensate #2C	13.11	33.5	860	38.92289	-84.60909			
C3-A	Condensate #3A	13.11	33.5	860	38.92287	-84.60893			
C3-B	Condensate #3B	13.11	33.5	860	38.92286	-84.60888			
C3-C	Condensate #3C	13.11	33.5	855	38.92286	-84.6088			
MP3-A	Main Plant Cooling #3A	12	28	855	38.92265	-84.60804			

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
MP3-B	Main Plant Cooling #3B	12	28	855	38.92264	-84.60799			
MP3-C	Main Plant Cooling #3C	12	28	855	38.92263	-84.60794			
MP3-D	Main Plant Cooling #3D	12	28	855	38.92263	-84.60879			
MP3-E	Main Plant Cooling #3E	12	28	855	38.92262	-84.60784			

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Analytical Results are from April 23rd, 2026 sampling event. The inlet of the slip stream and the outlet of the tower basins were sampled. The inlet concentrations were used for the calculations to determine mass of VOC and HAPs that could be in the tower. This is based on a slip stream flow of 30 GPM for Condensate Towers 1-3 and 60 GPM for Main plant #3.

Included is process drawings showing the sampling locations as well as the analytical data.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999				DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations Additional Documentation ___ Complete DEP7007AI													
Source Name:				Safran Landing Systems Kentucky, LLC													
KY EIS (AFS) #:				21- 015-00125													
Permit #:				F-13-023 R4													
Agency Interest (AI) ID:				137													
Date:				5/21/2026													
N.1: Emission Summary																	
Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions		
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)	
EU04	Condensate Tower #2 (A)	131TO4	Contact Water Cooling Tower	N/A	N/A	C2-A	0.03 mmgal/hr	VOC	1.5225	Analytical Data, Water Sample	N/A	N/A	0.04568	N/A	0.20006	N/A	
EU04	Condensate Tower #2 (A)	131TO4	Contact Water Cooling Tower	N/A	N/A	C2-A	0.03 mmgal/hr	Benzene	0.2337	Analytical Data, Water Sample	N/A	N/A	0.00701	N/A	0.0307	N/A	
EU04	Condensate Tower #2 (A)	131TO4	Contact Water Cooling Tower	N/A	N/A	C2-A	0.03 mmgal/hr	Ethylbenzne	0.0003	Analytical Data, Water Sample	N/A	N/A	0.00001	N/A	0.00004	N/A	
EU04	Condensate Tower #2 (A)	131TO4	Contact Water Cooling Tower	N/A	N/A	C2-A	0.03 mmgal/hr	Toluene	0.02	Analytical Data, Water Sample	N/A	N/A	0.0006	N/A	0.00263	N/A	

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Condensate Tower #2 (A)	131TO4	Contact Water Cooling Tower	N/A	N/A	C2-A	0.03 mmgal/hr	Acenaphthylene	0.5174	Analytical Data, Water Sample	N/A	N/A	0.01552	N/A	0.06799	N/A
EU04	Condensate Tower #2 (A)	131TO4	Contact Water Cooling Tower	N/A	N/A	C2-A	0.03 mmgal/hr	Naphthalene	0.7511	Analytical Data, Water Sample	N/A	N/A	0.02253	N/A	0.09869	N/A
EU04	Condensate Tower #2 (B)	131TO5	Contact Water Cooling Tower	N/A	N/A	C2-B	0.03 mmgal/hr	VOC	1.5225	Analytical Data, Water Sample	N/A	N/A	0.04568	N/A	0.20006	N/A
EU04	Condensate Tower #2 (B)	131TO5	Contact Water Cooling Tower	N/A	N/A	C2-B	0.03 mmgal/hr	Benzene	0.2337	Analytical Data, Water Sample	N/A	N/A	0.00701	N/A	0.0307	N/A
EU04	Condensate Tower #2 (B)	131TO5	Contact Water Cooling Tower	N/A	N/A	C2-B	0.03 mmgal/hr	Ethylbenzene	0.0003	Analytical Data, Water Sample	N/A	N/A	0.00001	N/A	0.00004	N/A
EU04	Condensate Tower #2 (B)	131TO5	Contact Water Cooling Tower	N/A	N/A	C2-B	0.03 mmgal/hr	Toluene	0.02	Analytical Data, Water Sample	N/A	N/A	0.0006	N/A	0.00263	N/A
EU04	Condensate Tower #2 (B)	131TO5	Contact Water Cooling Tower	N/A	N/A	C2-B	0.03 mmgal/hr	Acenaphthylene	0.5174	Analytical Data, Water Sample	N/A	N/A	0.01552	N/A	0.06799	N/A
EU04	Condensate Tower #2 (B)	131TO5	Contact Water Cooling Tower	N/A	N/A	C2-B	0.03 mmgal/hr	Naphthalene	0.7511	Analytical Data, Water Sample	N/A	N/A	0.02253	N/A	0.09869	N/A

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Condensate Tower #2 (C)	131TO6	Contact Water Cooling Tower	N/A	N/A	C2-C	0.03 mmgal/hr	VOC	1.5225	Analytical Data, Water Sample	N/A	N/A	0.04568	N/A	0.20006	N/A
EU04	Condensate Tower #2 (C)	131TO6	Contact Water Cooling Tower	N/A	N/A	C2-C	0.03 mmgal/hr	Benzene	0.2337	Analytical Data, Water Sample	N/A	N/A	0.00701	N/A	0.0307	N/A
EU04	Condensate Tower #2 (C)	131TO6	Contact Water Cooling Tower	N/A	N/A	C2-C	0.03 mmgal/hr	Ethylbenzne	0.0003	Analytical Data, Water Sample	N/A	N/A	0.00001	N/A	0.00004	N/A
EU04	Condensate Tower #2 (C)	131TO6	Contact Water Cooling Tower	N/A	N/A	C2-C	0.03 mmgal/hr	Toluene	0.02	Analytical Data, Water Sample	N/A	N/A	0.0006	N/A	0.00263	N/A
EU04	Condensate Tower #2 (C)	131TO6	Contact Water Cooling Tower	N/A	N/A	C2-C	0.03 mmgal/hr	Acenaphthylene	0.5174	Analytical Data, Water Sample	N/A	N/A	0.01552	N/A	0.06799	N/A
EU04	Condensate Tower #2 (C)	131TO6	Contact Water Cooling Tower	N/A	N/A	C2-C	0.03 mmgal/hr	Naphthalene	0.7511	Analytical Data, Water Sample	N/A	N/A	0.02253	N/A	0.09869	N/A

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C1-A	Condensate #1A	13.11	33.5	860	38.92293	-84.60951			
C1-B	Condensate #1B	13.11	33.5	860	38.92293	-84.60947			
C2-A	Condensate #2A	13.11	33.5	860	38.9229	-84.60921			
C2-B	Condensate #2B	13.11	33.5	860	38.9229	-84.60917			
C2-C	Condensate #2C	13.11	33.5	860	38.92289	-84.60909			
C3-A	Condensate #3A	13.11	33.5	860	38.92287	-84.60893			
C3-B	Condensate #3B	13.11	33.5	860	38.92286	-84.60888			
C3-C	Condensate #3C	13.11	33.5	855	38.92286	-84.6088			
MP3-A	Main Plant Cooling #3A	12	28	855	38.92265	-84.60804			

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
MP3-B	Main Plant Cooling #3B	12	28	855	38.92264	-84.60799			
MP3-C	Main Plant Cooling #3C	12	28	855	38.92263	-84.60794			
MP3-D	Main Plant Cooling #3D	12	28	855	38.92263	-84.60879			
MP3-E	Main Plant Cooling #3E	12	28	855	38.92262	-84.60784			

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side <i>(ft)</i>	Length of the Y Side <i>(ft)</i>	Northing <i>(m)</i>	Easting <i>(m)</i>	Release Temperature <i>(°F)</i>	Release Height <i>(ft)</i>

Section N.4: Notes, Comments, and Explanations

Analytical Results are from April 23rd, 2026 sampling event. The inlet of the slip stream and the outlet of the tower basins were sampled. The inlet concentrations were used for the calculations to determine mass of VOC and HAPs that could be in the tower. This is based on a slip stream flow of 30 GPM for Condensate Towers 1-3 and 60 GPM for Main plant #3.

Included is process drawings showing the sampling locations as well as the analytical data.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999				DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations										Additional Documentation ___ Complete DEP7007AI							
Source Name:				Safran Landing Systems Kentucky, LLC																	
KY EIS (AFS) #:				21- 015-00125																	
Permit #:				F-13-023 R4																	
Agency Interest (AI) ID:				137																	
Date:				5/21/2026																	
N.1: Emission Summary																					
Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions						
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)					
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	VOC	4.326	Analytical Data, Water Sample	N/A	N/A	0.17131	N/A	0.75036	N/A					
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	Benzene	0.341	Analytical Data, Water Sample	N/A	N/A	0.01352	N/A	0.05922	N/A					
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	Ethylbenzne	0.0004	Analytical Data, Water Sample	N/A	N/A	0.00002	N/A	0.00007	N/A					
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	Toluene	0.027	Analytical Data, Water Sample	N/A	N/A	0.00105	N/A	0.00461	N/A					

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	Acenaphthylene	1.897	Analytical Data, Water Sample	N/A	N/A	0.07511	N/A	0.32898	N/A
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	Phenathrene	0.797	Analytical Data, Water Sample	N/A	N/A	0.03155	N/A	0.13817	N/A
EU04	Condensate Tower #3 (A)	131TO6	Contact Water Cooling Tower	N/A	N/A	C3-A	0.0396 mmgal/hr	Naphthalene	1.264	Analytical Data, Water Sample	N/A	N/A	0.05007	N/A	0.21932	N/A
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	VOC	4.326	Analytical Data, Water Sample	N/A	N/A	0.17131	N/A	0.75036	N/A
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	Benzene	0.341	Analytical Data, Water Sample	N/A	N/A	0.01352	N/A	0.05922	N/A
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	Ethylbenzne	0.0004	Analytical Data, Water Sample	N/A	N/A	0.00002	N/A	0.00007	N/A
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	Toluene	0.027	Analytical Data, Water Sample	N/A	N/A	0.00105	N/A	0.00461	N/A
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	Acenaphthylene	1.897	Analytical Data, Water Sample	N/A	N/A	0.07511	N/A	0.32898	N/A

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	Phenathrene	0.797	Analytical Data, Water Sample	N/A	N/A	0.03155	N/A	0.13817	N/A
EU04	Condensate Tower #3 (B)	131TO7	Contact Water Cooling Tower	N/A	N/A	C3-B	0.0396 mmgal/hr	Naphthalene	1.264	Analytical Data, Water Sample	N/A	N/A	0.05007	N/A	0.21932	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	VOC	4.326	Analytical Data, Water Sample	N/A	N/A	0.17131	N/A	0.75036	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	Benzene	0.341	Analytical Data, Water Sample	N/A	N/A	0.01352	N/A	0.05922	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	Ethylbenzne	0.0004	Analytical Data, Water Sample	N/A	N/A	0.00002	N/A	0.00007	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	Toluene	0.027	Analytical Data, Water Sample	N/A	N/A	0.00105	N/A	0.00461	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	Acenaphthylene	1.897	Analytical Data, Water Sample	N/A	N/A	0.07511	N/A	0.32898	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	Phenathrene	0.797	Analytical Data, Water Sample	N/A	N/A	0.03155	N/A	0.13817	N/A
EU04	Condensate Tower #3 (C)	131TO8	Contact Water Cooling Tower	N/A	N/A	C3-C	0.0396 mmgal/hr	Naphthalene	1.264	Analytical Data, Water Sample	N/A	N/A	0.05007	N/A	0.21932	N/A

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C1-A	Condensate #1A	13.11	33.5	860	38.92293	-84.60951			
C1-B	Condensate #1B	13.11	33.5	860	38.92293	-84.60947			
C2-A	Condensate #2A	13.11	33.5	860	38.9229	-84.60921			
C2-B	Condensate #2B	13.11	33.5	860	38.9229	-84.60917			
C2-C	Condensate #2C	13.11	33.5	860	38.92289	-84.60909			
C3-A	Condensate #3A	13.11	33.5	860	38.92287	-84.60893			
C3-B	Condensate #3B	13.11	33.5	860	38.92286	-84.60888			
C3-C	Condensate #3C	13.11	33.5	855	38.92286	-84.6088			
MP3-A	Main Plant Cooling #3A	12	28	855	38.92265	-84.60804			

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
MP3-B	Main Plant Cooling #3B	12	28	855	38.92264	-84.60799			
MP3-C	Main Plant Cooling #3C	12	28	855	38.92263	-84.60794			
MP3-D	Main Plant Cooling #3D	12	28	855	38.92263	-84.60879			
MP3-E	Main Plant Cooling #3E	12	28	855	38.92262	-84.60784			

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Analytical Results are from April 23rd, 2026 sampling event. The inlet of the slip stream and the outlet of the tower basins were sampled. The inlet concentrations were used for the calculations to determine mass of VOC and HAPs that could be in the tower. This is based on a slip stream flow of 30 GPM for Condensate Towers 1-3 and 60 GPM for Main plant #3.

Included is process drawings showing the sampling locations as well as the analytical data.

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

- ___ Section N.1: Emission Summary
___ Section N.2: Stack Information
___ Section N.3: Fugitive Information
___ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name:

Safran Landing Systems Kentucky, LLC

KY EIS (AFS) #:

21- 015-00125

Permit #:

F-13-023 R4

Agency Interest (AI) ID:

137

Date:

5/22/2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Main Plant Cooling #3 (A)	112TO3A	Contact Water Cooling Tower	N/A	N/A	MP3-(A)	0..163128 mmgal/hr	VOC	0.00265	Analytical Data, Water Sample	N/A	N/A	0.000432	N/A	0.001892	N/A
EU04	Main Plant Cooling #3 (A)	112TO3A	Contact Water Cooling Tower	N/A	N/A	MP3-(A)	0..163128 mmgal/hr	Benzene	0.00014	Analytical Data, Water Sample	N/A	N/A	0.000023	N/A	0.000103	N/A
EU04	Main Plant Cooling #3 (A)	112TO3A	Contact Water Cooling Tower	N/A	N/A	MP3-(A)	0..163128 mmgal/hr	Naphthalene	0.00250	Analytical Data, Water Sample	N/A	N/A	0.000409	N/A	0.001790	N/A
EU04	Main Plant Cooling #3 (B)	112TO3B	Contact Water Cooling Tower	N/A	N/A	MP3-(B)	0..163128 mmgal/hr	VOC	0.00265	Analytical Data, Water Sample	N/A	N/A	0.000432	N/A	0.001892	N/A
EU04	Main Plant Cooling #3 (B)	112TO3B	Contact Water Cooling Tower	N/A	N/A	MP3-(B)	0..163128 mmgal/hr	Benzene	0.00014	Analytical Data, Water Sample	N/A	N/A	0.000023	N/A	0.000103	N/A

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU04	Main Plant Cooling #3 (B)	112TO3B	Contact Water Cooling Tower	N/A	N/A	MP3-(B)	0..163128 mmgal/hr	Naphthalene	0.00250	Analytical Data, Water Sample	N/A	N/A	0.000409	N/A	0.001790	N/A
EU04	Main Plant Cooling #3 (C)	112TO3C	Contact Water Cooling Tower	N/A	N/A	MP3-(C)	0..163128 mmgal/hr	VOC	0.00265	Analytical Data, Water Sample	N/A	N/A	0.000432	N/A	0.001892	N/A
EU04	Main Plant Cooling #3 (C)	112TO3C	Contact Water Cooling Tower	N/A	N/A	MP3-(C)	0..163128 mmgal/hr	Benzene	0.00014	Analytical Data, Water Sample	N/A	N/A	0.000023	N/A	0.000103	N/A
EU04	Main Plant Cooling #3 (C)	112TO3C	Contact Water Cooling Tower	N/A	N/A	MP3-(C)	0..163128 mmgal/hr	Naphthalene	0.00250	Analytical Data, Water Sample	N/A	N/A	0.000409	N/A	0.001790	N/A
EU04	Main Plant Cooling #3 (D)	112TO3D	Contact Water Cooling Tower	N/A	N/A	MP3-(D)	0..163128 mmgal/hr	VOC	0.00265	Analytical Data, Water Sample	N/A	N/A	0.000432	N/A	0.001892	N/A
EU04	Main Plant Cooling #3 (D)	112TO3D	Contact Water Cooling Tower	N/A	N/A	MP3-(D)	0..163128 mmgal/hr	Benzene	0.00014	Analytical Data, Water Sample	N/A	N/A	0.000023	N/A	0.000103	N/A
EU04	Main Plant Cooling #3 (D)	112TO3D	Contact Water Cooling Tower	N/A	N/A	MP3-(D)	0..163128 mmgal/hr	Naphthalene	0.00250	Analytical Data, Water Sample	N/A	N/A	0.000409	N/A	0.001790	N/A
EU04	Main Plant Cooling #3 €	112TO3E	Contact Water Cooling Tower	N/A	N/A	MP3-(E)	0..163128 mmgal/hr	VOC	0.00265	Analytical Data, Water Sample	N/A	N/A	0.000432	N/A	0.001892	N/A
EU04	Main Plant Cooling #3 €	112TO3E	Contact Water Cooling Tower	N/A	N/A	MP3-(E)	0..163128 mmgal/hr	Benzene	0.00014	Analytical Data, Water Sample	N/A	N/A	0.000023	N/A	0.000103	N/A
EU04	Main Plant Cooling #3 €	112TO3E	Contact Water Cooling Tower	N/A	N/A	MP3-(E)	0..163128 mmgal/hr	Naphthalene	0.00250	Analytical Data, Water Sample	N/A	N/A	0.000409	N/A	0.001790	N/A

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
C1-A	Condensate #1A	13.11	33.5	860	38.92293	-84.60951			
C1-B	Condensate #1B	13.11	33.5	860	38.92293	-84.60947			
C2-A	Condensate #2A	13.11	33.5	860	38.9229	-84.60921			
C2-B	Condensate #2B	13.11	33.5	860	38.9229	-84.60917			
C2-C	Condensate #2C	13.11	33.5	860	38.92289	-84.60909			
C3-A	Condensate #3A	13.11	33.5	860	38.92287	-84.60893			
C3-B	Condensate #3B	13.11	33.5	860	38.92286	-84.60888			
C3-C	Condensate #3C	13.11	33.5	855	38.92286	-84.6088			
MP3-A	Main Plant Cooling #3A	12	28	855	38.92265	-84.60804			

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
MP3-B	Main Plant Cooling #3B	12	28	855	38.92264	-84.60799			
MP3-C	Main Plant Cooling #3C	12	28	855	38.92263	-84.60794			
MP3-D	Main Plant Cooling #3D	12	28	855	38.92263	-84.60879			
MP3-E	Main Plant Cooling #3E	12	28	855	38.92262	-84.60784			

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)

Section N.4: Notes, Comments, and Explanations

Analytical Results are from April 23rd, 2026 sampling event. The inlet of the slip stream and the outlet of the tower basins were sampled. The inlet concentrations were used for the calculations to determine mass of VOC and HAPs that could be in the tower. This is based on a slip stream flow of 30 GPM for Condensate Towers 1-3 and 60 GPM for Main plant #3.

Included is process drawings showing the sampling locations as well as the analytical data.



June 16, 2026

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Air Permit Support Section
300 Sower Boulevard
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC - TAP - BACT Response
Source ID: 21-015-00125
AI#: 137
Activity APE20170005; APE20180004

Dear Sir or Madam:

In response to the TAP-BACT determination letter sent on January 26, 2026, Safran Landing Systems Kentucky LLC (SLS) has determined the following:

1. Hexavalent Chromium from the Rework Oven:

- i. The rework oven is used for parts that need touch-up painting. Parts that need touch-up use ~15mL of paint. This is brushed on with no particulate matter (PM, hexavalent chromium) emissions expected from the paint's application. Since the oven temperature does not exceed 300F, the only emissions expected from this activity are volatile organic compound (VOC) emissions. VOC emission calculations are presented in Table 1. This is based on 1 part per hour for 8760 hours in the year.
- ii. Parts requiring >15 mL of paint are sent back through the primer and topcoat line for full rework; these emissions are accounted for in the paint line calculations.
- iii. On January 27, 2026, an updated 7007DD form was submitted for this activity.

2. Naphthalene Emissions from the Contact Towers:

- i. In response to the site wide naphthalene emissions potential, Safran Landing Systems commits the capital budget and resources to design and install a water reuse system that will reduce the loading of naphthalene/VOC's in the cooling water that makes it to the condensate towers.
- ii. Safran currently operates a water reuse system that serves reactors 604-609, which provides factual evidence that naphthalene/VOC loading in the cooling

water can be reduced sufficiently. The current system will be Safran's starting point for treatment of the cooling water for reactors 501-509 and 601-603.

iii. The current process flow for condensate towers 1-3 (towers A-H), as seen in the flow diagrams (Figure #1), shows that a slip stream of the process water loop is used for makeup water for the cooling loop. This is where the Naphthalene/VOC loading originates. Safran plans to treat this slip stream and return it to towers 1-3, as makeup water, reducing the Naphthalene/VOC emission potential. This is how Naphthalene/VOC are treated in the Main Plant #3 Cooling water loop (Figure #2)

iv. The table below shows the preliminary timeline for completion of this project:

Task	Estimated completion
Secure Capital Funding / Engineering Study	Q3 2026 – Q1 2027
System Design / Installation	Q2 2027 – Q2 2028
System Installation and fully operational	Q4 2028

Sincerely,
Safran Landing Systems Kentucky LLC

FERN Benjamin
(SAFRAN LANDING
SYSTEMS)

Benjamin F. Fern

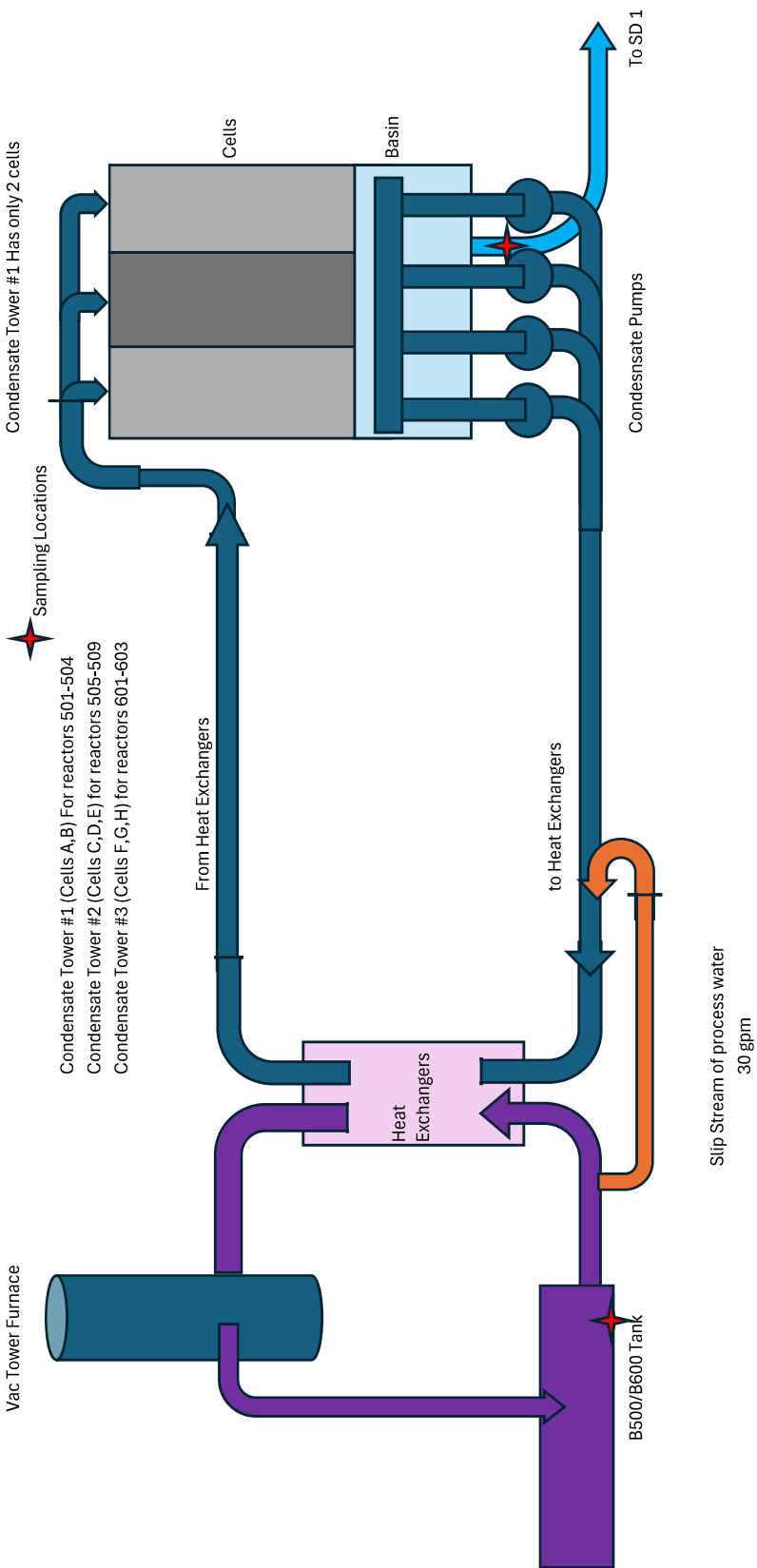
Digitally signed by FERN
Benjamin (SAFRAN LANDING
SYSTEMS)
Date: 2026.06.16 07:23:49 -04'00'

Table 1 - Rework Oven

Rework Oven	Paint	gallons per part	parts per year	PTE ton/year	
	lbs/gallon				
Worst Case PM	10.99	0.0039	8760	0.1877	Brushed on. No PM Expected
Worst Case VOC	7.486	0.0039	8760	0.1279	
Worst Case Xylene	1.256	0.0039	8760	0.0215	
Worst Case Ethylbenzene	0.419	0.0039	8760	0.0072	
Worst Case MEK	1.359	0.0039	8760	0.0232	
Worst Case Strontium Chromate	6.797	0.0039	8760	0.1161	Brushed on. No PM Expected
Worst Case Barium Chromate	0.136	0.0039	8760	0.0023	Brushed on. No PM Expected
Max Temp of the Oven is 300F, Chromium does not decompose and volatilize until 1000C (Parts/yr*gallons/part*lbs/gallon)/2000 2-3 parts/week full rework sent back through the line do not use for calculations oven holds 1 part 1 part takes 1 hour in oven For PTE use max of 8760 parts 10-15 milliliters per rework from Bill Rockwell on 1/26/2026 15 ml is 0.0039 gallon					

updated 1/26/2026

Figure #1 - Condensate Towers 1-3 Process Flow Diagram



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DEP7007B

Manufacturing or Processing Operations

- ☐ Section B.1: Process Information
☐ Section B.2: Materials and Fuel Information
☐ Section B.3: Notes, Comments, and Explanations

Additional Documentation

☐ Complete DEP7007AI, DEP7007N,
DEP7007V, and DEP7007GG.

- ☐ Attach a flow diagram
☐ Attach SDS

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 8/26/2026

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process <u>Continuous</u> or <u>Batch</u> ?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU 23	A360 Coating Operations	Spray coating application of a non-voc, non-flammable disk coating	EU 23	A360 Coating Application	Rohner Finishing Systems	Custom Built	08/2026	Continuous	N/A	N/A
EU 23	A360 Coating Operations	Mixing of A360 coating	EU23	A360 Mix Kitchen	Unknown	Unkown	01/2027	Batch	Mixed as needed	N/A

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process <u>Continuous</u> or <u>Batch</u> ?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU23	A360 Coating	Carbon Disks		300 Disks		Coated Disks	Coated Disks	300 disks	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU23	A360 Mix Kitchem	A360 Mixture				A360 Coating	Disk Coating	Mixed as needed	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit <i>(tons/hr)</i>	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content <i>(%)</i>	Ash Content <i>(%)</i>
				<i>(Specify Units/hr)</i>				<i>(Specify Units/hr)</i>			<i>(Specify Units)</i>		<i>(Specify Units)</i>		

Section B.3: Notes, Comments, and Explanations

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300 Sower Boulevard

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DEP7007GG

Control Equipment

Additional Documentation

- ___ Complete Sections GG.1 through GG.12, as applicable
- ___ Attach manufacturer's specifications for each control device
- ___ Complete DEP7007AI

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 8/26/2026

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For <u>All</u> Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers <u>Only</u>			Equipment Operational Data For <u>All</u> Control Devices		
						Temperature (° F)	Flowrate (scfm @ 68 ° F)	Average Particle Diameter (μ m)	Particle Density (lb/ft ³) or Specific Gravity	Gas Density (lb/ft ³)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H ₂ O)	Pollutants Collected/ Controlled	Pollutant Removal (%)
EU23	A360 Coating Application		Rohner Finishing Systems		Jan-2027	Ambient	2000 cfm	PM10	27.3% Solids	n/a	n/a	n/a	n/a	1.5	PM/PM10	99.99

Section GG.6: Filter

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Filter	Identify Type of Filter Unit: Baghouse, Cartridge Collector, or Other (specify)	Identify Type of Filtering Material: Fabric, Paper, Synthetic, or Other (specify)	Total Filter Area (ft ²)	Effective Air-to-Filter Ratio (acfm/ft ²)	Continuous Monitoring Instrumentation (e.g. COMS, BLDS, none)	Additional Materials Introduced into the Control System (e.g. lime, carbon)		Identify Cleaning Method: Shaker, Pulse Air, Reverse Air, Pulse Jet, or Other (specify)	Identify Gas Cooling Method: Ductwork, Heat Exchanger, Bleed-in Air, Water Spray, or Other (specify)	For Ductwork:		For Bleed-in Air:	For Water Spray:
							Material	Injection Rate (lb/hr)			Length (ft)	Diameter (ft)	Flowrate (scfm @ 68 °F)	Flowrate (gal/min)
EU23	EU23	Spray Booth Cabin	Fabric	19.08	104.82	none	none	none	None. Change Filters as needed	none	none	none	none	none

Section GG.11: Other Control Equipment

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Control Equipment	Type of Control Equipment (provide description and a diagram with dimensions)

Section GG.12: Notes, Comments, and Explanations

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300 Sower Boulevard
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DEP7007N

Source Emissions Profile

- ___ Section N.1: Emission Summary
___ Section N.2: Stack Information
___ Section N.3: Fugitive Information
___ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 8/26/2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU 23	A360 Coating Operations	1	A360 Coating	Spray Booth	1	n/a	300 disks/hr	PM/PM10	0.012 lbs/disk	Mass Balance	100.00%	99.99%	3.6	3.60E-04	15.78	1.58E-03
EU 23	A360 Mix Kitchen	2	A360 Mix Kitchen	n/a	n/a	n/a	coating for 300 disks/hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter <i>(ft)</i>	Height <i>(ft)</i>	Base Elevation <i>(ft)</i>	Northing <i>(m)</i>	Easting <i>(m)</i>	Flowrate <i>(acfm)</i>	Temperature <i>(° F)</i>	Exit Velocity <i>(ft/sec)</i>
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section N.3: Fugitive Information**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section N.4: Notes, Comments, and Explanations
Transfer Efficiency is 50%

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DEP7007V

Applicable Requirements and Compliance Activities

- ☐ Section V.1: Emission and Operating Limitation(s)
☐ Section V.2: Monitoring Requirements
☐ Section V.3: Recordkeeping Requirements
☐ Section V.4: Reporting Requirements
☐ Section V.5: Testing Requirements
☐ Section V.6: Notes, Comments, and Explanations

Additional Documentation

☐ Complete DEP7007AI

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 8/26/2026

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU23	A360 Coating	401 KAR 59:010	PM/PM10				Weekly Qualitative Visual Observation

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU 23	A360 Coating	PM/PM10	401 KAR 59:010	Opactiy	Weekly Qualitative Visual Observation while operating

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU 23	A360 Coating	PM/PM10	401 KAR 59:010	Opactiy	Weekly Log including date, time, and observer

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU 23	A360 Coating	PM/PM10	401 KAR 59:010		When Requested by State

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU 23	A360 Coating	PM/PM10	401 KAR 59:010	Opactiy	None

Section V.6: Notes, Comments, and Explanations

DEP7007K**Division for Air Quality**

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

Surface Coating or Printing Operations

- ☐ Section K.1: Process Information
☐ Section K.2: Coating Operations
☐ Section K.3: Other Operations
☐ Section K.4: Coatings/Printing Materials as Applied
☐ Section K.5: HAP-containing Coatings/Printing Materials
☐ Section K.6: Notes, Comments, and Explanations

Additional Documentation

- ☐ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
☐ Attach SDS or Technical Sheets for all Coating/Printing Materials
☐ Attach a flow diagram

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 9/4/2026

Section K.1: Process Information

Emission Unit #: EU23

Emission Unit Name: A360 Coating Operations

Coating/Printing Line Name: A360 Spray Booth

Proposed/Actual Date of Construction: (MM/YYYY) Aug-26

List Applicable Regulations: 401 KAR 59:010

Describe Overall Process: A360 coating is applied to disks in a spray booth. Coated disks are then cured in an electric oven. The coating is a non-flammable, non-voc coating.

Describe Coatings/Printing Materials: Carbon Disk, mixture of surfactant, acid, water, and metal powder

11/2018
Identify the Material
that is Coated/Printed:

☐ Metal

☐ Vinyl

☐ Plastics

☐ Wood

☐ Foil

☐ Paper

☒ Other Substrate

DEP7007K

Provide detailed description of material coated/printed:

Carbon disks are coated with and anti-oxidant coating.

Provide approximate dimensions and range of sizes of parts being coated or printed:

Carbon disks of varoius sizes

Identify the Type of Operation:

☒ Continuous

☐ Batch

☐ Other:

Describe Surface Preparation/Pretreatment Steps:

Parts are cleaned in a ultrasonic washer

For Coating
Operations:

☒ Spray

☐ Flow

☐ Dip tank

☐ Electrodeposition

☐ Brush

☐ Powder

☐ Roller Coat

☐ Other:

For Printing Operations:

(Select all that apply)

☐ Web

☐ Rotogravure

☐ Heatset

☐ Lithographic

☐ Other:

☐ Sheetfed

☐ Letterpress

☐ Non-heatset

☐ Flexographic

Describe Final Product:

Coated Carbon Disks

Check the category that most closely describes this unit:

☐ Large Appliance Coating

☐ Auto or Light-Duty Truck Coating

☐ Metal Furniture Coating

☐ Metal Coil Coating

☐ Beverage Can Coating

☐ Miscellaneous Metal Parts Coating

☐ Magnet Wire Insulation Coating

☐ Flat Wood Panel Coating

☐ Fabric, Vinyl, or Paper Coating

☐ Boat Manufacturing/ Ship Repair

☐ Pressure Sensitive Tape and Label Coating

☐ Magnet Tape Coating

☐ Publication Rotogravure Printing

☐ Coating of Plastic Parts for Business Machines

☐ Flexible Vinyl and Urethane Coating and Printing

☐ Graphic Arts using Rotogravure and Flexographic Printing

☒ Other: carbon disk coating

Section K.2: Coating Operations

K.2A: For Spray Coating

Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
	application of A360 coating	☐ Conventional Air Gun ☐ Airless ☒ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☒ Manual ☐ Automatic		26.4lb/hr; see comment 1	☐ Testing ☐ Equipment Specification Sheet ☒ Estimation
		☐ Conventional Air Gun ☐ Airless ☐ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☐ Manual ☐ Automatic			☐ Testing ☐ Equipment Specification Sheet ☐ Estimation
		☐ Conventional Air Gun ☐ Airless ☐ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☐ Manual ☐ Automatic			☐ Testing ☐ Equipment Specification Sheet ☐ Estimation

If spray guns are used simultaneously, describe:

Several application booths within one larger enclosure

K.2B: For Brush Coating

Describe Function:

n/a

Maximum Coating Application Rate:
(gal/hr)

n/a

K.2C: For Roller Coating

Roller Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr)	Describe how maximum rate was determined
n/a	n/a	n/a	☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2D: For Powder Coating

Powder Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
n/a	n/a	n/a	n/a	☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

If powder coating material is recycled, describe:

K.2E: For Flow Coating

Flow Coat ID	Describe Function	Maximum Coating Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
n/a	n/a	n/a	n/a	☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2F: For Dip Tank/Electrodeposition Coating

Tank ID	Describe Function	Maximum Make-up Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
n/a	n/a	n/a	n/a	☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet
				☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:
Complete Form DEP7007B as applicable

n/a

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity (MMBtu/hr)	Fuel	Control Device/Stack ID
Cured in existing Ovens(701,702, 801, 802)	Curing oven	n/a	electric	none

K.3C: For Purge

Type: _____ n/a

Daily Usage: _____ n/a gal/day

K.3D: For Clean-up

Type: ☐ Manual ☐ Automatic

Daily Usage: _____ n/a hrs/day

Operating Hours: _____ n/a

K.3E: For Other Equipment

Describe Processes:

n/a

Include SDS or Technical Sheets for all coating/printing materials used.

[illegible]

Section K.5: Hazardous Air Pollutant-containing Coatings/Printing Materials

List each individual hazardous air pollutant (HAP) contained in each material.

Trade Name of Material	HAP Name	HAP CAS #	Identify Solid (<i>S</i>) or Volatile (<i>V</i>)	HAP % by weight	HAP Emission Factor (<i>lb/SCC</i>)	Control Device/ Stack ID
None	None	None	None	None	None	None

Section K.6: Notes, Comments, and Explanations

26.4 lbs per hour sprayed based on 300 disks per hour.

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD**Insignificant Activities**

- ☐ Section DD.1: Table of Insignificant Activities
☐ Section DD.2: Signature Block
☐ Section DD.3: Notes, Comments, and Explanations

Source Name: Safran Landing Systems Kentucky LLC

KY EIS (AFS) #: 21- 015-00125

Permit #: F-13-023 R4

Agency Interest (AI) ID: 137

Date: 8/25/2026

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

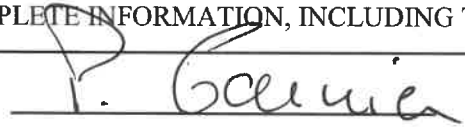
Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
26	Carbon Disk Shredder	Carbon Disk Shredder	None	No emissions expected. This unit is enclosed, disks are fed into a slot and broke into chunks inside an enclosed hopper. All associated debris are collected in a bag for disposal.

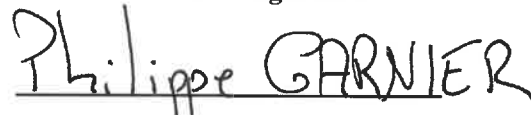
Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:


 Authorized Signature


 Type/Print Name of Signatory

25 AUG 2026
 Date

EEC
 Title of Signatory



September 14th, 2026

Kentucky Department for Environmental Protection
Division for Air Quality
Attn: Air Permit Support Section
300 Sower Blvd
Frankfort, Kentucky 40601

Re: Safran Landing Systems Kentucky LLC – Emission Unit 005 Intermediate Machining #3
Decommissioned
Source ID: 21-015-00125
AI#: 137

To whom it may concern,

Safran Landing Systems Kentucky LLC (SLS) is submitting this letter to inform you that as of September 14th, 2026, Intermediate Machining #3 (IM), EU 005, has been shutdown and will no longer operate at the SLS facility located at 1 Carbon Way Walton, Kentucky 41094. The machining equipment and associated dust collection equipment, EU 005, will be removed and recycled.

If you have any additional questions, please contact me at 859-959-1538.

Sincerely,
Safran Landing Systems Kentucky LLC

FERN Benjamin
(MW001352)

Digitally signed by FERN Benjamin
(MW001352)
Date: 2026.09.14 06:53:03 -04'00'

Benjamin Fern
Environmental Engineer