AIR PERMIT RENEWAL APPLICATION

FOR

Mubea, Inc.

8252DixieHighway
Florence, KY 41042

July 2025

ORDER OF CONTENTS

SECTION 1
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This permit application is for renewal and modification of the current air permit for Mubea, Inc. Mubea manufactures miscellaneous metal parts for the automotive industry. This application includes modifications and renewal information for existing operations.

Mubea has multiple buildings, all considered contiguous for permitting purposes, located at 8200, 8212, 8224, 8252, 8283, and 8299 Dixie Highway in Florence (Boone County). Mubea is identified with Kentucky Division for Air Quality as Source ID 21-015-00124 and currently operates under Conditional Major Permit F-20-036 R2. The permit expires March 7, 2026, and this renewal application is being submitted more than 6 months prior to the expiration date. Some modified operations have already been included in prior submittals and some are additional modifications/additions and all are summarized below.

Except for the modifications described or requested below, the operations that are in the current permit are still operating and have been described in the forms included in this application. The form for applicable requirements (DEP7007V) that is attached is not complete because the applicable requirements are already summarized in the permit and any new applicable requirements for the new units are the same as similar operations already permitted and/or described in form DEP7007DD for insignificant units.

SUMMARY OF MODIFICATION APPLICATIONS PREVIOUSLY SUBMITTED:

The following applications were previously submitted to identify modifications to the operations. These applications were submitted after R2 to the current permit was issued.

April 2023 Application:

- 8200 EP4H Tool Rack Maintenance Degreaser (150 gallon) replaced the EP4B Tool Rack Maintenance Degreaser (80 gallon)

October 2024 Application:

- 8252 Insignificant Activities #10 - #35 and #38- #39 removed
- 8252 adding Heat Line 13 (insignificant)
- 8252 adding Draw Line 7 (now identified as Draw Line 1) with grinding
- 8299 Laser Weld Cell added (insignificant)

SUMMARY OF MODIFICATIONS UPCOMING/CURRENT REVISIONS REQUESTED:

The following operations are being added or modified at the facility:

- EP11 Emergency Generator at Building 8283 has been permanently shut down
- EP12 Emergency Fire Pump at Building 8283 has been shut down and permanently removed
- 8299 Emergency Generator Engine is being added (167.2 hp, natural gas) in July 2025. Emission calculations included in Section 4.
- 8224 backup generator was previously incorrectly identified as a 70 hp engine but

is instead a 112.2 hp engine. Updated emission calculations are included in Section 4.

- Heat Line 14 to be installed at 8252 CSW starting in August 2025 (insignificant). Emission calculations included in Section 4.
- 8224 Coiling Line 2 Shot Peen and Fine Peen are to be added by December 2025. These operations both include a dust collector that will vent back into the building. Emission calculations are included in Section 4.

CONDITIONAL MAJOR

The current permit synthetically limits the facility to 50 TPY of VOC, 9 TPY of single HAP, and 22.5 TPY of combined HAP. As shown in the emission calculations included in this application, the facility is now naturally a minor source for all pollutants. The addition and changes in emissions from the operations in this application are included in that summary and do not change that status. If facility-wide emissions must remain below 50 TPY, then the VOC limitation can remain. However, since the county is now attainment for Ozone, the limitation to 50 TPY may not be necessary. The HAPs limits are no longer necessary since the facility is now naturally minor for single and Total HAPs.

SECTION 2
DEP 7007AI ADMINISTRATIVE INFORMATION FORM

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

x Section AI.1: Source Information

x Section AI.2: Applicant Information

x Section AI.3: Owner Information

x Section AI.4: Type of Application

x Section AI.5: Other Required Information

x Section AI.6: Signature Block

x Section AI.7: Notes, Comments, and Explanations

Additional Documentation

x Additional Documentation attached

Source Name: **Mubea Inc**

KY EIS (AFS) #: **21- 015-00124**

Permit #: **F-20-036 R2 (RENEWAL)**

Agency Interest (AI) ID: **48936**

Date: 7/9/2025

Section AI.1: Source Information

Physical Location Address:	**Street:**	8200, 8212, 8224, 8252, 8283, 8299 Dixie Highway				
	City:	Florence	**County:**	Boone	**Zip Code:**	41042
Mailing Address:	**Street or P.O. Box:**	8283 Dixie Highway				
	City:	Florence	**State:**	KY	**Zip Code:**	41042

Standard Coordinates for Source Physical Location

Longitude: 38.97058 (decimal degrees) **Latitude:** -84.617097 (decimal degrees)

Primary (NAICS) Category: Miscellaneous Fabricated Metal Product Manufacturing **Primary NAICS #:** 332999

Classification (SIC) Category: Fabricated Metal Parts **Primary SIC #:** 3499

Briefly discuss the type of business conducted at this site: Manufacturing of miscellaneous automotive metal parts.

Description of Area Surrounding Source: ☐ Rural Area ☐ Industrial Park ☐ Residential Area ☐ Urban Area ☑ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 1,000

Approximate distance to nearest residence or commercial property: *20 meters (varies by bldg)*

Property Area: **68 acres (all bldgs)**

Is this source portable? ☐ Yes ☑ No

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

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☑ Currently Hold	☐ Need	☐ N/A
RCRA:	☑ Currently Hold	☐ Need	☐ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity:

☐ Mixed Waste Generator ☑ Generator ☐ Recycler ☐ Other: _____

☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☐ N/A

Section AI.2: Applicant Information

Applicant Name: Mubea, Inc.

Title: (if individual)

Mailing Address:
Street or P.O. Box: 8283 Dixie Highway
City: Florence **State:** KY **Zip Code:** 41042

Email: (if individual)

Phone: (859) 746-5300

Technical Contact

Name: Brooke Bishop

Title: Environmental Engineer

Mailing Address:
Street or P.O. Box: 8283 Dixie Highway
City: Florence **State:** KY **Zip Code:** 41042

Email: brooke.bishop@Mubea.com

Phone: (859) 653-5773

Air Permit Contact for Source

Name: Brooke Bishop

Title: Environmental Engineer

Mailing Address:
Street or P.O. Box: 8283 Dixie Highway
City: Florence **State:** KY **Zip Code:** 41042

Email: brooke.bishop@Mubea.com

Phone: (859) 653-5773

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____

City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

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

Name	Position

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 OperatingPermit
☐ 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 ☑ 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		☐ Single HAP	
☐ Volatile Organic Compounds (VOC)		☐ Combined HAPs	
☐ 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)* 07/2025

Proposed Operation Start-Up Date: *(MM/YYYY)* 07/2025

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* 07/2025

Proposed Operation Start-Up Date: *(MM/YYYY)* 07/2025

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:

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

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.

	07/09/2025
Authorized Signature	**Date**
Luigi Tiddia	General Manager
Type or Printed Name of Signatory	**Title of Signatory**

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

Section AI.7: Notes, Comments, and Explanations

SECTION 3

FORMS:

DEP7007A Boilers
DEP7007B (Annealing & Shot Peen)
DEP7007K (Hose Clamp Dip & Spin)
DEP7007M (Solvent Degreasers)
DEP7007EE (Engines/Generators/Fire Pump)
DEP7007DD Insignificant Activities
DEP7007GG Control Equipment
DEP7007N Source Emissions Profile
DEP7007V Applicable Requirements

Division for Air Quality

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DEP7007A

Indirect Heat Exchangers and Turbines

_X_ Section A.1: General Information

_X_ Section A.2: Operating and Fuel Information

_X_ Section A.3: Notes, Comments, and Explanations

Additional Documentation

_X_ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

____ Manufacturer's specifications

Source Name: Mubea, Inc.

KY EIS (AFS) #: **21-015-00124**

Permit #: F-20-036 R2

Agency Interest (AI) ID: 48936

Date:

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
EP08-03	8224 Boiler #2			Indirect Heat Exchanger (Boiler)		Viessmann	CA3B 3.0	Jun-21	1-02-006-03	MMBTU/hr		
EP08-01	8224 Hot Water Boiler			Indirect Heat Exchanger (Boiler)				xx/2022	1-02-006-03	MMBTU/hr		
EP08-04	8224 Boiler #3			Indirect Heat Exchanger (Boiler)				xx/2014	1-02-006-03	MMBTU/hr		
EP08-06	8299 GalvanizingBoiler			Indirect Heat Exchanger (Boiler)				xx/2018	1-02-006-03	MMBTU/hr		

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)*			
EP-08-03		100%			3.00				Primary	Natural Gas	1000	BTU/scf	8760 hr/yr	N/A	N/A
EP08-01		100%			3				Primary	Natural Gas	1000	BTU/scf	8760 hr/yr	N/A	N/A
EP08-04		100%			3				Primary	Natural Gas	1000	BTU/scf	8760 hr/yr	N/A	N/A
EP08-06		100%			1.5				Primary	Natural Gas	1000	BTU/scf	8760 hr/yr	N/A	N/A

Section A.3: Notes, Comments, and Explanations

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DEP7007B

Manufacturing or Processing Operations

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

Additional Documentation

__x__ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: **Mubea, Inc.**
KY EIS (AFS) #: **21-1500124**
Permit #: **F-20-036 R2**
Agency Interest (AI) ID: **48936**
Date: **7/3/2025**

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)*
EP03	Shot Peen	All shot peen blasters in the facility		Shot Peen	varies	varies	see attached list	continuous		
EP05	Annealing	Annealing Furnace 1		Annealing	Ebner	Bell-type	2014	Batch	less than 1	35 heat/ 18 cool
EP05	Annealing	Annealing Furnace 2		Annealing	Ebner	Bell-type	2014	Batch	less than 1	35 heat/ 18 cool
EP05	Annealing	Annealing Furnace 3		Annealing	Ebner	Bell-type	2014	Batch	less than 1	35 heat/ 18 cool
EP05	Annealing	Annealing Furnace 4		Annealing	Ebner	Bell-type	2017	Batch	less than 1	35 heat/ 18 cool
EP05	Annealing	Annealing Furnace 5		Annealing	Ebner	Bell-type	2018	Batch	less than 1	35 heat/ 18 cool
EP05	Annealing	Annealing Furnace 6		Annealing	Ebner	Bell-type	2018	Batch	less than 1	35 heat/ 18 cool
EP05	Annealing	Annealing Furnace 7		Annealing	Ebner	Bell-type	2019	Batch	less than 1	35 heat/ 18 cool

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)*		
EP03	Shot Peen	Abrasive Blastinr Media/Steel Products	varies		varies	Steel Products	varies		N/A	N/A	N/A	N/A	N/A	N/A	N/A
EP05	Annealing (#1-7)	Steel Coils	varies		varies	Steel Coils	varies		natural gas	4.78	MMBTU/hr (each)			N/A	N/A

Section B.3: Notes, Comments, and Explanations

New Coiling Line 2 (shotpeen and finepeen) to be added to Building 8224. Installation is expected by December 2025. See Potential Emissions Calculations in section 4 and Shot Peen List attachment for more info.

DEP7007K

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Surface Coating or Printing Operations

x Section K.1: Process Information

__ Section K.2: Coating Operations

__ Section K.3: Other Operations

x Section K.4: Coatings/Printing Materials as Applied

x Section K.5: HAP-containing Coatings/Printing Materials

x Section K.6: Notes, Comments, and Explanations

Additional Documentation

x Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

x Attach SDS or Technical Sheets for all Coating/Printing Materials

___ Attach a flow diagram

Source Name: **Mubea, Inc.**

KY EIS (AFS) #: **21- 1500124**

Permit #: **F-20-036 R2**

Agency Interest (AI) ID: **48936**

Date:

Section K.1: Process Information

Emission Unit #: EP02

Emission Unit Name: Hose Clamp Dip and Spin Operations

Coating/Printing Line Name: same

Proposed/Actual Date of Construction: *(MM/YYYY)* 2010

List Applicable Regulations:
401 KAR 59:225 New Miscellaneous Metal Parts and Products Surface Coating Operation
401 KAR 63:020 Potentially Hazardous Matter and Toxic Substances

Describe Overall Process: Dip and Spin Surface Coating, Curing of Coating, Drying Oven

Describe Coatings/Printing Materials: Solvent-based coating for metal parts

Identify the Material that is Coated/Printed: ☑ Metal ☐ Vinyl ☐ Plastics ☐ Wood ☐ Foil ☐ Paper ☐ Other Substrate

Provide detailed description of material coated/printed: miscellaneous metal parts for automotive vehicles

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

Identify the Type of Operation: ☐ Continuous ☑ Batch ☐ Other:

Describe Surface Preparation/Pretreatment Steps:

For Coating Operations: ☐ Spray ☐ Flow ☑ Dip tank ☐ Electrodeposition ☐ Brush ☐ Powder ☐ Roller Coat ☑ Other: dip and spin

For Printing Operations: *(Select all that apply)* ☐ Web ☐ Rotogravure ☐ Heatset ☐ Lithographic ☐ Sheetfed ☐ Letterpress ☐ Non-heatset ☐ Flexographic ☐ Other:

Describe Final Product: automotive hose clamps

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 ☑ Miscellaneious 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: _____

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
Dark Gray Base Coat D21-062	Base Coat				17.7	13.10	4.602				100%	RTO
Black Top Coat P36B As-Applied	Top Coat				10.26	4.51	5.75				100%	RTO

**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
Dark Gray Base Coat D21-062	Naphthalene	91-20-3	V	1%		RTO
Black Top Coat P36B As-Applied	MIBK	108-10-1	V	2%		RTO
Black Top Coat P36B As-Applied	Toluene	108-88-3	V	2%		RTO
Black Top Coat P36B As-Applied	Xylene	1330-20-7	V	1%		RTO

Section K.6: Notes, Comments, and Explanations

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DEP7007M

Metal Cleaning Degreasers

x Section M.1: Cold Cleaning Degreasers Only
__ Section M.2: Open Top Vapors Degreasers
__ Section M.3: Conveyorized Degreasers
x Section M.4: Notes, Comments, and Explanations

Additional Documentation

x Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG
x Attach SDS for solvent

Source: **Mubea, Inc.**

KY EIS (AFS) #: **21- 015-00124**

Permit #: **F-20-036 R2**

Agency Interest (AI) ID: **48936**

Date: 7/9/2025

Section M.1: Cold Cleaning Degreasers Only

Emission Unit #: EP4G

Emission Unit Name: 8299 Maintenance Parts Washer

Control Device/Stack #: N/A

Manufacturer: Fountain Industries, LLC

Model/Serial Number: N/A

Proposed/Actual Date of Construction Commencement (MM/YYYY): xx/2021

Type: ☑ Dip Tank ☐ Spray Sink

Maximum Operating Schedule:

24	7	52
Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: Crystal Clean 142 Mineral Spirits

Manufacturer: Heritage-Crystal Clean, LLC

Maximum Amount Solvent Used: 0.11 gal/hr 960 gal/yr

Maximum Volatility at 100°F: 0.43 mmHg

Equipment Design

Inside dimensions of tank: Width (ft): 1.58 Length (ft): 3.67 Depth (ft): 2.08 Freeboard Height (ft):

If heated, indicate temperature: °F

If sprayed, indicate spray pressure: psi

If agitation is utilized, indicate type: ☐ Pumped ☑ Air ☐ Mechanical ☐ Ultrasonic

If drainage board is utilized, indicate type: ☑ Internal ☐ External

Is a tank cover utilized? ☑ Yes ☐ No

If external, is drainage return used? ☐ Yes ☐ No

Operating Procedure

Is degreaser cover closed during degreaser operation? ☑ Yes ☐ No

Is degreaser cover closed when degreaser is not in use? ☑ Yes ☐ No

Are parts dry before removal from drying rack? ☑ Yes ☐ No

Describe disposal of waste solvent and sludge: Crystal Clean comes onsite monthly and collects used solvent

Control Devices:

Identify if any are utilized: ☐ Refrigerated ☐ Water Spray ☐ Carbon Adsorption ☐ Freeboard Ratio greater than or equal to 0.7

Other *(specify)* :

Division for Air Quality

300 Sower Boulevard
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DEP7007M

Metal Cleaning Degreasers

_x_ Section M.1: Cold Cleaning Degreasers Only
__ Section M.2: Open Top Vapors Degreasers
__ Section M.3: Conveyorized Degreasers
_x_ Section M.4: Notes, Comments, and Explanations

Additional Documentation

_x_ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

_x_ Attach SDS for solvent

Source: **Mubea, Inc.**

KY EIS (AFS) #: **21- 015-00124**

Permit #: **F-20-036 R2**

Agency Interest (AI) ID: **48936**

Date: 7/9/2025

Section M.1: Cold Cleaning Degreasers Only

Emission Unit #: EP4C &EP4F

Emission Unit Name: 8224 Parts Washers 1 & 2

Control Device/Stack #: N/A

Manufacturer: Fountain Industries, LLC

Model/Serial Number: N/A

Proposed/Actual Date of Construction Commencement (MM/YYYY): xx/2022

Type: ☑ Dip Tank ☐ Spray Sink

Maximum Operating Schedule:

24	7	52
Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: Crystal Clean 142 Mineral Spirits

Manufacturer: Heritage-Crystal Clean, LLC

Maximum Amount Solvent Used: 0.11 gal/hr 960 gal/yr

Maximum Volatility at 100°F: 0.43 mmHg

Equipment Design

Inside dimensions of tank: Width (ft): 1.58 Length (ft): 3.67 Depth (ft): 2.08 Freeboard Height (ft):

If heated, indicate temperature: °F

If sprayed, indicate spray pressure: psi

If agitation is utilized, indicate type: ☐ Pumped ☑ Air ☐ Mechanical ☐ Ultrasonic

If drainage board is utilized, indicate type: ☑ Internal ☐ External

Is a tank cover utilized? ☑ Yes ☐ No

If external, is drainage return used? ☐ Yes ☐ No

Operating Procedure

Is degreaser cover closed during degreaser operation? ☑ Yes ☐ No

Is degreaser cover closed when degreaser is not in use? ☑ Yes ☐ No

Are parts dry before removal from drying rack? ☑ Yes ☐ No

Describe disposal of waste solvent and sludge: Crystal Clean comes onsite monthly and collects used solvent

Control Devices:

Identify if any are utilized: ☐ Refrigerated ☐ Water Spray ☐ Carbon Adsorption ☐ Freeboard Ratio greater than or equal to 0.7

Other *(specify)* :

Division for Air Quality

300 Sower Boulevard
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DEP7007M

Metal Cleaning Degreasers

x Section M.1: Cold Cleaning Degreasers Only
__ Section M.2: Open Top Vapors Degreasers
__ Section M.3: Conveyorized Degreasers
x Section M.4: Notes, Comments, and Explanations

Additional Documentation

x Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

x Attach SDS for solvent

Source: **Mubea, Inc.**

KY EIS (AFS) #: **21- 015-00124**

Permit #: **F-20-036 R2**

Agency Interest (AI) ID: **48936**

Date:

Section M.1: Cold Cleaning Degreasers Only

Emission Unit #: EP4H

Emission Unit Name: 8200 Tool Rack Maintenance Degreaser

Control Device/Stack #: N/A

Manufacturer: Fountain Industries, LLC

Model/Serial Number: Model: 1679R/Serial: R23010687

Proposed/Actual Date of Construction Commencement (MM/YYYY): 03/2023

Type: ☑ Dip Tank ☐ Spray Sink

Maximum Operating Schedule:

24	7	52
Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: Crystal Clean 142 Mineral Spirits

Manufacturer: Heritage-Crystal Clean, LLC

Maximum Amount Solvent Used: 0.2 gal/hr 1,800 gal/yr

Maximum Volatility at 100°F: 0.43 mmHg

Equipment Design

Inside dimensions of tank: Width (ft): 3.125 Length (ft): 4.75 Depth (ft): 2.5 Freeboard Height (ft): 1.04

If heated, indicate temperature: °F

If sprayed, indicate spray pressure: psi

If agitation is utilized, indicate type: ☐ Pumped ☑ Air ☐ Mechanical ☐ Ultrasonic

If drainage board is utilized, indicate type: ☑ Internal ☐ External

Is a tank cover utilized? ☑ Yes ☐ No

If external, is drainage return used? ☐ Yes ☐ No

Operating Procedure

Is degreaser cover closed during degreaser operation? ☑ Yes ☐ No

Is degreaser cover closed when degreaser is not in use? ☑ Yes ☐ No

Are parts dry before removal from drying rack? ☑ Yes ☐ No

Describe disposal of waste solvent and sludge: Crystal Clean comes onsite monthly and collects used solvent

Control Devices:

Identify if any are utilized: ☐ Refrigerated ☐ Water Spray ☐ Carbon Adsorption ☐ Freeboard Ratio greater than or equal to 0.7

Other *(specify)* :

Section M.4: Notes, Comments, and Explanations
EP4B Tool Rack Maintenance Degreaser (located at 8200 Dixie Highway) was replaced with larger parts washer EP4H 8200 Tool Rack Maintenance Degreaser (8200) in 2023.
8224 has two parts washers (EP4C and EP4F) that are identical.

Division for Air Quality

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DEP7007EE

Internal Combustion Engines

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

Additional Documentation

X Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

___ Attach EPA certification of the engine

Source Name: Mubea
KY EIS (AFS) #: 21- 015-00124
Permit #: F-15-031 R5
Agency Interest (AI) ID: 48936
Date: ~~7/22/2020~~ 7/9/2025

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
new	8299 Backup Generator Engine			Cummins	C100N6		2018	07/2025		NSPS JJJJ
EP13	8224 Natural Gas Emergency Generator			Cummins/Onan	70GGHF	2012	2012	2012		NSPS JJJJ, MACT ZZZZ
EP06	8224 Emergency Fire Pump Engine			Peerless/Cummins			2006	2014		MACT ZZZZ

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)
8299 Backup Generator Engine	Emergency Electricity Generator	testing or emergency only	no		
8224 Natural Gas Emergency Generator	Emergency Electricity Generator	testing or emergency only	no		
8224 Emergency Fire Pump Engine	Emergency Fire Pump Engine	testing or emergency only	no		

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
8299 Backup Generator Engine	Stationary, Non-Road	spark	3-phase	162.7	1800	6	6
8224 Natural Gas Emergency Generator	Stationary, Non-Road	spark	Single Phase	112.2	1800	6.8	10
8224 Emergency Fire Pump Engine	Stationary, Non-Road	compression		275			

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
8299 Backup Generator Engine	primary	natural gas		100%					
8224 Natural Gas Emergency Generator	primary	natural gas		100%					
8224 Emergency Fire Pump Engine	primary	non-road diesel - ultra low sulfur	non-road	100%			<15 ppm		

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
8299 Backup Generator Engine	natural gas	all	AP-42 emission factors	see calculation pages	USEPA AP-42 factors
8224 Natural Gas Emergency Generator	natural gas	all	AP-42 emission factors	see calculation pages	USEPA AP-42 factors
8224 Emergency Fire Pump Engine	non-road diesel - ultra low sulfur	all	AP-42 emission factors	see calculation pages	USEPA AP-42 factors

Section EE.6: Notes, Comments, and Explanations

EP11 8283 Backup Generator Engine has been permanently shut down. EP12 8283 Emergency Fire Pump Engine has been bypassed and permanently shut down.

A new backup generator is being added to 8299 and will be completed approximately July 2025.

Division for Air Quality
300 Sower Boulevard
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DEP7007DD

Insignificant Activities

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

Source Name: Mubea, Inc.
KY EIS (AFS) #: 21- 01500124
Permit #: F-20-036 R2
Agency Interest (AI) ID: 48936
Date: 7/9/2025

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
	Aqueous Parts Washers in all buildings		none	zero to neglibible
	CSW 8200 - 12 Heat Lines		401 KAR 63:010	see emission calculation sheet
	CSW 8252 - 2 Heat Lines		401 KAR 63:010	see emission calculation sheet
	8200 Rust Prevent		none	see emission calculation sheet

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
Building 2 (8252 Dixie) #10	Grinding 1 & 2 3675 lb/hr	Draw Line 7	401 KAR 63:010	see emission calculation sheet
8299 TRB Building #6	Laser Cutting, Welding, and Marking	Crush Tip Weld Cell	401 KAR 63:010	see emission calculation sheet
Building (8200 Dixie)	Grinding 1 & 2 3675 lb/hr	Draw Line 5	401 KAR 63:010	see emission calculation sheet
	8252 CP Hardening Ovens	see natural gas calculation for listing	None	see emission calculation sheet
	8252 Salt Bath Fire Tube Burners	see natural gas calculation for listing	401 KAR 59:010	see emission calculation sheet
	8252 Methanol Storage Tank (12,000 gal)		401 KAR 63:020	see emission calculation sheet
	8224 Stress Relief Ovens for Coiling Lines	see natural gas calculation for listing	None	see emission calculation sheet
	8224 Powder Paint Operations	5 lines	401 KAR 59:010	negligible
	8224 Space Heater		None	see emission calculation sheet
	8224 Powder Paint Dry-Off, Preheat, and Curing Ovens	see natural gas calculation for listing	401 KAR 59:010	see emission calculation sheet
	8224 Load Test Touch-Up		401 KAR 63:020	see emission calculation sheet
	8224 QC Marking Paint		401 KAR 63:020	see emission calculation sheet

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
	8224 Coil Spring Development Oven	see natural gas calculation for listing	None	see emission calculation sheet
	8224 Steel Cutting		401 KAR 59:010, 401 KAR 63:020	see emission calculation sheet
	8299 Oil Emulsion Process 1 & 2		None	see emission calculation sheet
	8299 Zinc Galvanizing Line/Coating		None	see emission calculation sheet
	8299 Galvanizing Seam Welding (0.15 lb/hr wire)		401 KAR 63:020	0.0008 lb/hr PM, 0.003 TPY PM, 5.55E-05 TPY Mn, 6.58E-05 TPY Total HAP
	8283 HVAC Units (2 x 0.4 MMBTU/hr)		401 KAR 59:010	see emission calculation sheet
	8283 Dock Heaters (4 x 0.4 MMBTU/hr)		402 KAR 59:010	see emission calculation sheet
	8283 Propane Heater for Water Tank (0.98 MMBTU/hr)		401 KAR 59:015	see emission calculation sheet

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.

Authorized Signature

07/09/2025

Date

By:

Luigi Tiddia

Type/Print Name of Siguatory

General Manager

Title of Siguatory

Section DD.3: Notes, Comments, and Explanations

Division for Air Quality

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DEP7007GG

Control Equipment

Additional Documentation

x Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

x Complete DEP7007AI

Source Name: **Mubea, Inc.**

KY EIS (AFS) #: **21-** **015-00124**

Permit #: **F-20-036 R2**

Agency Interest (AI) ID: **48936**

Date: 7/9/2025

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 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/ft^3) or Specific Gravity	Gas Density (lb/ft^3)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H_2O)	Pollutants Collected/ Controlled	Pollutant Removal (%)
RTO			Tann		2010										VOC/HAP	95%+
DL1 Dust Collector	Dust Collector		Donaldson Filtration Solutions	Torit DCE Dust Collectors Type TDS	Nov-24	80	5000	N/A	N/A	N/A				0-6	Particulate	99.9
See GG.12																

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 *(ft²)*	Effective Air-to-Filter Ratio *(acfm/ft²)*	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)*
DL1 Dust Collector	Dust Collector	Cartridge	Nanofiber	1338	4	None	N/A	N/A	Air Pulse	N/A	N/A	N/A	N/A	N/A
See GG.12 for others.														

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU/hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(° F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	
RTO-1	Hose Clamp Dip & Spin Operations	RTO		0.75			determined during testing										

Section GG.12: Notes, Comments, and Explanations

For forms GG.1 and GG.6, see attached "Shot Peen List" for full list of dust collectors. All dust collectors have the same manufacturer, comparable specifications, and use same or comparable filters.

Division for Air Quality

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DEP7007N

Source Emissions Profile

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

Additional Documentation

X Complete DEP7007AI

Source Name: Mubea, Inc.
KY EIS (AFS) #: 21- 15-00124
Permit #: F-20-036 R2
Agency Interest (AI) ID: 48936
Date: 7/9/2025

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)
EP02	HC Dip & Spin			RTO-1		RTO-1		VOC/HAP	see calcs	see calcs	100.00%	95%+	see calcs		see calcs	
EP03	All Shot Peen Ops			cartridge filters		fugitive		PM	see calcs	see calcs		99.90%	see calcs		see calcs	
EP04	parts washers					fugitive		VOC/HAP	see calcs	see calcs			see calcs		see calcs	
EP05	Annealing					Anneal 1-7		combustion	see calcs	see calcs			see calcs		see calcs	
EP06	fire pump					fugitive		combustion	see calcs	see calcs			see calcs		see calcs	
EP07	End Dip					fugitive		VOC	see calcs	see calcs			see calcs		see calcs	
EP08	Boilers					unknown		combustion	see calcs	see calcs			see calcs		see calcs	
EP13	8224 generator					fugitive		combustion	see calcs	see calcs			see calcs		see calcs	
NEW	8299 Generator					fugitive		combustion	see calcs	see calcs			see calcs		see calcs	
Insig	all other insignificant					various		various	see calcs	see calcs			see calcs		see calcs	

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

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DEP7007V

Applicable Requirements and Compliance Activities

x 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

x Complete DEP7007AI

Source Name: Mubea, Inc.

KY EIS (AFS) #: 21- 15-00124

Permit #: F-20-036 R2

Agency Interest (AI) ID: 48936

Date:

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)
	see executive summary						

SECTION 4
EMISSION CALCULATIONS AND FACILITY POTENTIAL TO EMIT

Mubea

Contiguous Site Summary

As of July 2025

Unlimited Potential to Emit (only limited PTE is from 8252 Hose Clamp operation)

Operation	NOx	CO	SOx	PM10	VOC	Diethanol amine	Manganese	Xylene	Ethyl benzene	MIBK	Toluene	Methanol	Total HAP
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Plant-Wide Summary of Nat Gas-Fired	28.79	24.18	0.17	2.19	1.58	-	-	-	-	-	-	-	0.00
Plant-Wide Summary of Propane-Fired	0.06	0.04	0.01	0.003	0.005	-	-	-	-	-	-	-	0.00
Plant-Wide Summary of Diesel-Fired Engines	2.13	0.46	0.14	0.15									0.00
Plant-Wide Summary of Solvent-based Degreasers	-	-	-	-	3.14	-	-	-	-	-	-	-	0.00
Plant-Wide Summary of Aqueous-based Parts Washers	-	-	-	-	1.20	-	-	-	-	-	-	-	0.00
8224 Natural Gas-Fired Generator	0.02	0.02	0.0001	0.002	0.001	-	-	-	-	-	-	-	0.00
8299 Natural Gas-Fired Generator	0.03	0.03	0.0002	0.002	0.002	-	-	-	-	-	-	-	0.00
8299 TRB Annealing Furnaces	14.66	12.31	0.09	1.11	0.81	-	-	-	-	-	-	-	0.00
8252 Hose Clamp Dip and Spin	-	-	-	-	40.01	-	-	0.26	-	0.51	0.51	-	1.28
Plant-Wide Summary of Shot Peen	-	-	-	12.53	-	-	0.12	-	-	-	-	-	0.12
8252 Methanol Tank	-	-	-	-	0.15	-	-	-	-	-	-	0.15	0.15
8200 Heat Lines	-	-	-	0.92	-	-	-	-	-	-	-	-	0.00
8252 Heat Lines	-	-	-	0.15	-	-	-	-	-	-	-	-	0.00
8200 Grinding	-	-	-	0.16	-	-	-	-	-	-	-	-	0.00
8252 Grinding	-	-	-	0.16	-	-	-	-	-	-	-	-	0.00
8200 Insignificant Rust Preventative	-	-	-	-	3.65	-	-	-	-	-	-	-	0.00
8224 Load Test Touch-up	-	-	-	-	1.03	-	-	-	-	-	0.45	-	0.45
8224 Marking Paint (QA/QC)	-	-	-	-	4.03	-	-	-	-	-	0.01	-	0.01
8224 Cutting Operations (6)	-	-	-	0.95	-	-	-	-	-	-	-	-	0.02
8299 Crushtip Weld Cell	-	-	-	4.95	-	-	0.03	-	-	-	-	-	0.03
8299 Galvanizing	-	-	-	0.05	-	-	-	-	-	-	-	-	0.00
8299 Galvanizing Seam Weld	-	-	-	0.003	-	-	5.55E-05	-	-	-	-	-	6.58E-05
Total Contiguous Properties PTE	45.69	37.03	0.41	23.33	55.61	0.00	0.15	0.26	0.00	0.51	0.97	0.15	2.07
Major Source Threshold	100	100	100	100	100	10	10	10	10	10	10	10	25

(Marginal Nonattainment Ozone - Boone County)

Permanently Shutdown as of 11/1/24:
8252 TDS Misc Insignificant Chemical Activities
8252 TDS Shot Peen all operations
8252 TDS - All Ovens

Mubea

Contiguous Site Summary

As of July 2025

Limited Potential to Emit (only limited/controlled PTE is from 8252 Hose Clamp operation for compliance with 401 KAR 59:225)

Operation	NOx	CO	SOx	PM10	VOC	Diethanol amine	Manganese	Xylene	Ethyl benzene	MIBK	Toluene	Methanol	Total HAP
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Plant-Wide Summary of Nat Gas-Fired	28.79	24.18	0.17	2.19	1.58	-	-	-	-	-	-	-	0.00
Plant-Wide Summary of Propane-Fired	0.06	0.04	0.01	0.003	0.005	-	-	-	-	-	-	-	0.00
Plant-Wide Summary of Diesel-Fired Engines	2.13	0.46	0.14	0.15									0.00
Plant-Wide Summary of Solvent-based Degreasers	-	-	-	-	3.14	-	-	-	-	-	-	-	0.00
Plant-Wide Summary of Aqueous-based Parts Washers	-	-	-	-	1.20	-	-	-	-	-	-	-	0.00
8224 Natural Gas-Fired Generator	0.02	0.02	0.0001	0.002	0.001	-	-	-	-	-	-	-	0.00
8299 Natural Gas-Fired Generator	0.03	0.03	0.0002	0.002	0.002	-	-	-	-	-	-	-	0.00
8299 TRB Annealing Furnaces	14.66	12.31	0.09	1.11	0.81	-	-	-	-	-	-	-	0.00
8252 Hose Clamp Dip and Spin Limited PTE	-	-	-	-	6.00	-	-	0.04	-	0.08	0.08	-	0.19
Plant-Wide Summary of Shot Peen	-	-	-	12.53	-	-	0.12	-	-	-	-	-	0.12
8252 Methanol Tank	-	-	-	-	0.15	-	-	-	-	-	-	0.15	0.15
8200 Heat Lines	-	-	-	0.92	-	-	-	-	-	-	-	-	0.00
8252 Heat Lines	-	-	-	0.15	-	-	-	-	-	-	-	-	0.00
8200 Grinding	-	-	-	0.00	-	-	-	-	-	-	-	-	0.00
8252 Grinding	-	-	-	0.00	-	-	-	-	-	-	-	-	0.00
8200 Insignificant Rust Preventative	-	-	-	-	3.65	-	-	-	-	-	-	-	0.00
8224 Load Test Touch-up	-	-	-	-	1.03	-	-	-	-	-	0.45	-	0.45
8224 Marking Paint (QA/QC)	-	-	-	-	4.03	-	-	-	-	-	0.01	-	0.01
8224 Cutting Operations (6)	-	-	-	0.95	-	-	-	-	-	-	-	-	0.02
8299 Crushtip Weld Cell	-	-	-	4.95	-	-	0.03	-	-	-	-	-	0.03
8299 Galvanizing	-	-	-	0.05	-	-	-	-	-	-	-	-	0.00
8299 Galvanizing Seam Weld	-	-	-	0.003	-	-	5.55E-05	-	-	-	-	-	6.58E-05
Total Contiguous Properties PTE	45.69	37.03	0.41	23.01	21.60	0.00	0.15	0.04	0.00	0.08	0.54	0.15	0.98

Permanently Shutdown as of 11/1/24:
8252 TDS Misc Insignificant Chemical Activities
8252 TDS Shot Peen all operations
8252 TDS - All Ovens

Mubea - Natural Gas Fired Equipment from All Buildings

Fuel Combustion Calcs

Updated/Reviewed 7/25

Emission Factors from AP-42 1.4

Fuel Type:	Natural Gas	
Heat Content:	1000	BTU/ft3
Maximum Operating Schedule:	8760	hrs/yr
cubic feet to cubic meters:	35.315	MMCF/MMCM
kw to BTU:	3412	BTU/hr = 1 kw

Emission Factors from AP-42 1.4 for natural gas combustion. Methanol is burned by two of the hardening burners on each oven to create an atmosphere in the oven to promote hardening. The methanol burners are fired by natural gas and then burn methanol in the oven atmosphere. Methanol combustion factors are not readily available but is known to burn even cleaner than natural gas. For this reason, it is assumed that methanol combustion emissions will be similar to that of natural gas since they are both clean burning fuels.

			NOx		CO		SOx		PM		VOC			
	Rating		Emission Factor		Emission Factor		Emission Factor		Emission Factor		Emission Factor		Firing Type	Applicable Regulation
Natural Gas Fired Ovens			100	lb/MMCF	84	lb/MMCF	0.6	lb/MMCF	7.6	lb/MMCF	5.5	lb/MMCF		
	MMBTU/hr	MMCF/hr	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY		
8200 Dixie - induction heating only														
8224 Dixie														
Coil Spring Development Oven	1.95	0.0020	0.20	0.85	0.16	0.72	0.00	0.01	0.01	0.06	0.01	0.05	Direct	None
Stress Relief Oven #1 for Coiling Line	2.56	0.0026	0.26	1.12	0.21	0.94	0.00	0.01	0.02	0.09	0.01	0.06	Direct	None
Stress Relief Oven #2 for Coiling Line	3.14	0.0031	0.31	1.37	0.26	1.15	0.00	0.01	0.02	0.10	0.02	0.08	Direct	None
Stress Relief Oven #3 for Coiling Line	3.14	0.0031	0.31	1.37	0.26	1.15	0.00	0.01	0.02	0.10	0.02	0.08	Direct	None
Stress Relief Oven #4 for Coiling Line	2.63	0.0026	0.26	1.15	0.22	0.97	0.00	0.01	0.02	0.09	0.01	0.06	Direct	None
Stress Relief Oven #5 for Coiling Line	3.82	0.0038	0.38	1.67	0.32	1.41	0.00	0.01	0.03	0.13	0.02	0.09	Direct	None
Stress Relief Oven #6 for Coiling Line	3.07	0.0031	0.31	1.35	0.26	1.13	0.00	0.01	0.02	0.10	0.02	0.07	Direct	None
Space Heaters	1.25	0.0013	0.13	0.55	0.11	0.46	0.00	0.00	0.01	0.04	0.01	0.03	Indirect	None
Pretreat Line Boiler #2 (upstairs, replaced 2021)	3.00	0.0030	0.30	1.31	0.25	1.10	0.00	0.01	0.02	0.10	0.02	0.07	Indirect	59:015
Pretreat Line Boiler #3 (downstairs)	3.00	0.0030	0.30	1.31	0.25	1.10	0.00	0.01	0.02	0.10	0.02	0.07	Indirect	59:015
Pretreat Line Boiler #1 (upstairs, moved from 6800 June 2022)	3.00	0.0030	0.30	1.31	0.25	1.10	0.00	0.01	0.02	0.10	0.02	0.07	Indirect	59:015
Powder Paint Line 1 Ovens (Dry-Off, Preheaters, and Curing Ovens)	3.19	0.0032	0.32	1.40	0.27	1.18	0.00	0.01	0.02	0.11	0.02	0.08	Direct	59:010
Powder Paint Line 2 Ovens (Dry-Off, Preheaters, and Curing Ovens)	3.19	0.0032	0.32	1.40	0.27	1.18	0.00	0.01	0.02	0.11	0.02	0.08	Direct	59:010
Powder Paint Line 3 Ovens (Dry-Off, Preheaters, and Curing Ovens)	3.19	0.0032	0.32	1.40	0.27	1.18	0.00	0.01	0.02	0.11	0.02	0.08	Direct	59:010
Powder Paint Line 4 Ovens (Dry-Off, Preheaters, and Curing Ovens)	3.19	0.0032	0.32	1.40	0.27	1.18	0.00	0.01	0.02	0.11	0.02	0.08	Direct	59:010
Powder Paint Line 5 Ovens (Dry-Off, Preheaters, and Curing Ovens)	3.19	0.0032	0.32	1.40	0.27	1.18	0.00	0.01	0.02	0.11	0.02	0.08	Direct	59:010
8252 Dixie Hose Clamp BU														
Hose Clamp Line #1 Hardening Oven	3.00	0.0030	0.30	1.31	0.25	1.10	0.00	0.01	0.02	0.10	0.02	0.07	Direct	None
Hose Clamp Line #1 Salt Bath Fire Tube Burner	0.75	0.0008	0.08	0.33	0.06	0.28	0.00	0.00	0.01	0.02	0.00	0.02	Indirect	59:015
Hose Clamp Line #2 Hardening Oven	3.00	0.0030	0.30	1.31	0.25	1.10	0.00	0.01	0.02	0.10	0.02	0.07	Direct	None
Hose Clamp Line #2 Salt Bath Fire Tube Burner	0.75	0.0008	0.08	0.33	0.06	0.28	0.00	0.00	0.01	0.02	0.00	0.02	Indirect	59:015
Hose Clamp Line #3 Hardening Oven	3.00	0.0030	0.30	1.31	0.25	1.10	0.00	0.01	0.02	0.10	0.02	0.07	Direct	None
Hose Clamp Line #3 Salt Bath Fire Tube Burner	0.75	0.0008	0.08	0.33	0.06	0.28	0.00	0.00	0.01	0.02	0.00	0.02	Indirect	59:015
Hose Clamp Paint Line Burner	4.05	0.0041	0.41	1.77	0.34	1.49	0.00	0.01	0.03	0.13	0.02	0.10	Indirect	59:015
8283 Dixie														
Dock Area Heaters x 4 (0.4 MMBTU/hr each)	1.60	0.0016	0.16	0.70	0.13	0.59	0.00	0.00	0.01	0.05	0.01	0.04	Direct	59:010
HVAC Roof Units x 2 (0.4 MMBTU/hr each)	0.80	0.0008	0.08	0.35	0.07	0.29	0.00	0.00	0.01	0.03	0.00	0.02	Direct	59:010

Mubea - Natural Gas Fired Equipment from All Buildings

Fuel Combustion Calcs

Updated/Reviewed 7/25

Emission Factors from AP-42 1.4

Fuel Type:	Natural Gas	
Heat Content:	1000	BTU/ft3
Maximum Operating Schedule:	8760	hrs/yr
cubic feet to cubic meters:	35.315	MMCF/MMCM
kw to BTU:	3412	BTU/hr = 1 kw

Emission Factors from AP-42 1.4 for natural gas combustion. Methanol is burned by two of the hardening burners on each oven to create an atmosphere in the oven to promote hardening. The methanol burners are fired by natural gas and then burn methanol in the oven atmosphere. Methanol combustion factors are not readily available but is known to burn even cleaner than natural gas. For this reason, it is assumed that methanol combustion emissions will be similar to that of natural gas since they are both clean burning fuels.

			NOx		CO		SOx		PM		VOC		Firing Type	Applicable Regulation
	Rating		Emission Factor		Emission Factor		Emission Factor		Emission Factor		Emission Factor			
Natural Gas Fired Ovens			100	lb/MMCF	84	lb/MMCF	0.6	lb/MMCF	7.6	lb/MMCF	5.5	lb/MMCF		
	MMBTU/hr	**MMCF/hr**	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY		
8299 Dixie (see Annealing emissions on separate sheet)														
8299 Boiler	1.50	0.0015	0.15	0.66	0.13	0.55	0.00	0.00	0.01	0.05	0.01	0.04	Indirect	59:015
Total	**65.73**	**0.07**	**6.57**	**28.79**	**5.52**	**24.18**	**0.04**	**0.17**	**0.50**	**2.19**	**0.36**	**1.58**		

Removed 2020: SRS Oven 2, 3

Removed 2021: SRS Oven 1

Permanently shutdown as of 6/11/22: 6800 activities - Powder Paint Oven (preheat and cure), Hot Water Backup Boiler, SRS Oven 4; 8224 - Boiler #1 (replaced by 6800 Hot Water Boiler

Permanently shutdown as of 11/1/24: All 8252 TDS Ovens

Mubea

Propane Combustion Calcs

Updated 7/20

Emission Factors from AP-42 1.5 for commercial boilers (0.3 to 10 MMBTU/hr)

Fuel Type:	Propane	
Heat Content:	915,000,000	BTU/10^3 gallon for propane
Maximum Operating Schedule:	8760	hrs/yr
Assumed sulfur content:	15	gr/100 scf (typical for commercial propane per Gas Processors Association Engineering Data Book, Figure 15-50)

			NOx		CO		SOx		PM		VOC	
	Rating		Emission Factor		Emission Factor		Emission Factor		Emission Factor		Emission Factor	
Propane Heater			13	lb/10^3 gal	7.5	lb/10^3 gal	0.10S	lb/10^3 gal	0.7	lb/10^3 gal	1.0	lb/10^3 gal
	MMBTU/hr	**10^3 gal/hr**	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
8283 Dixie - Fire water tank heater	0.98	0.0011	0.01	0.06	0.01	0.04	0.002	0.01	0.001	0.003	0.001	0.005

Mubea - Diesel Fuel-Fired Engines

Updated 7/20

8224 Diesel Fuel-Fired Emergency Fire Pump - Already Existing in Permit

Reciprocating Internal Combustion Engines - Diesel Fuel

This diesel-fired generator is for emergency use only and is compliant with 40 CFR Part 63, Subpart ZZZZ

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	275.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	137,500

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.15	0.15	0.15	0.14	2.13	0.17	0.46

8283 Diesel Fuel-Fired Emergency Fire Pump - permanently removed 2025

8283 Diesel Fuel-Fired Emergency Generator - permanently shut down 2025

Total Engine Emissions

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Potential Emissions (TPY)}	0.15	0.15	0.15	0.14	2.13	0.17	0.46

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2

*PM and $PM_{2.5}$ emission factors are assumed to be equivalent to PM_{10} emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM_{10} which is condensable.

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]

Mubea - Natural Gas-Fired Engine

Updated 7/2025

8224 Natural Gas-Fired Emergency Generator Engine for Server Room (EP13)

Spark Ignition - Manufactured 8/2012

This generator is for emergency use only and is compliant with 40 CFR Part 60, Subpart JJJJ via EPA Certification of engine

Output Horsepower Rating (hp)	112.2	(previously incorrectly listed as 70 hp)
Maximum Hours Operated per Year	500	
Max Load Fuel Use (ft3/hr):	955.6	
Conversion (BTU/ft3):	1,020	

	Rating		NOx Emission Factor		CO Emission Factor		SOx Emission Factor		PM Emission Factor		VOC Emission Factor	
			100	lb/MMCF	84	lb/MMCF	0.6	lb/MMCF	7.6	lb/MMCF	5.5	lb/MMCF
	MMBTU/hr	**MMCF/hr**	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
8224 Generator	0.97	0.0010	0.10	0.02	0.08	0.02	0.001	0.0001	0.01	0.002	0.01	0.001

8299 Natural Gas-Fired Emergency Generator

Spark Ignition - 2024 EPA Certified Engine

This generator is for emergency use only and is compliant with 40 CFR Part 60, Subpart JJJJ via EPA Certification of engine in 2023 for 2024 standard

Output Horsepower Rating (hp)	162.7
Maximum Hours Operated per Year	500
Max Load Fuel Use (ft3/hr):	1,290.0
Conversion (BTU/ft3):	1,020

	Rating		NOx Emission Factor		CO Emission Factor		SOx Emission Factor		PM Emission Factor		VOC Emission Factor	
			100	lb/MMCF	84	lb/MMCF	0.6	lb/MMCF	7.6	lb/MMCF	5.5	lb/MMCF
	MMBTU/hr	**MMCF/hr**	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
8224 Generator	1.32	0.0013	0.13	0.03	0.11	0.03	0.001	0.0002	0.01	0.002	0.01	0.002

Mubea - Degreasers from All Buildings

VOC Calculations

Updated 7/2025

Current solvent is 142 Flash Mineral Spirits from Crystal-Clean

Solvent Degreasers	EU ID	Maximum Make-Up Solvent Gallons Used/Yr	Tons Used/Yr	Emission Factor (lb/ton)	Emissions (TPY VOC)	Installed
8224 Maintenance Parts Washer 1 (80 gallon parts washer) (previously 8224 Tool Shop)	EP4C	960	3.216	400	0.643	2022
8224 Maintenance Parts Washer 2 (80 gallon parts washer)	EP4F	960	3.216	400	0.643	2022
8200 Parts Washer (150 gallon part washer R23010687)	EP4H	1800	6.030	400	1.206	2023 (to replace EP4B)
8299 Parts Washer (80 gal Chrystal Clean)	EP4G	960	3.216	400	0.643	2021
				Total	3.136	

Emission factor is from Web Survey - no HAPs in this material

Aqueous Degreasers/Cintas	EU ID	Maximum Make-Up Solvent Gallon Used/Yr	Tons Used/Yr	Web Survey Emission Factor (lb/ton)	Emissions (TPY VOC)
8200 Aqueous Degreaser	insignificant	1440	6.005	80	0.240
8224 Maintenance	insignificant	1440	6.005	80	0.240
8252 Hose Clamp Aqueous Degreasr	insignificant	1440	6.005	80	0.240
8252 Coil Spring Aqueous Degreaser	insignificant	1440	6.005	80	0.240
8224 Tool Shop Armakleen by Safety Kleen	insignificant	1440	6.005	80	0.240
8212 Tool Shop - Water only, no solvent	trivial	0	0.000	0	0.000
				Total	1.201

Aqueous emission factor is VOC Content given in MSDS and assuming 100% evaporation of VOC - no HAPs in this material

Max usage based on two change-outs per month when in reality, each unit changes out anywhere form once per month to once every 3 months. There are occasions when change-outs can occur twice per month.

Mubea TRB - 8299 Dixie Highway in Boone County

Fuel Combustion Calcs

Annealing Furnaces

Updated 7/20/20

Process Description:

Batches of metal parts are loaded into the annealing furnace and heated in a completely enclosed hydrogen atmosphere. Heat is supplied through natural gas combustion. Due to the process being totally enclosed during heating, the only emissions are from natural gas combustion. Parts then remain in the furnace and are cooled by non-contact cooling water.

The annealing operation consists of 14 actual furnace bases, each with the capability of heating at the capacity listed below. However, due to the long heating and cooling cycles involved in this process, there are only 7 heating bells and 7 cooling bells available at any given time. This limits the true capacity for the operation to the number of heating bells available, not the number of furnace bases available.

Fuel Type:	Natural Gas	
Heat Content:	1000	BTU/ft3
Firing Type:	Indirect	
Batch Operating Schedule:	35	hours heat per batch maximum
	18	hours cool minimum
	8760	hrs/yr per furnace

Emission Factors from AP-42 1.4

Natural Gas Fired Equipment	Rating		NOx		CO		SOx		PM		VOC	
			Emission Factor		Emission Factor		Emission Factor		Emission Factor		Emission Factor	
			100	lb/MMCF	84	lb/MMCF	0.6	lb/MMCF	7.6	lb/MMCF	5.5	lb/MMCF
	MMBTU/hr	MMCF/hr	Emissions									
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TRB Annealing Furnace 1	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
TRB Annealing Furnace 2	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
TRB Annealing Furnace 3	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
TRB Annealing Furnace 4 (2017)	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
TRB Annealing Furnace 5 (2018)	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
TRB Annealing Furnace 6 (2018)	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
TRB Annealing Furnace 7 (2019)	4.78	0.0048	0.48	2.09	0.40	1.76	0.00	0.01	0.04	0.16	0.03	0.12
		Total	3.35	14.66	2.81	12.31	0.02	0.09	0.25	1.11	0.18	0.81

Mubea - Hose Clamp Dip and Spin at 8252 Dixie

VOC/HAP Emission Calculations

Updated 7/25/SDS Review

Required Minimum Capture/Control Efficiency: 85%

Basecoat	mix ratio	density	VOC Content	Water		VOC		Solids		Max Usage		Potential Emissions VOC	Controlled Emissions
	by wt	lb/gal	lb/gal	% by vol	% by wt	% by vol	% by wt	% by vol	% by wt	gal/yr	lb/yr	TPY	TPY
Dark Gray Base Coat D21-062	-	17.70	4.60	0.00%	0.00%	65.74%	26.00%	34.26%	74.00%	5000.00	88500.00	11.51	1.73

Topcoat HAPs	Naphthalene		Controlled Emissions
	% by wt	TPY	TPY
Dark Gray Base Coat D21-062	1%	0.44	0.07

Topcoat	mix ratio	density	VOC Content	Water		VOC		Solids		Max Usage		Potential Emissions VOC	Controlled Emissions
	by wt	lb/gal	lb/gal	% by vol	% by wt	% by vol	% by wt	% by vol	% by wt	gal/yr	lb/yr	TPY	TPY
Black Top Coat P36B (worst-case)	0.5	10.26	5.74	0.00%	0.00%	82.07%	56.00%	17.93%	44.00%	5000.00	51291.00	14.36	
Glycol Ether PM Acetate	0.5	8.06	8.06	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	6363.65	51291.00	25.65	
Topcoat As-applied	1.00	9.16	6.90	0.00%	0.00%	91.03%	78.00%	8.97%	22.00%	11200.01	102582.00	40.01	6.00

Topcoat HAPs	MIBK		Xylene		Toluene		Potential Total HAP
	% by wt	TPY	% by wt	TPY	% by wt	TPY	TPY
Black Top Coat P36B (worst-case)	2%	0.51	1%	0.26	2%	0.51	1.28
Glycol Ether PM Acetate	0%	0.00	0%	0.00	0%	0.00	0.00
Topcoat As-applied		0.51		0.26		0.51	1.28

Controlled Emissions			
MIBK	Xylene	Toluene	Total HAP
TPY	TPY	TPY	TPY
0.08	0.04	0.08	0.19
0.00	0.00	0.00	0.00
0.08	0.04	0.08	0.19

Potential to Emit is based on worst-case coating being used at all times. Basecoat and Topcoat cannot be applied at the same time. Topcoat is worst-case.
Max usage based on 2015 information.

Mubea
Updated 7/20

8299 Galvanizing Seam Welding

Sheets of metal through the galvanizing operation are welded at the seam during this process. This welding is MAG, a type of Gas Metal Arc Welding (GMAW). The wire used is ER70S-6 with a 0.9 mm diameter. Emission Factors from AP-42 12.19.1 for welding does not include an emission factor for ER70S-6 but it does have an emission factor for E70S. This is the most similar metal with an emission factor and it is the only GMAW emission factor with an A rating. PM is assumed to be equivalent to PM10 and PM2.5.

	PM
Emission Factor (lb PM/1000lb electrode)	5.2

						0.15%	0.15%	1.63%	
Operation	Weld Consumption		PM/PM_{10}			Cr	Ni	Mn	Total HAP
	inches/hour	lb/hr	lb/hr	lb/day	TPY	TPY	TPY	TPY	TPY
Galvanizing Seam Weld	100	0.15	0.00078	0.01872	0.00342	5.12E-06	5.12E-06	5.55E-05	6.58E-05

Using weight of wire conversion of 0.0015 lb/inch. This is a conservative weight.

The Kentucky list of trivial activities states that brazing, soldering and welding equipment and cutting torches related to manufacturing and construction activities that emit HAP metals are more appropriate for treatment as insignificant activities based on size or production level thresholds. Brazing, soldering, welding and cutting torches directly related to plant maintenance, upkeep and repair or to maintenance shop activities that emit HAP metals are addressed as trivial in Item 12. The emissions from the seam welding for galvanizing are extremly low but do contain HAP so they do not qualify as trivial.

Emissions Calculations
8299 Crushtip Weld Cell

Crushtip weld cell process starts with a press that shapes metal pieces to desired shape, followed by laser welding of the seams of those pieces. Pices are transferred to a calibration press, then to laser cutting for holes and edge cutting and then to a laser marking station.

The purpose of this worksheet is to calculate the maximum emissions of all pollutants resulting from laser welding, cutting, and marking of steel tube crushtip parts. Dust collectors are utilized for collection of particulate from the welding and cutting lasers.

HAP/Air Toxic Metals Fraction:
0.60% by wt Manganese (Mn) (600 Steel Spec)
0.03% by wt Nickel (Ni) (600 Steel Spec)
0.07% by wt Chromium (Cr) (600 Steel Spec)
0.70% Total HAP

HAP emissions calculated for Mn as highest single HAP and for Total HAP

Laser Welding (TruLaser 8002 - Nitrogen):

	Part Weight	length of seam for weld	Weld Rate	Production Max	
	kg/part	mm/part	m/min	kg/min	ton/hr
WS Parts	4.84	550.00	2	17.6	1.16
DT Parts	3.54	500.00	2	14.16	0.93

Emissions - based on worst-case part:

Emission Factor	PM/PM10/PM2.5			Mn/Single HAP	Total HAP
PM lb/ton	lb/hr	lb/day	TPY	TPY	TPY
0.0054	0.006	0.151	0.027	0.00016	0.00019

PM emission factor from Indiana permit for similar operation
Emissions calculated for maximum rate as if continuous and not counting

Welding emissions vented to Donaldson Torit DCEDFPP04-57PY, venting back into the building. Potential emissions calculated without use of this control equipment.
DFO Ultra-Web FR Cartridge Filter - MERV 15

Laser Marking and Cutting:

		Cut Size (mm)	Thickness mm	Kerf of laser cut (mm)	mm3/part	in3/part
Laser Marking	laser marking size	18	5	0.05	4.5	0.00027
Nitrogen Laser Cutting	hole 1	27	6.8	0.19	34.884	0.00213
	hole 2	27	6.8	0.19	34.884	0.00213
	cut edge	332	6.8	0.19	428.944	0.02617
used max thickness of part "WS" for crush tip tubes					total of cut:	0.03042

	Maximum Kerf Size	Density of Carbon Steel	Maximum Kerf Weight	Max production	
	in^3 of steel removed/part	lbs/in^3	lb kerf removed/part	parts/hr	lb kerf removed/hr
Laser Marking	0.0002745	0.304	0.0001	175	0.01
Nitrogen Laser Cutting	0.03042	0.304	0.0092	120	1.11

Emissions - based on worst-case part:

Maximum Emission Factor: 100% of kerf weight released as a fume

	PM/PM10/PM2.5			Mn/Single HAP	Total HAP
	lb/hr	lb/day	TPY	TPY	TPY
Laser Marking	0.01	0.35	0.06	0.0004	0.0004
Nitrogen Laser Cutting	1.11	26.63	4.86	0.029	0.034

Cutting emissions vented to dust extractor MF-L 1000 - 1000 Nm3/h with camfil filters, venting back into the building.
Filter Plate MF Series - MF-L1000 filters - HEPA H13-H14 up to 99.995% of finest laser grade dust
Laser TruDisk 6003 unit is for cooling the laser and doesn't generate air emission

Total Emissions from all Crushtip Weld Cell Operations

PM/PM10/PM2.5			Mn/Single HAP	Total HAP
lb/hr	lb/day	TPY	TPY	TPY
1.131	27.136	4.952	0.030	0.035

Mubea

Miscellaneous Insignificant Operations

Updated 7/2/25

8252 Methanol Storage Tank - Updated 5/5/2016

The Transmission Spring operation (previously called Disc Spring) utilizes a methanol storage tank with a capacity of 12,000 gallons.

USEPA TANKS emissions: 0.15 TPY VOC/HAP

Powder Painting - 8224 Dixie Five Lines

Emissions from the natural gas combustion associated with the ovens for the powder paint system have been calculated on a separate page. The SDS for the powder coatings have been reviewed and VOC is negligible. Appropriate filters are utilized in the powder coating application booths for particulate emission capture. There are not any visible emissions from these operations.

There are no air emissions from this unit. Description provided for documentation only.

8224 Marking Paint

Dyken marking paint is used for inspection/quality

Material	VOC Content (% by wt)	HAP Content Toluene (% by wt)	Density (lb/gal)	Maximum Usage (gal/hr)	PTE VOC (lb/hr)	PTE VOC (TPY)	PTE HAP (lb/hr)	PTE HAP (TPY)
Dykem Markers	65.0%	1.0%	8.34	0.03	0.18	0.79	0.003	0.012
Dykem Marking Paint	85.0%	0.0%	8.34	0.07	0.52	2.27	0.00	0.000
Dykem Paint Remover	36.2%	0.0%	8.34	0.07	0.22	0.98	0.00	0.000
Total				0.18	0.92	4.03	0.003	0.012

8224 Load Test Touch-up

Material	VOC Content (% by wt)	HAP Content Toluene (% by wt)	Density (lb/gal)	Maximum Usage (gal/hr)	PTE VOC (lb/hr)	PTE VOC (TPY)	PTE HAP (lb/hr)	PTE HAP (TPY)
Krylon touch-up paint	51.5%	22.5%	6.26	0.07	0.23	1.03	0.10	0.45

8299 Galvanizing/Zinc Coating

In 2018, a new galvanizing (zinc coating) line will be installed. The steam from the process is contaminated with sulfuric acid and sodium hydroxide and is vacuumed to a scrubber which removes the water and contaminates. The water is sent to wastewater treatment and the clean air is exhausted. The contaminates could be considered particulate matter when in droplet form in the air.

Exhaust Air	10	m3/hr		
Potential contaminates:	500	mg/m3 steam, sulfuric acid, and sodium hydroxide in air stream prior to scrubber		
After Scrubber:	10	mg/m3 clean gas values after scrubber		
Emissions:	5000	mg/hr before scrubber mass		
	100	mg/hr after scrubber mass		
	2.20E-06	lb/mg conversion		
	0.01	lb/hr PM before scrubber	0.05	TPY before scrubber
	0.0002	lb/hr after scrubber	0.001	TPY after scrubber

8212 Touch-up

8212 uses a touch-up paint that is a spray powder paint and does not contain VOC

8283 Nut Weld Cell

This is a cell used for welding a nut to parts with no consumable weld materials in use. Emissions are none or neglibible.

8299 Grinding of Working Rolls

This is a grinding operation for resurfacing the rolls from the rolling mill. The grinding takes place under coolant and in a fully enclosed cell. Emissions are none or neglibible.

Old Operations

Permanently Shutdown as of 6/11/22:
6800 Touch-up
6800 Renegade Parts Washer
6800 Powder Paint Line
Permanently Shutdown as in 2021: 6800 Rust Preventative Dip Tank
8212 Development/8224 Coil Spring Tampo Prink Ink no longer used

8200 Draw Line 5 Grinding

Emission Factor: 0.01 lb/ton

Emission Factor from Ohio EPA RACM Manual Table 2.7-1 Fugitive Dust Emission Factor for Gray Iron Foundries, Finishing Castings (finishing includes grinding in description)

Control Efficiency: 99.9% by wt cartridge dust collector, venting inside the building

Conversion: 2205 lb/metric ton

Operation	Type	Vented to	Grind Rate		Uncontrolled PM/PM_{10}			Controlled PM/PM_{10}		
			metric ton/day	lb/hr	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
Grinding 1	automatic/enclosed	Cartridge Filter	40	3675	0.02	0.44	0.08	0.0000	0.0004	0.0001
Grinding 2	automatic/enclosed	Cartridge Filter	40	3675	0.02	0.44	0.08	0.0000	0.0004	0.0001
				Total:	0.04	0.88	0.16	0.0000	0.0009	0.0002

8252 Draw Line 1 Grinding

Emission Factor: 0.01 lb/ton
Emission Factor from Ohio EPA RACM Manual Table 2.7-1 Fugitive Dust Emission Factor for Gray Iron Foundries, Finishing Castings (finishing includes grinding in description)

Control Efficiency: 99.9% by wt cartridge dust collector, venting inside the building

Conversion: 2205 lb/metric ton

Operation	Type	Vented to	Grind Rate		Uncontrolled PM/PM_{10}			Controlled PM/PM_{10}		
			metric ton/day	lb/hr	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
Grinding 1	automatic/enclosed	Cartridge Filter	40	3675	0.02	0.44	0.08	0.0000	0.0004	0.0001
Grinding 2	automatic/enclosed	Cartridge Filter	40	3675	0.02	0.44	0.08	0.0000	0.0004	0.0001
				Total:	0.04	0.88	0.16	0.0000	0.0009	0.0002

Updated 10/16/24

8200 PM Emissions from Shotpeeners - PTE													Controlled Baghouse + Building	
Shotpeen	**Line**	**Throughput (kg/min)**	**Throughput (lbs/month)**	**Emission Factor (lb/1,000 lb shot)**	**Uncontrolled PM Emissions (lbs/month)**	**Uncontrolled PM Emissions (lbs/day)**	**Hours Per Day of Operation**	**Uncontrolled PM Emissions (lbs/hour)**	**Controlled PM Emissions (lbs/hour)**	**Uncontrolled PM Emissions (tons/yr)**	**Controlled PM Emissions (tons/yr) (baghouse)**	**Controlled PM Emissions (tons/yr) (baghouse+building)**	**Mn/HAP Emissions (lbs/hour)**	**Mn/HAP Emissions (tons/yr)**
1 (shutdown 7/17/19)														
2 (remove 11/24)														
3	Draw Line 3	915	86,961,600	2.7	234,796.3	7,826.5	24.0	326.1	0.1	1,408.8	1.4	0.423	0.00117	0.0051
4	Draw Line 4	915	86,961,600	2.7	234,796.3	7,826.5	24.0	326.1	0.1	1,408.8	1.4	0.423	0.00117	0.0051
5	Draw Line 5	915	86,961,600	2.7	234,796.3	7,826.5	24.0	326.1	0.1	1,408.8	1.4	0.423	0.00117	0.0051
6	Draw Line 6	915	86,961,600	2.7	234,796.3	7,826.5	24.0	326.1	0.1	1,408.8	1.4	0.423	0.00117	0.0051
TOTAL			347,846,400		939,185	31,306		1,304	0.4	5,635	5.6	1.69	0.0047	0.0203

****NOTE: THERE IS ONE BAGHOUSE/FILTER PER SHOTPEEN UNIT**

Media Used: Amasteel by Ervin Steel Shot
HAP Content: 1.20% Manganese

Emission Factor taken from AP-42 Chapter 13.2.6-Abrasive Blasting
Metal Shot EF = 10% of sand EF per Kentucky Compliance Assistance Division
Sand EF = 27 lbs/1,000 lb shot so metal shot = 27(0.1) = 2.7lbs/1,000 lb shot

Calculations:
1kg = 2.2 lb Throughtput (Lbs/Month) = Throughput(kg/min)*60min/hr*24hrs/day*2.2lb/kg*30days/month

Updated 10/16/24

8252 Coil Spring Wire - PM Emissions from Shotpeeners - PTE													Controlled Baghouse + Building	
Shotpeen	**Line**	**Throughput (kg/min)**	**Throughput (lbs/month)**	**Emission Factor (lb/1,000 lb shot)**	**Uncontrolled PM Emissions (lbs/month)**	**Uncontrolled PM Emissions (lbs/day)**	**Hours Per Day of Operation**	**Uncontrolled PM Emissions (lbs/hour)**	**Controlled PM Emissions (lbs/hour)**	**Uncontrolled PM Emissions (tons/yr)**	**Controlled PM Emissions (tons/yr) (baghouse)**	**Controlled PM Emissions (tons/yr) (baghouse+building)**	**Mn/HAP Emissions (lbs/hour)**	**Mn/HAP Emissions (tons/yr)**
DL 1 (new 11/24)	Draw Line 1 (previously DL7)	915	86,961,600	2.7	234,796.3	7,826.5	24.0	326.1	0.1	1,408.8	1.4	0.423	0.00117	0.0051
TOTAL			86,961,600		234,796	7,827		326	0.1	1,409	1.4	0.42	0.0012	0.0051

****NOTE: THERE IS ONE BAGHOUSE/FILTER PER SHOTPEEN UNIT**

Media Used: Amasteel by Ervin Steel Shot
HAP Content: 1.20% Manganese

Process Weight Rate		
metric ton/day	lb/hr	ton/hr
40	3675	1.84

Emission Factor taken from AP-42 Chapter 13.2.6-Abrasive Blasting
Metal Shot EF = 10% of sand EF per Kentucky Compliance Assistance Division
Sand EF = 27 lbs/1,000 lb shot so metal shot = 27(0.1) = 2.7lbs/1,000 lb shot

Conversion: 2205 lb/metric ton 1439.396514

Calculations:
1kg = 2.2 lb Throughtput (Lbs/Month) = Throughput(kg/min)*60min/hr*24hrs/day*2.2lb/kg*30days/month

Updated 6/2025

8224 PM Emissions from Shotpeeners - PTE													Controlled Baghouse + Building	
Shotpeen	**Line**	**Shot Throughput (kg/min)**	**Throughput (lbs/month)**	**Emission Factor (lb/1,000 lb shot)**	**Uncontrolled PM Emissions (lbs/month)**	**Uncontrolled PM Emissions (lbs/day)**	**Hours Per Day of Operation**	**Uncontrolled PM Emissions (lbs/hour)**	**Controlled PM Emissions (lbs/hour)**	**Uncontrolled PM Emissions (tons/yr)**	**Controlled PM Emissions (tons/yr) (baghouse)**	**Controlled PM Emissions (tons/yr) (baghouse+building)**	**Mn/HAP Emissions (lbs/hour)**	**Mn/HAP Emissions (tons/yr)**
	Coiling Line 1	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
	Coiling Line 2 (new 12/2025)	1,800	171,072,000	2.7	461,894.40	15,396.48	24	641.5200	0.1925	2,771.366	2.771	0.831	0.0017	0.0075
	Coiling Line 3	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
	Coiling Line 4	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
	Coiling Line 5	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
	Coiling Line 6	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
			931,392,000		2,514,758.40	83,825.28		3,492.72	1.05	15,088.55	15.09	**4.53**	**0.0094**	**0.04**

8224 PM Emissions from Stresspeeners - PTE													Controlled Baghouse + Building	
Stresspeen	**Line**	**Shot Throughput (kg/min)**	**Throughput (lbs/month)**	**Emission Factor (lb/1,000 lb shot)**	**Uncontrolled PM Emissions (lbs/month)**	**Uncontrolled PM Emissions (lbs/day)**	**Hours Per Day of Operation**	**Uncontrolled PM Emissions (lbs/hour)**	**Controlled PM Emissions (lbs/hour)**	**Uncontrolled PM Emissions (tons/yr)**	**Controlled PM Emissions (tons/yr) (baghouse)**	**Controlled PM Emissions (tons/yr) (baghouse+building)**	**Mn/HAP Emissions (lbs/hour)**	**Mn/HAP Emissions (tons/yr)**
	Coiling Line 3	1,200	114,048,000	2.7	307,929.60	10,264.32	24	427.6800	0.1283	1,847.578	1.848	0.554	0.0012	0.0050
	Coiling Line 3	1,200	114,048,000	2.7	307,929.60	10,264.32	24	427.6800	0.1283	1,847.578	1.848	0.554	0.0012	0.0050
	Coiling Line 4	1,200	114,048,000	2.7	307,929.60	10,264.32	24	427.6800	0.1283	1,847.578	1.848	0.554	0.0012	0.0050
	Coiling Line 4	1,200	114,048,000	2.7	307,929.60	10,264.32	24	427.6800	0.1283	1,847.578	1.848	0.554	0.0012	0.0050
			456,192,000		1,231,718	41,057		1,711	0.51	7,390	7.4	2.2	0.005	0.020

8224 - PM Emissions from Finepeener - PTE													Controlled Baghouse + Building	
Finepeen	**Line**	**Shot Throughput (kg/min)**	**Throughput (lbs/month)**	**Emission Factor (lb/1,000 lb shot)**	**Uncontrolled PM Emissions (lbs/month)**	**Uncontrolled PM Emissions (lbs/day)**	**Hours Per Day of Operation**	**Uncontrolled PM Emissions (lbs/hour)**	**Controlled PM Emissions (lbs/hour)**	**Uncontrolled PM Emissions (tons/yr)**	**Controlled PM Emissions (tons/yr) (baghouse)**	**Controlled PM Emissions (tons/yr) (baghouse+building)**	**Mn/HAP Emissions (lbs/hour)**	**Mn/HAP Emissions (tons/yr)**
	Coiling Line 1	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
	Coling Line 2 (new 12/2025)	1,800	171,072,000	3.7	632,966.40	21,098.88	25	843.9552	0.2532	3,797.798	3.798	1.139	0.0023	0.0103
	Coiling Line 5	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
	Coiling Line 6	1,600	152,064,000	2.7	410,572.80	13,685.76	24	570.2400	0.1711	2,463.437	2.463	0.739	0.0015	0.0067
TOTAL			627,264,000.00		1,864,684.80	62,156.16		2,554.68	0.77	11,188.11	11.19	**3.36**	**0.0069**	**0.03**

****NOTE: THERE IS ONE BAGHOUSE/FILTER PER SHOTPEEN UNIT**

Controlled PM lb/hr 8224: 2.33

Controlled Mn lb/hr 8224: 0.02095

Media Used: Toyo Seiko
HAP Content: 0.90% Manganese

Emission Factor taken from AP-42 Chapter 13.2.6-Abrasive Blasting
Metal Shot EF = 10% of sand EF per Kentucky Compliance Assistance Division
Sand EF = 27 lbs/1,000 lb shot so metal shot = 27(0.1) = 2.7lbs/1,000 lb shot

Calculations:
1kg = 2.2 lb

Throughtput (Lbs/Month) = Throughput(kg/min)*60min/hr*24hrs/day*2.2lb/kg*30days/month

8252 - Connecting Products PM Emissions from Shotpeeners													Controlled Baghouse + Building	
Shotpeen	**Line**	**Shot Throughput (kg/min)**	**Shot Throughput (lbs/month)**	**Emission Factor (lb/1,000 lb shot)**	**Uncontrolled PM Emissions (lbs/month)**	**Uncontrolled PM Emissions (lbs/day)**	**Hours Per Day of Operation**	**Uncontrolled PM Emissions (lbs/hour)**	**Controlled PM Emissions (lbs/hour)**	**Uncontrolled PM Emissions (tons/yr)**	**Controlled PM Emissions (tons/yr) (baghouse)**	**Controlled PM Emissions (tons/yr) (baghouse+building)**	**Mn/HAP Emissions (lbs/hour)**	**Mn/HAP Emissions (tons/yr)**
1	N/A	340	32,313,600	2.7	87,246.72	2,908.22	24.00	121.18	0.04	523.48	0.52	0.16	0.00033	0.0014
2	N/A	340	32,313,600	2.7	87,246.72	2,908.22	24.00	121.18	0.04	523.48	0.52	0.16	0.00033	0.0014
TOTAL			64,627,200		174,493.44	5,816.45		242.35	0.07	1,046.96	1.05	**0.31**	**0.00065**	**0.003**

****NOTE: THERE IS ONE BAGHOUSE/FILTER PER SHOTPEEN UNIT**

All TSS and TSB Lines from 8252 TDS shutdown as of 11/24

Media Used: Frohn Carbon Steel Cut Wire Shot and Toyo Seiko
HAP Content: 0.90% Manganese (worst-case Toyo Seiko)

Emission Factor taken from AP-42 Chapter 13.2.6-Abrasive Blasting
Metal Shot EF = 10% of sand EF per Kentucky Compliance Assistance Division
Sand EF = 27 lbs/1,000 lb shot so metal shot = 27(0.1) = 2.7lbs/1,000 lb shot

Calculations:
1kg = 2.2 lb Throughtput (Lbs/Month) = Throughput(kg/min)*60min/hr*24hrs/day*2.2lb/kg*30days/month

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Shotpeen Plant-Wide Emissions Summary
updated as of 6/18/25

	Controlled			
	PM		Mn	
	lb/hr	TPY	lb/hr	TPY
8200	0.39	1.69	0.0047	0.020
8224	2.33	10.10	0.0209	0.091
8252 CSW	0.10	0.42	0.0012	0.005
8252 CP	0.07	0.31	0.0007	0.003
Total	2.89	12.53	0.0275	0.119

6800 Shot Peen permanently shutdown as of 6/11/2022
8252 TDS Shot Peen permanently shutdown and removed as of 11/1/2024

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Heat Lines

Updated 6/18/25

Heat Lines

Dry lubricating soap is applied to wire at the draw line for purposes of lubricating the wire. Wire is then moved to the heat line and some of the soap comes off of the wire before and at the heat line. The soap particles are large enough that they fall to the floor and become a housekeeping issue and not an air pollutant at that point. On the heat line, then, some lubricant soap comes off of the wire due to friction from pullies, etc at the beginning of the line and is collected in housekeeping enclosures or collection cans as it comes off. Prior to heating, wire brushes are used to remove additional lubricating soap from the wire. At this step, the dust can become airborne and would be fugitive to the room or pulled through exhaust stacks. The calculations below are for the wire brush step of the process.

8200 Heat Lines

Actual Soap/Year:	40,000	lb/year		
Actual Wire/Year:	19000	coils/year		
	2.11	lb soap/coil		
Heat Lines:	12	heat lines (during year for which data was gathered)		
Production:	55.40	coils/day average	140,000	kg/day average
	232.00	coils/day maximum	455,579	kg/day maximum
	19.33	coils/line/day maximum	2.205	lb/kg
	0.81	coils/line/hr maximum	1,004,552	lb/day maximum
	4329.96	lb/coil		
	3488.03	lb/hr/line metal processed		
Emission Factor:	0.01	lb/ton		

Emission Factor from Ohio EPA RACM Manual Table 2.7-1 Fugitive Dust Emission Factor for Gray Iron Foundries, Finishing Castings

	Per Line		Total Lines 8200: 12	
Emissions:	0.02	lb/hr/line PM	0.21	lb/hr PM
	0.42	lb/day/line PM	5.02	lb/day PM
	0.08	TPY/line PM	0.92	TPY PM

*Line 12 installed November 2022

8252 Heat Lines

Emissions based on emission factor above for 8200.

Production:	55.40	coils/day average	140,000	kg/day average
	232.00	coils/day maximum	455,579	kg/day maximum
	19.33	coils/line/day maximum	2.205	lb/kg
	0.81	coils/line/hr maximum	1,004,552	lb/day maximum
	4329.96	lb/coil		
	3488.03	lb/hr/line metal processed		
Emission Factor:	0.01	lb/ton		

Emission Factor from Ohio EPA RACM Manual Table 2.7-1 Fugitive Dust Emission Factor for Gray Iron Foundries, Finishing Castings

	Per Line		Total Lines 8252: 2	
Emissions:	0.02	lb/hr/line PM	0.03	lb/hr PM
	0.42	lb/day/line PM	0.84	lb/day PM
	0.08	TPY/line PM	0.15	TPY PM

Heat Line 13 installed at 8252 in November 2024
Heat Line 14 to be installed at 8252 in August 2025

Heat lines also utilize a hand grinder for insignificant grinding of the tip of the wire. Hand grinders are trivial per the list of Trivial Activities, #15.

Heat Line 12 at 8200 utilizes an industrial vacuum to capture the soap dust and descale from the wire instead of the regular housekeeping utilized on the other lines. This does not generate any additional dust, just provides a different method of capture.
Air flow from tthis vacuum is around 150 cfm. Dust is first dropped out into a bucket and then goes through vacuum with a HEPA filter and secondary sock filter for discharge of air into the room.
Heat Lines 13 and 14 at 8252 utilize this same system.

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Emission Calculations

PROCESS DESCRIPTION:

Steel wire for suspension springs is mechanically cut to length. The metal pieces created from cutting the wire is collected by small dust collectors for housekeeping of the particles.

PROCESS DATA:

Maximum metal removed per cut:	0.5	mm loss	25.4 mm/inch	0.020	in. loss from cut
	10.5	mm dia	25.4 mm/inch	0.41	in dia
	0.13	in^2 area of cut			
	0.003	in^3 of steel removed			
Density of Steel:	0.284	lbs/in^3			
Maximum Weight Removed:	0.001	lbs steel removed/cut			

Hourly Throughput:		960	cuts/hr (per line)
	or	0.72	lbs steel removed/hr (reflects the potential capacity of the process)
Annual Througput:		8,409,600	cuts/yr (per line)
	or	6,307	lbs steel kerf removed/yr

EMISSION FACTORS:

Emission Factor: 5% of weight released as a dust

Emission factor from dry cutting of mild steel by torch from "Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel" by Goteborg, Sweden

HAP/Air Toxic Metals Fraction:	0.80%	Manganese (Mn)
(highest from all types reviewed)	0.80%	Chromium (Cr)
	0.10%	Nickel (Ni)

EMISSION RATE (per line):

	Uncontrolled Emissions		
Pollutant	Maximum Hourly (lbs/hr):	Maximum Daily (lbs/day)	Maximum Annual (TPY):
PM/PM10/PM2.5	0.04	0.864	0.16
Manganese (Mn)	0.000	0.007	0.001
Chromium (Cr)	0.000	0.007	0.001
Nickel (Ni)	0.000	0.001	0.000
Total HAP	0.001	0.015	0.003

Maximum/potential emissions above are represented as uncontrolled. A dust collector is utilized to control emissions.

Control Efficiency: 99% Removal

Total of 6 Lines:

	Uncontrolled		
Pollutant	Maximum Hourly (lbs/hr):	Maximum Daily (lbs/day)	Maximum Annual (TPY):
PM/PM10/PM2.5	0.22	5.18	0.95
Manganese (Mn)	0.00	0.04	0.01
Chromium (Cr)	0.00	0.04	0.01
Nickel (Ni)	0.00	0.01	0.00
Total HAP	0.00	0.09	0.02

	Controlled		
Pollutant	Maximum Hourly (lbs/hr):	Maximum Daily (lbs/day)	Maximum Annual (TPY):
PM/PM10/PM2.5	2.16E-03	5.18E-02	9.46E-03
Manganese (Mn)	1.73E-05	4.15E-04	7.57E-05
Chromium (Cr)	1.73E-05	4.15E-04	7.57E-05
Nickel (Ni)	2.16E-06	5.18E-05	9.46E-06
Total HAP	3.67E-05	8.81E-04	1.61E-04

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8200 Rust Prevent - Insignificant

Updated 5/22

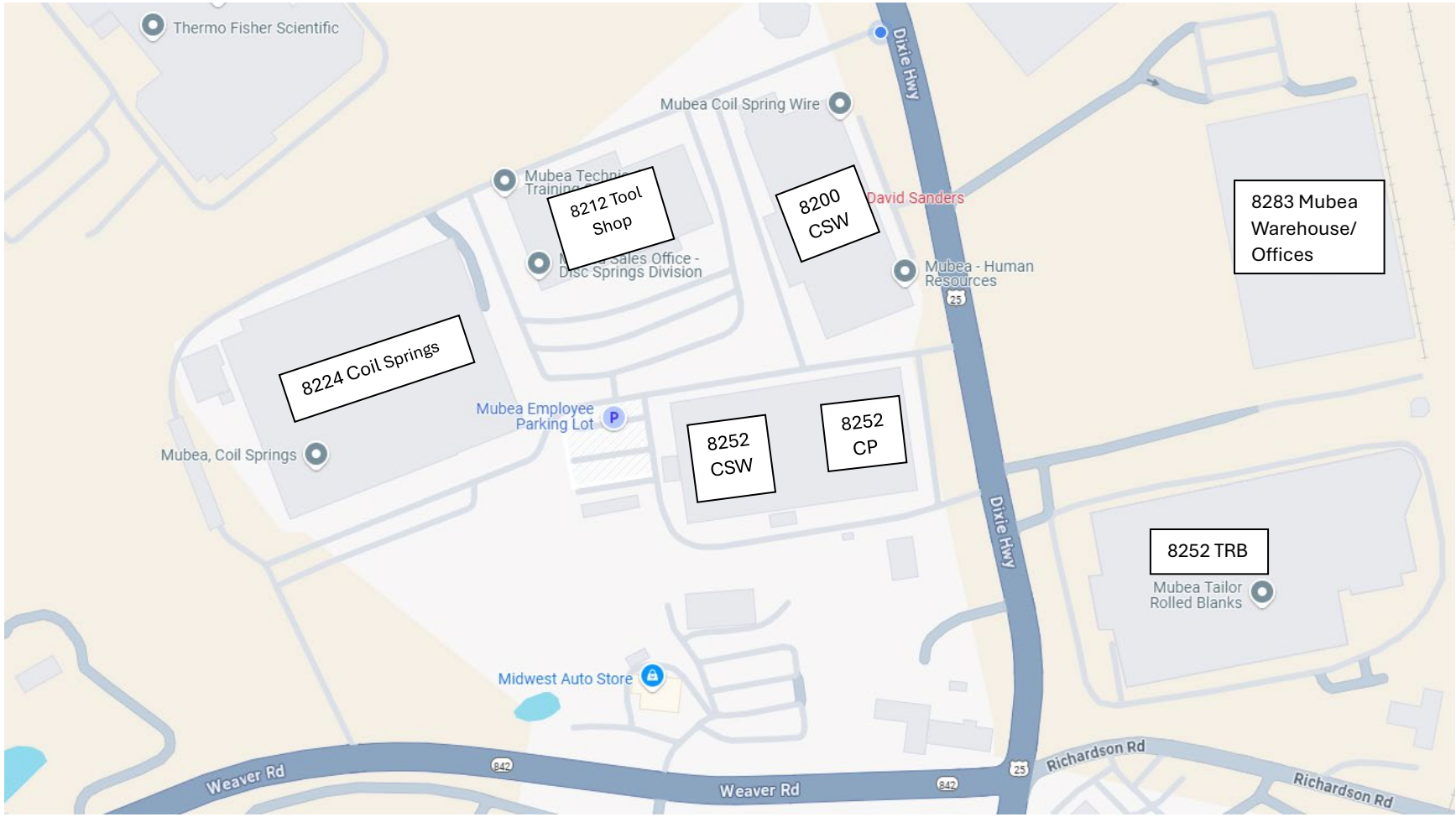
8200 Rust Prevent Application

These potential emissions are based on 8760 hours per year.

Chemical Name	Supplier/Manufacturer	VOC Content (% by wt)	VOC Content (lb/gal)	HAP Content (% by wt)	Density (lb/gal)	Maximum Usage (gal/hr)	PTE VOC (lb/hr)	PTE VOC (TPY)
Rust Prevent 100	Dubois	17.20%	1.33	0%	7.76	0.63	0.83	3.65

SECTION 5
LOCATION MAP

Mubea Dixie Highway Campus Map



SECTION 6
SDS

D21_062 Base

SAFETY DATA SHEET

1. Identification

Product identifier **D21_062 Base**

Other means of identification

Product code D21_062(5), D21_062(5)O, D21_062(D), D21_062(ND)

Recommended use Hose Clamp Coating

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Magni Industries, Inc.

Address 2771 Hammond Street
Detroit, MI 48209
United States

Telephone Telephone: +1 313-843-7855
Fax: +1 313-842-6730

E-mail sds@magnicoatings.com

Emergency phone number CHEMTREC, US +1 (800) 424-9300

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Serious eye damage/eye irritation	Category 2A
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Reproductive toxicity (the unborn child)	Category 1B
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Flammable liquid and vapor. Harmful if swallowed. Causes serious eye irritation. May cause genetic defects. May cause cancer. May damage the unborn child. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response	If swallowed: Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Rinse mouth. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish. Collect spillage.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Supplemental information	3.06% of the mixture consists of component(s) of unknown acute oral toxicity. 3.92% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 3.92% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Zinc		7440-66-6	60 - < 70
2-Ethylhexanol		104-76-7	10 - < 20
n-butyl alcohol		71-36-3	1 - < 3
1-Ethyl-2-pyrrolidinone		2687-91-4	< 1
Naphthalene		91-20-3	< 1
Silica, amorphous		7631-86-9	< 1
Stoddard solvent		8052-41-3	< 1
Zinc oxide		1314-13-2	< 1
Isobutanol		78-83-1	< 0.2
Stearic acid		57-11-4	< 0.2
Trimethylbenzenes		25551-13-7	< 0.2
Other components below reportable levels			20 - < 30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Dry sand. Carbon dioxide (CO2).
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	PEL	300 mg/m3	
		100 ppm	
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3	
		10 ppm	
n-butyl alcohol (CAS 71-36-3)	PEL	300 mg/m3	
		100 ppm	
Stoddard solvent (CAS 8052-41-3)	PEL	2900 mg/m3	
		500 ppm	
Zinc oxide (CAS 1314-13-2)	PEL	5 mg/m3	Fume.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Silica, amorphous (CAS 7631-86-9)	TWA	0.8 mg/m3
		20 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	50 ppm	
Naphthalene (CAS 91-20-3)	TWA	10 ppm	
n-butyl alcohol (CAS 71-36-3)	TWA	20 ppm	
Stearic acid (CAS 57-11-4)	TWA	10 mg/m3	
Stoddard solvent (CAS 8052-41-3)	TWA	100 ppm	
Trimethylbenzenes (CAS 25551-13-7)	TWA	25 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	150 mg/m3	
		50 ppm	
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3	
		15 ppm	
	TWA	50 mg/m3	
		10 ppm	
n-butyl alcohol (CAS 71-36-3)	Ceiling	150 mg/m3	
		50 ppm	
Silica, amorphous (CAS 7631-86-9)	TWA	6 mg/m3	
Stoddard solvent (CAS 8052-41-3)	Ceiling	1800 mg/m3	
	TWA	350 mg/m3	
Zinc oxide (CAS 1314-13-2)	Ceiling	15 mg/m3	Dust.
	STEL	10 mg/m3	Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

n-butyl alcohol (CAS 71-36-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

n-butyl alcohol (CAS 71-36-3) Skin designation applies.

US - Tennessee OELs: Skin designation

n-butyl alcohol (CAS 71-36-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Naphthalene (CAS 91-20-3) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

n-butyl alcohol (CAS 71-36-3) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Gray, dark

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -129.64 °F (-89.8 °C) estimated

Initial boiling point and boiling range 243.86 °F (117.7 °C) estimated

Flash point 100.4 °F (38.0 °C) Pensky-Martens Closed Cup

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 0.9 % estimated

Flammability limit - upper (%) 11.3 % estimated

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 3.81 hPa estimated

Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	448 °F (231.11 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	17.70 lbs/gal
Flammability class	Flammable IC
Percent volatile	26 %
Specific gravity	2.13
VOC (Weight %)	26 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
2-Ethylhexanol (CAS 104-76-7)		
Acute		
Dermal		
LD50	Guinea pig	> 8300 mg/kg
	Rabbit	1986 mg/kg
Inhalation		
LC50	Guinea pig	> 227 ppm, 6 Hours
	Rat	> 227 ppm, 6 Hours
Oral		
LD50	Rat	2053 mg/kg

Components	Species	Test Results
Isobutanol (CAS 78-83-1)		
Acute		
Dermal		
LD50	Rabbit	3392 mg/kg
Inhalation		
LC50	Rat	8000 ppm, 4 Hours
LD50	Guinea pig	19.9 mg/l
	Rabbit	26.25 mg/l
	Rat	19.2 mg/l
Oral		
LD50	Mouse	3500 mg/kg
	Rat	2.46 g/kg
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
	Rat	> 20 g/kg
Oral		
LD50	Guinea pig	1200 mg/kg
	Rat	490 mg/kg
n-butyl alcohol (CAS 71-36-3)		
Acute		
Dermal		
LD50	Rabbit	3400 mg/kg
Inhalation		
LC50	Rat	8000 ppm, 4 Hours
Oral		
LD50	Rat	790 mg/kg
Silica, amorphous (CAS 7631-86-9)		
Acute		
Oral		
LD50	Mouse	> 15000 mg/kg
	Rat	> 22500 mg/kg
Stearic acid (CAS 57-11-4)		
Acute		
Oral		
LD50	Rat	4.6 g/kg
Trimethylbenzenes (CAS 25551-13-7)		
Acute		
Oral		
LD50	Rat	8970 mg/kg
Zinc (CAS 7440-66-6)		
Acute		
Oral		
LD50	Rat	630 mg/kg
Zinc oxide (CAS 1314-13-2)		
Acute		
Inhalation		
LC50	Mouse	> 5.7 mg/l, 4 Hours

Components	Species	Test Results
Oral		
LD50	Mouse	7950 mg/kg
	Rat	> 5 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity May cause genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.
Silica, amorphous (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.
Stoddard solvent (CAS 8052-41-3)	3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity May damage the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
2-Ethylhexanol (CAS 104-76-7)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	10 - 33 mg/l, 96 hours
Isobutanol (CAS 78-83-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	950 - 1200 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus)	1000 - 3000 mg/l, 96 hours
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	1.11 - 1.68 mg/l, 96 hours
n-butyl alcohol (CAS 71-36-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1897 - 2072 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	100 - 500 mg/l, 96 hours
Zinc (CAS 7440-66-6)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	2.8 mg/l, 48 hours

Components		Species	Test Results
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.56 mg/l, 96 hours
Zinc oxide (CAS 1314-13-2)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2246 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Isobutanol	0.76
Naphthalene	3.3
n-butyl alcohol	0.88
Stearic acid	8.23
Stoddard solvent	3.16 - 7.15

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN1263

UN proper shipping name Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base, MARINE POLLUTANT (Zinc)

Transport hazard class(es)

Class 3

Subsidiary risk -

Label(s) 3

Packing group III

Environmental hazards

Marine pollutant Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions B1, B52, IB3, T2, TP1, TP29

Packaging exceptions 150

Packaging non bulk 173

Packaging bulk 242

IATA

UN number UN1263

UN proper shipping name Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base

Transport hazard class(es)

Class 3

Subsidiary risk -

Label(s) 3

Packing group	III
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1263
UN proper shipping name	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base, MARINE POLLUTANT
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT

IATA; IMDG

Marine pollutant

General information DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Isobutanol (CAS 78-83-1)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
n-butyl alcohol (CAS 71-36-3)	Listed.
Zinc (CAS 7440-66-6)	Listed.
Zinc oxide (CAS 1314-13-2)	Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc	7440-66-6	60 - < 70
n-butyl alcohol	71-36-3	1 - < 3
Naphthalene	91-20-3	< 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Naphthalene (CAS 91-20-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

2-Ethylhexanol (CAS 104-76-7)
Isobutanol (CAS 78-83-1)
Naphthalene (CAS 91-20-3)
n-butyl alcohol (CAS 71-36-3)
Silica, amorphous (CAS 7631-86-9)
Stoddard solvent (CAS 8052-41-3)
Trimethylbenzenes (CAS 25551-13-7)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

US. New Jersey Worker and Community Right-to-Know Act

Isobutanol (CAS 78-83-1)
Naphthalene (CAS 91-20-3)
n-butyl alcohol (CAS 71-36-3)
Silica, amorphous (CAS 7631-86-9)
Stoddard solvent (CAS 8052-41-3)
Trimethylbenzenes (CAS 25551-13-7)
Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

US. Pennsylvania Worker and Community Right-to-Know Law

2-Ethylhexanol (CAS 104-76-7)
Isobutanol (CAS 78-83-1)
Naphthalene (CAS 91-20-3)
n-butyl alcohol (CAS 71-36-3)
Silica, amorphous (CAS 7631-86-9)
Stoddard solvent (CAS 8052-41-3)
Trimethylbenzenes (CAS 25551-13-7)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

US. Rhode Island RTK

Isobutanol (CAS 78-83-1)
Naphthalene (CAS 91-20-3)
n-butyl alcohol (CAS 71-36-3)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Naphthalene (CAS 91-20-3) Listed: April 19, 2002

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 04-14-2015

Version # 01

Disclaimer Magni Industries, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. 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.

P36B Base

SAFETY DATA SHEET

1. Identification

Product identifier **P36B Base**

Other means of identification

Product code P36B(5)O, P36B(P), P36B(D)O, P36B(ND), P36B(ND)O, P36B(D), P36B(S), P36B(5)

Recommended use Black Topcoat

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Magni Industries, Inc.

Address 2771 Hammond Street
Detroit, MI 48209
United States

Telephone Telephone: +1 313-843-7855
Fax: +1 313-842-6730

E-mail sds@magnicoatings.com

Emergency phone number CHEMTREC, US +1 (800) 424-9300

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements

Signal word Warning

Hazard statement Flammable liquid and vapor. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	65.59% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Propylene glycol monomethyl ether acetate (PMA)		108-65-6	40 - < 50
Bisphenol A epoxy resin		25068-38-6	5 - < 10
Manganese ferrite black spinel		68186-94-7	3 - < 5
Cyclohexanone		108-94-1	1 - < 3
Magnesium oxide		1309-48-4	1 - < 3
Methyl isobutyl ketone (MIBK)		108-10-1	1 - < 3
Talc		14807-96-6	1 - < 3
Toluene		108-88-3	1 - < 3
Silica, amorphous		7631-86-9	< 1
Xylene		1330-20-7	< 1
Other components below reportable levels			30 - < 40

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2). Dry sand.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.
Manganese ferrite black spinel (CAS 68186-94-7)	Ceiling	5 mg/m3	
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	PEL	410 mg/m3	
		100 ppm	
Xylene (CAS 1330-20-7)	PEL	435 mg/m3	
		100 ppm	

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Silica, amorphous (CAS 7631-86-9)	TWA	0.8 mg/m3	
		20 mppcf	
Talc (CAS 14807-96-6)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		20 mppcf	
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Manganese ferrite black spinel (CAS 68186-94-7)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	STEL	75 ppm	
	TWA	20 ppm	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
Toluene (CAS 108-88-3)	TWA	20 ppm	
Xylene (CAS 1330-20-7)	STEL	150 ppm	
	TWA	100 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3	
		25 ppm	
Manganese ferrite black spinel (CAS 68186-94-7)	STEL	3 mg/m3	Fume.
	TWA	1 mg/m3	Fume.
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	STEL	300 mg/m3	
		75 ppm	
	TWA	205 mg/m3	
		50 ppm	
Silica, amorphous (CAS 7631-86-9)	TWA	6 mg/m3	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable.
Toluene (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Propylene glycol monomethyl ether acetate (PMA) (CAS 108-65-6)	TWA	50 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	1 mg/l	Methyl isobutyl ketone	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Cyclohexanone (CAS 108-94-1)	Can be absorbed through the skin.
Propylene glycol monomethyl ether acetate (PMA) (CAS 108-65-6)	Can be absorbed through the skin.
Toluene (CAS 108-88-3)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)	Skin designation applies.
Toluene (CAS 108-88-3)	Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)	Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)	Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Cyclohexanone (CAS 108-94-1)	Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Black

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point	-138.82 °F (-94.9 °C) estimated
Initial boiling point and boiling range	231.08 °F (110.6 °C) estimated
Flash point	107.6 °F (42.0 °C) Pensky-Martens Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.9 % estimated
Flammability limit - upper (%)	12 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	5.27 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	631.4 °F (333 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	10.26 lbs/gal
Flammability class	Combustible II estimated
Percent volatile	56 %
Specific gravity	1.23
VOC (Weight %)	56 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity	May cause an allergic skin reaction.

Components	Species	Test Results
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)		
Acute		
Dermal		
LD50	Rabbit	> 16000 mg/kg
Inhalation		
LC50	Rat	8.2 mg/l, 4 Hours
Oral		
LD50	Rat	2080 mg/kg
Silica, amorphous (CAS 7631-86-9)		
Acute		
Oral		
LD50	Mouse	> 15000 mg/kg
	Rat	> 22500 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12124 mg/kg
		14.1 ml/kg
Inhalation		
LC50	Mouse	5320 ppm, 8 Hours
		400 ppm, 24 Hours
	Rat	26700 ppm, 1 Hours
		12200 ppm, 2 Hours
		8000 ppm, 4 Hours
Oral		
LD50	Rat	2.6 g/kg
Xylene (CAS 1330-20-7)		
Acute		
Dermal		
LD50	Rabbit	> 43 g/kg
Inhalation		
LC50	Mouse	3907 mg/l, 6 Hours
	Rat	6350 mg/l, 4 Hours
Oral		
LD50	Mouse	1590 mg/kg
	Rat	3523 - 8600 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Risk of cancer cannot be excluded with prolonged exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	2B Possibly carcinogenic to humans.
Silica, amorphous (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.

Talc (CAS 14807-96-6)	2B Possibly carcinogenic to humans. 3 Not classifiable as to carcinogenicity to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
Xylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
Cyclohexanone (CAS 108-94-1)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	481 - 578 mg/l, 96 hours
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	492 - 593 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours
Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	7.711 - 9.591 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)	
Cyclohexanone	0.81
Methyl isobutyl ketone (MIBK)	1.31
Toluene	2.73
Xylene	3.12 - 3.2

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1263
UN proper shipping name	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B1, B52, IB3, T2, TP1, TP29
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242

IATA

UN number	UN1263
UN proper shipping name	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1263
UN proper shipping name	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

DOT

IATA; IMDG

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cyclohexanone (CAS 108-94-1)	Listed.
Manganese ferrite black spinel (CAS 68186-94-7)	Listed.
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	Listed.
Toluene (CAS 108-88-3)	Listed.
Xylene (CAS 1330-20-7)	Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Manganese ferrite black spinel	68186-94-7	3 - < 5
Methyl isobutyl ketone (MIBK)	108-10-1	1 - < 3
Toluene	108-88-3	1 - < 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Manganese ferrite black spinel (CAS 68186-94-7)
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	6715
Toluene (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	35 %WV
Toluene (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	6715
Toluene (CAS 108-88-3)	594

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Cyclohexanone (CAS 108-94-1)
Magnesium oxide (CAS 1309-48-4)
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)
Silica, amorphous (CAS 7631-86-9)
Talc (CAS 14807-96-6)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. New Jersey Worker and Community Right-to-Know Act

Cyclohexanone (CAS 108-94-1)
Magnesium oxide (CAS 1309-48-4)
Manganese ferrite black spinel (CAS 68186-94-7)
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)
Silica, amorphous (CAS 7631-86-9)
Talc (CAS 14807-96-6)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Cyclohexanone (CAS 108-94-1)
Magnesium oxide (CAS 1309-48-4)
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)
Silica, amorphous (CAS 7631-86-9)
Talc (CAS 14807-96-6)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. Rhode Island RTK

Cyclohexanone (CAS 108-94-1)
Manganese ferrite black spinel (CAS 68186-94-7)
Methyl isobutyl ketone (MIBK) (CAS 108-10-1)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Methyl isobutyl ketone (MIBK) (CAS 108-10-1)	Listed: November 4, 2011

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Toluene (CAS 108-88-3)	Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3)	Listed: August 7, 2009

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	03-31-2015
Version #	01
Disclaimer	Magni Industries, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. 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.

Crystal Clean 142 Mineral Spirits

SAFETY DATA SHEET

1. Identification

Product identifier	**Crystal Clean 142 Mineral Spirits**	
Other means of identification		
SDS number	915876	
Recommended use	Not available.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	Heritage-Crystal Clean, LLC	
Address	2175 Point Boulevard Suite 375 Elgin, IL 60123-9211	
Telephone	Technical Questions	877-938-7948
Website	www.crystal-clean.com	
E-mail	cc_ehs@crystal-clean.com	
Emergency phone number	Chemtrec	800-424-9300

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Skin corrosion/irritation	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word	Warning
Hazard statement	Combustible liquid. Causes skin irritation. May cause drowsiness or dizziness. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Keep away from flames and hot surfaces-No smoking. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/eye protection/face protection.
Response	If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media for extinction. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Distillates (petroleum), hydrotreated light		64742-47-8	100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing. Wash off with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms/effects, acute and delayed Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Irritant effects.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers.

General fire hazards Combustible liquid.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Keep away from heat and sources of ignition. Keep container tightly closed. Store in a well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m3

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear eye/face protection. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection
Wear protective gloves.

Other
Wear appropriate chemical resistant clothing.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state
Liquid.

Form
Liquid.

Color
Clear to light blue.

Odor
Hydrocarbon.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
Not available.

Initial boiling point and boiling range
> 366.8 °F (> 186 °C)

Flash point
> 142.0 °F (> 61.1 °C) Tag Closed Cup

Evaporation rate
Not available.

Flammability (solid, gas)
Not available.

Upper/lower flammability or explosive limits

Explosive limit - lower (%)
1

Explosive limit - upper (%)
6

Vapor pressure
< 1 mm Hg @ 20 C, 68 F

Vapor density
> 1

Relative density
0.78 - 0.81

Solubility(ies)

Solubility (water)
Not available.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	> 440 °F (> 226.67 °C)
Decomposition temperature	Not available.
Viscosity	1.69 cSt (77 °F (25 °C))
Other information	
Percent volatile	100
VOC (Weight %)	100 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	Based on available data, the classification criteria are not met.
Ingestion	Based on available data, the classification criteria are not met.
Symptoms related to the physical, chemical and toxicological characteristics	Irritant effects. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5.28 mg/l, 4 hours
Oral		
LD50	Rat	> 5000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	
Respiratory sensitization	Due to lack of data the classification is not possible.
Skin sensitization	Due to lack of data the classification is not possible.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Due to lack of data the classification is not possible.

Specific target organ toxicity - single exposure	Narcotic effects.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Due to lack of data the classification is not possible.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available for this product.
Mobility in soil	Not available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Dispose in accordance with applicable federal, state, and local regulations. Return the empty cylinder to the supplier.

14. Transport information

DOT

Not regulated as dangerous goods.

DOT BULK

BULK

UN number	UN1268
UN proper shipping name	Petroleum distillates, n.o.s. (Distillates (petroleum), hydrotreated light)
Transport hazard class(es)	
Class	3
Label(s)	3
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Special provisions	144, B1, IB3, T4, TP1, TP29
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN1268
UN proper shipping name	Petroleum Distillates, n.o.s. (Distillates (petroleum), hydrotreated light)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1268
UN proper shipping name	Petroleum Distillates, n.o.s. (Distillates (petroleum), hydrotreated light)
Transport hazard class(es)	
Class	3
Subsidiary risk	-

Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. New Jersey Worker and Community Right-to-Know Act

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. Pennsylvania Worker and Community Right-to-Know Law

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 22-January-2014

Revision date 11-February-2015

Version # 02

HMIS® ratings Health: 1
Flammability: 2
Physical hazard: 0

NFPA ratings

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available.

Methanol

SECTION 7
Shot Peen List

Mubea
Shot Peen List
Updated 6/25

Building	Name	Type	Year Installed	Maximum Capacity (ton/hr)	Max Shot Blast Rate (kg/min)	
8200	Draw Line 3	Shotpeen	1998	0.16	915	
8200	Draw Line 4	Shotpeen	1998	0.16	915	
8200	Draw Line 5	Shotpeen	1999	0.16	915	
8200	Draw Line 6	Shotpeen	2023	0.16	915	
8252	Draw Line 1 (previously 7)	Shotpeen	2024	1.84	915	
8224	Coiling Line 1	Shotpeen	2001	0.28	1,600	
8224	Coiling Line 2	Shotpeen	new 12/2025	8.33	1800 (4x450)	80 m/sec
8224	Coiling Line 3	Shotpeen	2003	0.28	1,600	
8224	Coiling Line 4	Shotpeen	2005	0.28	1,600	
8224	Coiling Line 5	Shotpeen	2015	0.28	1,600	
8224	Coiling Line 6	Shotpeen	2015	0.28	1,600	
8224	Coiling Line 3	Stresspeen	2004	0.21	1,200	
8224	Coiling Line 3	Stresspeen	2004	0.21	1,200	
8224	Coiling Line 4	Stresspeen	2004	0.21	1,200	
8224	Coiling Line 4	Stresspeen	2004	0.21	1,200	
8224	Coiling Line 1	finepeen	2015	0.28	1,600	
8224	Coling Line 2	finepeen	new 12/2025	8.33	1800 (4 x 450)	60 m/sec
8224	Coiling Line 5	finepeen	2015	0.28	1,600	
8224	Coiling Line 6	finepeen	2015	0.28	1,600	
8252	Hose Clamp 1	Shotpeen	2001	0.06	340	
8252	Hose Clamp 2	Shotpeen	1997	0.06	340	