



May 26, 2026

Kentucky Division for Air Quality
Attn: Jonathon Hughes
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

**Re: Air Permit Application
MELCO HVAC US, Inc.
Maysville, Kentucky
August Mack Project Number KA0442.251**

Mr. Jonathon Hughes

On behalf of MELCO HVAC US, Inc. (MEHVAC), August Mack Environmental, Inc., (August Mack) is requesting review and approval of the enclosed *revised* Air Permit Application package. The application package consists of:

- Attachment A - DEP7007 Forms
- Attachment B - List of Emission Units
- Attachment C - Supporting Calculations
- Attachment D - Process Flow Diagram
- Attachment E - Site Map
- Attachment F - Safety Data Sheets

The revisions include the following:

- Using the maximum rated capacity of the spray gun for the EU#11 Spray Booth PTE on form K.2 EU#11 and in the supporting calculations
- Switched the permitting classification from State-Origin to Conditional Major and provided requested limits on form AI.4.
 - Added a limited PTE (tons/year) table to the front of the supporting calculations to show the HAP limits.
- Corrected units in the supporting calculations.
- Switched the degreasing chemical in the EU#8 CS Mn Line Dipping from Bonderite C-AK 907 Alkaline to Bonderite C-AK-305.
 - Updated Att F - SDSs with the change.
- Added two, 60kW Natural Gas Backup Generators
 - Added EE forms and supporting calculations. Updated DD forms.
- Updated N.1 forms with newly calculated emissions.
- Added a Process Flow Diagram for the QC testing equipment building.

Mr. Jonathon Hughes

May 26, 2026

If you have any questions regarding this submission, please feel free to contact us.

Sincerely,



Ryan Gerbitz
Compliance Consultant



Ryan Markland
Senior Technical Manager

Attachment

ATTACHMENT A

DEP7007 Forms

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007AI Administrative Information ___ Section AI.1: Source Information ___ Section AI.2: Applicant Information ___ Section AI.3: Owner Information ___ Section AI.4: Type of Application ___ Section AI.5: Other Required Information ___ Section AI.6: Signature Block ___ Section AI.7: Notes, Comments, and Explanations	Additional Documentation ___ Additional Documentation attached
--	--	--

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: _____

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section AI.1: Source Information					
Physical Location	Street:	<u>1705 Downing Drive</u>			
Address:	City:	County:	Zip Code:	<u>41056</u>	
	Street or P.O. Box:	<u>1705 Downing Drive</u>			
Mailing Address:	City:	State:	Zip Code:	<u>41056</u>	

Standard Coordinates for Source Physical Location	
Longitude: <u>-83.8335</u> (decimal degrees)	Latitude: <u>38.64819</u> (decimal degrees)

Primary (NAICS) Category: Compressor manufacturing Primary NAICS #: 333912

Classification (SIC) Category:	<u>Air and Gas Compressors</u>	Primary SIC #:	<u>3563</u>
Briefly discuss the type of business conducted at this site:			
Description of Area Surrounding Source:	<input type="checkbox"/> Rural Area <input type="checkbox"/> Industrial Park <input type="checkbox"/> Residential Area <input type="checkbox"/> Urban Area <input type="checkbox"/> Industrial Area <input checked="" type="checkbox"/> Commercial Area	Is any part of the source located on federal land?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Approximate distance to nearest residence or commercial property:	<u>250 feet</u>	Property Area:	<u>1,045,440 sq. ft</u>
		Is this source portable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?			
NPDES/KPDES:	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A
Solid Waste:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
RCRA:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
UST:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
Type of Regulated Waste Activity:	<input type="checkbox"/> Mixed Waste Generator <input type="checkbox"/> Generator <input type="checkbox"/> Recycler <input type="checkbox"/> Other: _____ <input type="checkbox"/> U.S. Importer of Hazardous Waste <input type="checkbox"/> Transporter <input type="checkbox"/> Treatment/Storage/Disposal Facility <input checked="" type="checkbox"/> N/A		

Section AI.2: Applicant Information

Applicant Name: MELCO HVAC US, Inc.

Title: (if individual) _____

Mailing Address: **Street or P.O. Box:** 1705 Downing Drive
City: Maysville **State:** Kentucky **Zip Code:** 41056

Email: (if individual) _____

Phone: 606.759.5760

Technical Contact

Name: Kenny Pitakis

Title: Vice President, Operations

Mailing Address: **Street or P.O. Box:** 1705 Downing Drive
City: Maysville **State:** KY **Zip Code:** 41056

Email: Kenny.Pitakis@mehvac.meus.com

Phone: 606.407.9131

Air Permit Contact for Source

Name: Same as Technical Contact

Title: _____

Mailing Address: **Street or P.O. Box:** _____
City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

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
N/A	
_____	_____
_____	_____
_____	_____

Section AI.4: Type of Application

Current Status: Title V Conditional Major State-Origin General Permit Registration None

Requested Action: (check all that apply)

Name Change Initial Registration Significant Revision Administrative Permit Amendment

Renewal Permit Revised Registration Minor Revision Initial Source-wide Operating Permit

502(b)(10)Change Extension Request Addition of New Facility Portable Plant Relocation Notice

Revision Off Permit Change Landfill Alternate Compliance Submittal Modification of Existing Facilities

Ownership Change Closure

Requested Status: Title V Conditional Major State-Origin PSD NSR Other: _____

Is the source requesting a limitation of potential emissions? Yes No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
<input type="checkbox"/> Particulate Matter	_____	<input checked="" type="checkbox"/> Single HAP	<u>9.99 tons per 12 month rolling</u>
<input type="checkbox"/> Volatile Organic Compounds (VOC)	_____	<input checked="" type="checkbox"/> Combined HAPs	<u>22 tons per 12 month rolling</u>
<input type="checkbox"/> Carbon Monoxide	_____	<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____
<input type="checkbox"/> Nitrogen Oxides	_____	<input type="checkbox"/> Carbon Dioxide	_____
<input type="checkbox"/> Sulfur Dioxide	_____	<input type="checkbox"/> Greenhouse Gases (GHG)	_____
<input type="checkbox"/> Lead	_____	<input type="checkbox"/> Other	_____

For New Construction:

Proposed Start Date of Construction: (MM/YYYY) _____

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

For Modifications:

Proposed Start Date of Modification: (MM/YYYY) _____ 07/2026

Proposed Operation Start-Up Date: (MM/YYYY) _____ 05/2027

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:

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

Section AI.6: Signature Block

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

Signed by: Kenny Pitakis

94B461B35C5C44E...
Authorized Signature

Kenny Pitakis

Type or Printed Name of Signatory

5/28/2026

Date

VP, Operations

Title of Signatory

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

Section A1.7: Notes, Comments, and Explanations

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007B</h2> <h3 style="margin: 0;">Manufacturing or Processing Operations</h3> <p style="margin: 5px 0 0 20px;"> <input type="checkbox"/> Section B.1: Process Information <input type="checkbox"/> Section B.2: Materials and Fuel Information <input type="checkbox"/> Section B.3: Notes, Comments, and Explanations </p>
<p style="margin: 0;">Source Name: MELCO HVAC US, Inc.</p> <p style="margin: 0;">KY EIS (AFS) #: 21- 161-00038</p> <p style="margin: 0;">Permit #: 0</p> <p style="margin: 0;">Agency Interest (AI) ID: 35349</p> <p style="margin: 0;">Date: 3/13/2026</p>	
<p style="margin: 0;">Additional Documentation</p> <p style="margin: 5px 0 0 20px;"> <input type="checkbox"/> Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG. <input type="checkbox"/> Attach a flow diagram <input type="checkbox"/> Attach SDS </p>	

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)
EU#1	Degreasing	Aqueous degreasing operation using 6 wash baths and 5 rinse baths.	P001	Assembly Wash Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#2	Rust Prevention Electric	Anti-rust bath	P001	Assembly Wash Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#3	Drying Oven	Parts dryer	P001	Assembly Wash Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#4	Brazing Process	Torch for use on steel parts	P002	Brazing and Welding	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#5	Welding	MIG, TIG, MAG and plasma welding	P002	Brazing and Welding	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#6	Paint Dipping Wet	Dip coating	P003	Paint Dipping	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#7	Machining	Using cutting fluid for machining process	P004	Assembly Area	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#8	C/S Mn Line	Degreasing, manganese phosphate treatment, chemical treatment, and rust inhibitor dipping	P004	C/S Mn Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#9	Two (2) Electric Drying Ovens	Parts Dryers	P004	C/S Mn Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#10	Machining	Buffing process after the C/S Mn line process	P005	Machining	Unknown	Unknown	07/2026	Batch	N/A	N/A

Section B.3: Notes, Comments, and Explanations
EU#1 unit uses aqueous cleaning solution containing 0% VOC and 0% HAP for degreasing. No regulated air contaminants are emitted. Does not meet applicability thresholds of 401 KAR 59 (VOC standards) or 40 CFR 63 (HAP/NESHAP). EU#1 and EU#3 (electric drying oven) are a part of a process line (P001) including degreasing (EU#1), rust prevention (EU#2) and electric drying oven (EU#3), therefore, they were assigned emission unit IDs.
The electric drying ovens (EU#9 and EU#13) are a part of a process line, therefore, they were assigned emission unit IDs.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007DD</h2> <h3 style="margin: 0;">Insignificant Activities</h3> <p style="margin: 0;"> <input type="checkbox"/> Section DD.1: Table of Insignificant Activities <input type="checkbox"/> Section DD.2: Signature Block <input type="checkbox"/> Section DD.3: Notes, Comments, and Explanations </p>
Source Name:	<u>MELCO HVAC US, Inc.</u>
KY EIS (AFS) #:	<u>21- 161-00038</u>
Permit #:	<u>0</u>
Agency Interest (AI) ID:	<u>35349</u>
Date:	<u>3/13/2026</u>

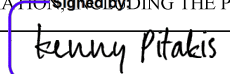
Section DD.1: Table of Insignificant Activities

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

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA#1	12 - QA rooms for testing compressors	N/A	None – no regulated emissions	0
IA#2	Paved Roads	N/A	401 KAR 52:030, general dust control	<5 tpy PM/PM10/PM2.5
IA#3	Aqueous Degreasers	Unknown	401 KAR 52:020 – Insignificant Activities	0
IA#4	2 - N.G. 60 kW Backup Generators	Unknown	40 CFR 60, Subpart JJJJ, 40 CFR 63 Subpart ZZZZ	1.23 tpy NOx

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.

	_____ 5/28/2026 Date
By:	 _____ Authorized Signature
	_____ VP, Operations
	_____ Title of Signatory
	_____ Type/Print Name of Signatory

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)
IA#4	Emergency	100	No	NA	NA

Section EE.6: Notes, Comments, and Explanations

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007HH Haul Roads _____ Section HH.1: Haul Roads _____ Section HH.2: Yard Area _____ Section HH.3: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007A1, DEP7007N and DEP7007V ___ SDS for dust suppressant
--	--	--

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section HH.1: Haul Roads

HH.1A Unpaved Haul Roads:

Average Number of Days in a Year with 0.01 inches of Precipitation (P): _____ Days

Mean Vehicle Weight (W): _____ Tons

Surface Material Silt Content (s): _____ %

Haul Road Length: _____ Miles

Maximum Vehicle Miles Traveled in a Year: _____ Miles

Describe the dust control method for unpaved haul road(s):
 (If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Wet Suppression

Emission factor: Wet Suppression Value taken from AP-42 11.19.1-5

HH.1B Paved Haul Roads:

Average Number of Days in a Year with 0.01 inches of Precipitation (P): 125 Days

Mean Vehicle Weight (W): 48 Tons

Road Surface Silt Loading (sL): 9.7 (G/M²)

Haul Road Length: 0.13 Miles

Maximum Vehicle Miles Traveled in a Year: 580.7 Miles

Describe the dust control method for paved haul road(s):
 (If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Section HH.2: Yard Area (Aggregate Handling And Storage Piles):

Average Number of Days in a Year with 0.01 inches of Precipitation (P): _____ Days

Mean Wind Speed (U): _____ MPH

Material Moisture Content (M): _____ %

Describe the dust control method for yard area:
 (If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Stockpile fugitive emissions are based on the amount of fugitive particulate emissions created by wind erosion of material storage piles, based on 8,760 hours of use and USEPA's AP 42 (Pre 1983 Edition), Section 11.2.3 emission factor methodology. See Attachment B - Calculations for complete details and methodology.

DEP7007K

Surface Coating or Printing Operations

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

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

Additional Documentation

Complete DEP7007A1, DEP7007N, DEP7007V, and DEP7007GG.

Attach SDS or Technical Sheets for all Coating/Printing Materials

Attach a flow diagram

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section K.1: Process Information

Emission Unit #: EU#11

Emission Unit Name: Spray Coating Booth

Coating/Printing Line Name: _____

Proposed/Actual Date of Construction: (MM/YYYY) Jul-26

List Applicable Regulations: 401 KAR 59:225

Describe Overall Process: High-volume low-pressure air spray guns for applying coating to metal parts

Describe Coatings/Printing Materials: Defric coating, an additive and a solvent are used

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

Provide detailed description of material coated/printed: Metal parts for HVAC compressors

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

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: _____

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

Describe Final Product: HVAC Compressors

Check the category that most closely describes this unit:

<input type="checkbox"/> Large Appliance Coating	<input type="checkbox"/> Auto or Light-Duty Truck Coating	<input type="checkbox"/> Metal Furniture Coating	<input type="checkbox"/> Metal Coil Coating
<input type="checkbox"/> Beverage Can Coating	<input checked="" type="checkbox"/> Miscellaneous Metal Parts Coating	<input type="checkbox"/> Magnet Wire Insulation Coating	<input type="checkbox"/> Flat Wood Panel Coating
<input type="checkbox"/> Fabric, Vinyl, or Paper Coating	<input type="checkbox"/> Boat Manufacturing/ Ship Repair	<input type="checkbox"/> Pressure Sensitive Tape and Label Coating	<input type="checkbox"/> Magnet Tape Coating
<input type="checkbox"/> Publication Rotogravure Printing	<input type="checkbox"/> Coating of Plastic Parts for Business Machines	<input type="checkbox"/> Flexible Vinyl and Urethane Coating and Printing	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Graphic Arts using Rotogravure and Flexographic Printing			

Section K.2: Coating Operations					
K.2A: For Spray Coating					
Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
EU#11	Application of coating	<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input checked="" type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic	1.05 gal/hr	<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
If spray guns are used simultaneously, describe:					
K.2B: For Brush Coating					
Describe Function:					
Maximum Coating Application Rate: <i>(gal/hr)</i>					
K.2C: For Roller Coating					
Roller Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

K.2D: For Powder Coating			
Powder Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
If powder coating material is recycled, describe:			
K.2E: For Flow Coating			
Flow Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
K.2F: For Dip Tank/Electrodeposition Coating			
Tank ID	Describe Function	Maximum Make-up Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:
Complete Form DEP7007B as applicable

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity (MMBtu/hr)	Fuel	Control Device/Stack ID
	Electric dryer	N/A		N/A

K.3C: For Purge

Type: _____ gal/day
Daily Usage: _____

K.3D: For Clean-up

Type: Manual Automatic
Daily Usage: _____ hrs/day
Operating Hours: _____

K.3E: For Other Equipment

Describe Processes:

Section K.4: Coatings/Printing Materials As Applied

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

Trade Name of Material	Description <i>(Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)</i>	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density <i>(lb/gal)</i>	Solid Content <i>(lb/gal)</i>	VOC Content <i>(lb/gal)</i>	Emission Factor for PM* <i>(lb/SCC)</i>	Transfer Efficiency <i>(%)</i>	Emission Factor for VOC <i>(lb/SCC)</i>	Capture Efficiency <i>(%)</i>	Control Device/Stack ID
DEFRIC COAT HMB-2M	Coating	EU#11	40200301	gal	9.17	0.736	8.44		65		98	CE#1/S1
Additive ADX-35	Additive	EU#11	40200301	gal	8.92	2.67	6.25		65		98	CE#1/S1
Solvent HMB-2	Solvent	EU#11	40200301	gal	8.59	0	8.59		100			

*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
DEFRIC COAT HMB-2M	Xylene	1330-20-7	V	10		CE#1/ S1
DEFRIC COAT HMB-2M	1,4 Dioxane	123-91-1	V	50		CE#1/ S1
DEFRIC COAT HMB-2M	Ethylbenzene	100-41-4	V	10		CE#1/ S1
Additive ADX-35	1,4 Dioxane	123-91-1	V	50		CE#1/ S1
Solvent HMB-2	1,4 Dioxane	123-91-1	V	70		CE#1/ S1

DEP7007K

Surface Coating or Printing Operations

Additional Documentation

Division for Air Quality

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

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

- Complete DEP7007A1, DEP7007N, DEP7007V, and DEP7007GG.
- Attach SDS or Technical Sheets for all Coating/Printing Materials
- Attach a flow diagram

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section K.1: Process Information

Emission Unit #: EU#6

Emission Unit Name: Paint Dip Coating

Coating/Printing Line Name: _____

Proposed/Actual Date of Construction: (MM/YYYY) Jul-26

List Applicable Regulations: 401 KAR 59:225

Describe Overall Process: Dip coating for applying coating to metal parts

Describe Coatings/Printing Materials: PPG Powercron 10 (P100-491)

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

Provide detailed description of material coated/printed: Metal parts for HVAC compressors

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

Identify the Type of Operation: Continuous Batch Other: _____

Describe Surface Preparation/Pretreatment Steps: None

For Coating Operations: Spray Flow Dip tank Electrodeposition Brush Powder Roller Coat Other: _____

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

Describe Final Product: HVAC Compressors

Check the category that most closely describes this unit:

<input type="checkbox"/> Large Appliance Coating	<input type="checkbox"/> Auto or Light-Duty Truck Coating	<input type="checkbox"/> Metal Furniture Coating	<input type="checkbox"/> Metal Coil Coating
<input type="checkbox"/> Beverage Can Coating	<input checked="" type="checkbox"/> Miscellaneous Metal Parts Coating	<input type="checkbox"/> Magnet Wire Insulation Coating	<input type="checkbox"/> Flat Wood Panel Coating
<input type="checkbox"/> Fabric, Vinyl, or Paper Coating	<input type="checkbox"/> Boat Manufacturing/ Ship Repair	<input type="checkbox"/> Pressure Sensitive Tape and Label Coating	<input type="checkbox"/> Magnet Tape Coating
<input type="checkbox"/> Publication Rotogravure Printing	<input type="checkbox"/> Coating of Plastic Parts for Business Machines	<input type="checkbox"/> Flexible Vinyl and Urethane Coating and Printing	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Graphic Arts using Rotogravure and Flexographic Printing			

Section K.2: Coating Operations					
K.2A: For Spray Coating					
Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
If spray guns are used simultaneously, describe:					
K.2B: For Brush Coating					
Describe Function:					
Maximum Coating Application Rate: <i>(gal/hr)</i>					
K.2C: For Roller Coating					
Roller Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

K.2D: For Powder Coating					
Powder Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
If powder coating material is recycled, describe:					
K.2E: For Flow Coating					
Flow Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
K.2F: For Dip Tank/Electrodeposition Coating					
Tank ID	Describe Function	Maximum Make-up Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
EU#6	Application of coating by dipping	0.67 lb/hr	<input type="checkbox"/> Testing <input checked="" type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:
Complete Form DEP7007B as applicable

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity (MMBtu/hr)	Fuel	Control Device/Stack ID
	Electric dryer	N/A		N/A

K.3C: For Purge

Type: _____ gal/day
Daily Usage: _____

K.3D: For Clean-up

Type: Manual Automatic
Daily Usage: _____ hrs/day
Operating Hours: _____

K.3E: For Other Equipment

Describe Processes:

Section K.4: Coatings/Printing Materials As Applied

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

Trade Name of Material	Description <i>(Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)</i>	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density <i>(lb/gal)</i>	Solid Content <i>(lb/gal)</i>	VOC Content <i>(lb/gal)</i>	Emission Factor for PM* <i>(lb/SCC)</i>	Transfer Efficiency <i>(%)</i>	Emission Factor for VOC <i>(lb/SCC)</i>	Capture Efficiency <i>(%)</i>	Control Device/Stack ID
PPG Powercron 10X	Coating	EU#6	40200302	lb/yr	8.82	0.08	0.26	0	100	3.46x10-6	N/A	None

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

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007M Metal Cleaning Degreasers ___ Section M.1: Cold Cleaning Degreasers Only ___ Section M.2: Open Top Vapors Degreasers ___ Section M.3: Conveyorized Degreasers ___ Section M.4: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG ___ Attach SDS for solvent
Source: <u>MELCO HVAC US, Inc.</u>		
KY EIS (AFS) #: <u>21- 161-00038</u>		
Permit #: <u>0</u>		
Agency Interest (AI) ID: <u>35349</u>		
Date: <u>3/13/2026</u>		
Section M.1: Cold Cleaning Degreasers Only		
Emission Unit #: _____		
Emission Unit Name: _____		
Control Device/Stack #: _____		
Manufacturer: _____		
Model/Serial Number: _____		
Proposed/Actual Date of Construction Commencement (MM/YYYY): _____		
Type: <input type="checkbox"/> Dip Tank <input type="checkbox"/> Spray Sink		
Maximum Operating Schedule:		
<input type="text"/> Hours/Day	<input type="text"/> Days/Week	<input type="text"/> Weeks/Year

Solvent Information			
Trade Name: _____			
Manufacturer: _____			
Maximum Amount Solvent Used: _____ gal/hr _____ gal/yr			
Maximum Volatility at 100°F: _____ mmHg			
Equipment Design			
Inside dimensions of tank: Width (ft): _____ Length (ft): _____ Depth (ft): _____ Freeboard Height (ft): _____			
If heated, indicate temperature: _____ °F			
If sprayed, indicate spray pressure: _____ psi			
If agitation is utilized, indicate type: <input type="checkbox"/> Pumped <input type="checkbox"/> Air <input type="checkbox"/> Mechanical <input type="checkbox"/> Ultrasonic			
If drainage board is utilized, indicate type: <input type="checkbox"/> Internal <input type="checkbox"/> External			
Is a tank cover utilized? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If external, is drainage return used? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Operating Procedure			
Is degreaser cover closed during degreaser operation? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Is degreaser cover closed when degreaser is not in use? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are parts dry before removal from drying rack? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Describe disposal of waste solvent and sludge:			
Control Devices:			
Identify if any are utilized: <input type="checkbox"/> Refrigerated <input type="checkbox"/> Water Spray <input type="checkbox"/> Carbon Adsorption <input type="checkbox"/> Freeboard Ratio greater than or equal to 0.7			
Other (specify):			

Section M.2: Open Top Vapor Degreasers

Emission Unit #: _____
 Emission Unit Name: _____
 Control Device/Stack #: _____
 Manufacturer: _____
 Model/Serial #: _____

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

Maximum Operating Schedule:

Hours/Day

Days/Week

Weeks/Year

Solvent Information

Trade Name: _____
 Manufacturer: _____
 Maximum Amount Solvent Used: _____ gal/hr _____ gal/yr
 Maximum Volatility at 100°F: _____ mmHg

Equipment Design

Inside dimensions of tank: Width (ft): _____ Length (ft): _____ Depth (ft): _____ Freeboard Height (ft): _____
 If sprayed, indicate spray pressure: _____ psi

Type of Safety Switches

Choose all that apply:
 Condenser flow switch and thermostat Spray safety switch Vapor level control thermostat

Type of Vapor Level Controls

Choose all that apply: Chilled Water or Refrigerant Condensing Coil None
 Temperature of cooling liquid: (°F) _____

Method of Heating

Choose all that apply: Gas Steam Electric
 Rating: _____ Btu/hr kW

Type of Cleaning Action (choose all that apply)

Choose all that apply: Sonic Spray Vapor Condensation Immersion in liquid Mechanical Mixing

Other (specify):

Tank Cover (choose all that apply)

Choose all that apply: Automatic Manual None
 Is the tank covered when not in use? Yes No

Describe disposal of waste solvent and sludge:

Control Device

Identify if any are utilized: Enclosed Design Carbon Adsorption Refrigerated Chiller Freeboard Ratio greater than or equal to 0.75

Other (specify):

Air Flow

Are the parts to be degreased moved in and out at a vertical speed of less than 11 ft/min? Yes No

What is the exhaust air flow? _____ cfm

Section M.3: Conveyorized Degreasers

Emission Unit #: EU#1, IA#3

Emission Unit Name: Aqueous Potassium Hydroxide Degreasers

Control Device/Stack #: None

Manufacturer: _____

Model/Serial No.: _____

Proposed/Actual Date of Commencement Construction (MM/YYYY): Jul-26

Type: Cold Solvent Vapor Degreasing

Maximum Operating Schedule:

16	5	50
Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: _____

Manufacturer: _____

Maximum Amount Solvent Used: _____ gal/hr 85176 KOH solution gal/yr

Maximum Volatility at 100°F: 46 mmHg

Equipment Design

Inside dimensions of tank: Width (ft): unknown Length (ft): _____ Depth (ft): _____ Freeboard Height (ft): _____

Is the tank covered when not in use? Yes No

If sprayed, indicate spray pressure: _____ psi

Indicate if any of the following are utilized: Drying Tunnel Tumbling or Rotating Baskets

Describe the work load design specifications: _____

Type of Safety Switches

Choose all that apply:

Condenser flow switch and thermostat Spray safety switch Vapor level control thermostat

Method of Heating

Choose all that apply: Gas Steam Electric

Rating: _____ Btu/hr _____ kW

Control Device

Identify if any are utilized: Refrigerated Chiller Carbon Adsorption

Other: (specify) _____

Operating Parameters

Actual conveyor speed: _____ ft/min

Flow rate of exhaust: _____ cfm

Maximum vertical conveyor speed at exit or entrance of the degreaser: _____ ft/min

Temperature of solvent bath: _____ °F _____ °C

Describe disposal of waste solvent, sludge from the still and solvent from the adsorber: _____

Division for Air Quality

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

DEP7007N

Source Emissions Profile

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

Additional Documentation

___ Complete DEP7007AI

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21-161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb-SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EJ#1	Degreasing		Aqueous degreasing operation using 6 wash baths and 5 rinse baths.	None	None	None	52208	None	0	Mass Balance	0.00%	0.00%	0	0	0	0
EJ#2	Rust Prevention		Anti-rust bath	None	None	None	70720 11700 11700	VOC Single HAP Total HAPs	4.9x10-6 1.2x10-6 1.2x10-6	Mass Balance	0.00%	0.00%	0.35 0.01 0.01	0.35 0.01 0.01	1.54 0.05 0.05	1.54 0.05 0.05
EJ#3	Electric Drying Oven		Parts dryer	None	None	None	None	None	None	None	0.00%	0.00%	0	0	0	0
EJ#4	Brazing Process		Torch for use on steel parts	None	None	None	2.76	PM102.5 Single HAP Total HAPs	0.0055	AP-42	0.00%	0.00%	0.015 0.001 0.001	0.015 0.001 0.001	0.066 0.006 0.006	0.066 0.006 0.006
EJ#5	Welding		MIG, TIG, MAG and plasma welding	None	None	None	7.157	PM102.5 Single HAP Total HAPs	0.0055	AP-42	0.00%	0.00%	0.038 0.0034 0.0034	0.038 0.003 0.003	0.166 0.015 0.015	0.166 0.015 0.015
EJ#6	Paint Dipping		Dip coating	None	None	None	26000	VOC Single HAP Total HAPs	3.46x10-6 2.63x10-7 2.63x10-7	Mass Balance	0.00%	0.00%	0.09 0.0068 0.0068	0.09 0.0068 0.0068	0.38 0.03 0.03	0.38 0.03 0.03
EJ#7	Wet Machining		Using cutting fluid for machining process	None	None	None	0.1	VOC	0.3	Mass Balance	0.00%	0.00%	0.03	0.03	0.13	0.13
EJ#8	C/S Mn Line		Degreasing, manganese phosphate treatment, chemical treatment, and rust inhibitor dipping	None	None	None	0.024 0.923 0.142 0.142	PM102.5 VOC Single HAP Total HAPs	0.83 1.09 0.86 0.89	Mass Balance	0.00%	0.00%	0.02 1.01 0.12 0.13	0.02 1.01 0.12 0.13	0.09 4.44 0.53 0.55	0.09 4.44 0.53 0.55
EJ#9	Two (2) Electric Drying Ovens		Parts Dryers	None	None	None	None	None	None	None	0.00%	0.00%	0	0	0	0

DEP7007N

Source Emissions Profile

___ Section N.1: Emission Summary

___ Section N.2: Stack Information

___ Section N.3: Fugitive Information

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

Additional Documentation

___ Complete DEP7007AI

Division for Air Quality

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

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21-161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb./SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions (lb./hr)		Annual Emissions (tons/yr)	
													Uncontrolled Potential	Controlled Potential	Uncontrolled Potential	Controlled Potential
EU#10	Machining		Bluffing process after the CIS Mn line process	None	None	None	385.7	PM PM10/2.5 Single HAP Total HAPs	1.19x10-3 1.59x10-4 1.59x10-4 1.59x10-4	AP-42	0.00%	0.00%	0.46 0.06 0.06 0.06	0.46 0.06 0.06 0.06	2.03 0.26 0.26 0.26	2.03 0.26 0.26 0.26
EU#11	Paint Prep and Spray Coating Booth		Mixing, pressurizing and spraying paint	Dry Filters	CE#1	S1	1.05	PM10/2.5 VOC Single HAP Total HAPs	0.163 8.350 4.94 6.21	Mass Balance	100.00%	98.00%	0.171 8.767 5.192 6.516	0.003 8.767 5.192 6.516	0.75 38.40 22.74 28.54	0.75 38.40 22.74 28.54
EU#12	Burnish Bushing		Dry brushing process to adjust the substrate roughness before and after painting.	None	None	None	77.14	PM PM10/2.5	1.3x10-3 2.59x10-4	AP-42	0.00%	0.00%	0.1 0.02	0.1 0.02	0.4 0.06	0.4 0.06
EU#13	Electric Drying Oven		Drying	None	None	None	None	None	None	None	0.00%	0.00%	0	0	0	0
EU#14	Dismantling Room		Cutting and sanding of defective compressors to inspect internal components	None	None	None	38.58	PM PM10/2.5	1.04x10-3 1.59x10-4	AP-42	0.00%	0.00%	0.04 0.006	0.04 0.006	0.2 0.02	0.2 0.02
EU#15	Natal Etching		Etching using ethyl alcohol and nitric acid	None	None	None	500	VOC	1.83x10-5	Mass Balance	0.00%	0.00%	0.009	0.009	0.04	0.04
EU#16	Core Press (Die Maintenance)		Regrinding of dies for maintenance purposes.	None	None	None	500	PM PM10/2.5 Single HAP Total HAPs	1.2x10-3 1.6x10-4 1.6x10-4 1.6x10-4	AP-42	0.00%	0.00%	0.6 0.08 0.08 0.08	0.6 0.08 0.08 0.08	2.63 0.34 0.34 0.34	2.63 0.34 0.34 0.34
EU#17	Four (4) Stamping Presses		Metal stamping using a lubricant	None	None	None	0.965	VOC Single HAP Total HAPs	6.59 0.066 0.066	Mass Balance	0.00%	0.00%	6.36 0.064 0.064	6.36 0.064 0.064	27.87 0.28 0.28	27.87 0.28 0.28
EU#18	Winding Injection Molding		Addition of insulation.	None	None	None	12.98	PM10/2.5 VOC CO	5.24x10-5 7.01x10-5 1.77x10-5	Mass Balance	0.00%	0.00%	0.0088 0.0091 0.0023	0.0088 0.0091 0.0023	0.003 0.004 0.001	0.003 0.004 0.001

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007V Applicable Requirements and Compliance Activities ___ Section V.1: Emission and Operating Limitation(s) ___ Section V.2: Monitoring Requirements ___ Section V.3: Recordkeeping Requirements ___ Section V.4: Reporting Requirements ___ Section V.5: Testing Requirements ___ Section V.6: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI					
Source Name: MELCO HVAC US, Inc. KY EIS (AFS) #: 21- 161-00038 Permit #: 0 Agency Interest (AI) ID: 35349 Date: 3/13/2026							
Section V.1: Emission and Operating Limitation(s)							
Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU#11	Paint prep and spray coating booth	401 KAR 59:225	VOC	Meet VOC content limit	N/A	N/A	VOC content limits verified from manufacturer SDS
EU#11	Paint prep and spray coating booth	401 KAR 59:010	Particulates	N/A	N/A	Dry filter condition	Daily logs
EU#11	Paint prep and spray coating booth	401 KAR 59:010	Particulates	N/A	N/A	Overspray observation	Monthly logs

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU#11	Paint prep and spray coating booth	VOC	401 KAR 59:225	VOC content	Review SDS VOC content
EU#11	Paint prep and spray coating booth	Particulate	401 KAR 59:010	Dry filter condition	Daily logs
EU#11	Paint prep and spray coating booth	Particulate	402 KAR 59:010	Overspray observation	Monthly logs

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU#11	Paint prep and spray coating booth	VOC	401 KAR 59:225	VOC content	Maintain SDS
EU#11	Paint prep and spray coating booth	Particulate	401 KAR 59:010	Dry filter condition	Daily dry filter inspection log
EU#11	Paint prep and spray coating booth	Particulate	402 KAR 59:010	Overspray observation	Monthly overspray observation logs

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
N/A					

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
N/A					

ATTACHMENT B

List of Emission Units

LIST OF EMISSION UNITS

1. The “Wash Line” degreasing operation in the Assembly area, consisting of washing machines and barrel washing, with one turnover per week, as follows:

Machine	Chemical	Size (gallons)	Conc (% vol)
Washing Bath 1	PK-4860	185	5
Washing Bath 2	PK-4860	185	5
Washing Bath 3	PK-4860	185	5
Washing Bath 4	PK-4860	185	5
Rinsing Bath 1	Water	40	100
Rinsing Bath 2	Water	27	100
Rinsing Bath 3	Water	27	100

Machine	Chemical	Size (gallons)	Conc (% vol)
Washing Bath 1	PK-4860	132	5
Washing Bath 2	PK-4860	132	5
Rinsing Bath 1	Water	66	100
Rinsing Bath 2	Water	53	100

2. The “Rust Prevention Line” in the Assembly area, with one turnover per week, as follows:

Machine	Chemical	Size (gallons)	Conc (% vol)
Rust Prevention	MG-RC74/ MB-802	93	2

3. One (1) electric drying oven in the Assembly area.
4. One (1) brazing process in the Assembly area, consisting of a natural gas torch with a brazing steel usage of 13,229 pounds per year, using no controls.
5. One (1) welding operation in the Assembly area, using 33,069 pounds per year of Lincoln Electric SuperArc L-56.
6. One (1) paint dipping operation in the Assembly area, using 13 tons of paint per year. It consists of a tunnel that encloses an overhead conveyor.
7. Wet machining with Castrol Syntilo 9930 cutting fluid. The cutting fluid is changed every six months.
8. The “C/S Mn Line”, consisting of:
 - (a) Degreasing, manganese phosphate treatment, chemical treatment, and rust inhibitor dipping. The chemical names and usage rates are shown below:

Machine	Chemical	Amount
Degreaser 1	Henkel Bonderite C-AK 305 Alkaline	1,507 kg/yr
Degreaser 2		
Mn Phosphate Treatment	Bonderite M-ACM	403 kg/yr
Chemical Treatment		
Tank 1	Bonderite M-MN Lubrite 2	1,238 kg/yr
Tank 2	Bonderite M-AD 10	243 kg/yr
Tank 3	Bonderite M-AD 40	113 kg/yr
Tank 4	Detergent 1000	960 kg/yr
Rust Inhibitor	Ethyl Acetate	3,735 kg/yr
	Moly CS	258 kg/yr

(b) Two electric drying ovens.

9. The “Machining - Buffing” process after the “C/S Mn Line”, processing one (1) million pieces per year, with a weight of 420 grams per piece. Equipped with a dust collector for particulate control.
10. One (1) “Burnish Brushing” process before painting in the Defric area, each weighing 420 grams.
11. One (1) paint preparation room and one (1) coating booth for coating metals pieces in the Defric area, using high volume low pressure (HVLP) paint applicators. The booth is equipped with fabric filters for particulate control.
12. One (1) “Burnish Brushing” process after painting in the Defric area, each weighing 420 grams.
13. One (1) electric drying oven for the Defric area.
14. The “Dismantling Room” for periodic cutting and sanding of defective compressors to inspect internal components. Sharp edges are sanded for safe handling. Processing one (1) thousand units per year, with a weight of 420 grams per unit. Emissions are uncontrolled.
15. One (1) Naital etching process involving a Naital solution (5% Nitric Acid, 95% Ethyl Alcohol) applied to a test sample surface using a cotton swab at room temperature.
16. The “Core Press (Die Maintenance)” area, capable of processing a maximum of two (2) 10,000-pound dies each week. Equipped with a dust collector for particulate emissions control, consisting of:

- (a) Two (2) large surface grinders for regrinding dies.
- (b) One (1) small surface grinder for regrinding dies.

17. The "Press" line consisting of:

- (a) Four (4) stamping presses, using a lubricant.
- (b) Four (4) Hoop TIG welding machine with no controls.

18. The "Winding" line consisting of:

- (a) One (1) core closing TIG welder.
- (b) Insulator plastic injection molding, using a resin and a water-soluble release agent.

19. The "Sheet Metal" line consisting of:

- (a) Plasma welding,
- (b) MAG welding, and;
- (c) Two washing machines (#22 and #24 wash tanks)

20. Fourteen (14) quality assurance test rooms for testing HVAC compressors.

21. One (1) "Final Wash" washing machine (#26 wash tank) consisting of the same degreasing and rust preventative materials used in the Assembly area.

22. Paved and unpaved roadways.

23. Two (2) 60kW natural gas backup generators.

ATTACHMENT C

Supporting Calculations

Emission Summary

Emission Units	Uncontrolled PTE (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	Total HAP	Highest Single HAP	
Assembly Wash Line	-	-	-	-	-	0.00	-	-	-	-
Rust Prevention Lines	-	-	-	-	-	1.54	-	0.05	0.05	Glycol Ether
Defric Spray Booth	0.75	0.75	0.75	-	-	38.40	-	28.54	22.74	1,4 dioxane
Dip Coating	-	-	-	-	-	0.38	-	0.03	0.03	MIBK
Wet Machining	-	-	-	-	-	0.13	-	-	-	-
C/S Mn Line	0.09	0.09	0.09	-	-	4.44	-	0.55	0.53	Mn
Emergency Generators	0.00	0.00	0.00	0.00	1.23	0.04	0.10	0.02	0.02	Formaldehyde
Welding	0.23	0.23	0.23	-	-	-	-	0.02	0.02	Mn
Machining	5.26	0.68	0.68	-	-	-	-	0.60	0.34	CO
Winding Insulator Molding	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	n-hexane
Press Line Stamping	-	-	-	-	-	27.87	-	0.28	0.28	Xylene
Naital Etching	-	-	-	-	-	0.04	-	-	-	-
Final Wash	-	-	-	-	-	0.00	-	-	-	-
Total:	6.34	1.76	1.76	0.00	1.23	72.83	0.10	30.09	22.74	1,4 dioxane

Emission Units	Limited PTE (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	Total HAP	Highest Single HAP	
Assembly Wash Line	-	-	-	-	-	0.00	-	-	-	-
Rust Prevention Lines	-	-	-	-	-	1.54	-	0.05	0.05	Glycol Ether
Defric Spray Booth	0.75	0.75	0.75	-	-	38.40	-	22.00	9.99	1,4 dioxane
Dip Coating	-	-	-	-	-	0.38	-	0.03	0.03	MIBK
Wet Machining	-	-	-	-	-	0.13	-	-	-	-
C/S Mn Line	0.09	0.09	0.09	-	-	4.44	-	0.55	0.53	Mn
Emergency Generators	0.00	0.00	0.00	0.00	1.23	0.04	0.10	0.02	0.02	Formaldehyde
Welding	0.23	0.23	0.23	-	-	-	-	0.02	0.02	Mn
Machining	5.26	0.68	0.68	-	-	-	-	0.60	0.34	CO
Winding Insulator Molding	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	n-hexane
Press Line Stamping	-	-	-	-	-	27.87	-	0.28	0.28	Xylene
Naital Etching	-	-	-	-	-	0.04	-	-	-	-
Final Wash	-	-	-	-	-	0.00	-	-	-	-
Total:	6.34	1.76	1.76	0.00	1.23	72.83	0.10	23.54	9.99	1,4 dioxane

**Emissions Calculations
 Assembly Wash Line
 VOC and HAP Emission Calculations
 Degreaser PK-4860**

Emission Unit ID*		Amount (gallons/yr)	Degreaser Used	Conc (% vol)	VOC Content (lb/gal)	VOC Emissions (tons/yr)
Washing Machines						
	Bath 1	9620	PK-4860	5%	0.00	0.00
	Bath 2	9620	PK-4860	5%	0.00	0.00
	Bath 3	9620	PK-4860	5%	0.00	0.00
	Bath 4	9620	PK-4860	5%	0.00	0.00
Barrel Washing						
	Bath 1	6864	PK-4860	5%	0.00	0.00
	Bath 2	6864	PK-4860	5%	0.00	0.00
Total Emissions						0.00

Potential to Emit

PK-4860 contains 5% by volume potassium hydroxide which contains 0% VOC by weight and no HAPs
 Weight VOC (lb VOC/gal PK-4860) = 1.25 specific gr * 8.34 lb/gal * fraction VOC (0.0) = 0.00 lb VOC/gal

Total Potential VOC (tons/yr) = VOC Content (0.00 lb/gal) * %Vol * Amt gal/yr * 1 ton/2000 lb

Emissions Calculations
Assembly & Sheet Metal Lines - Rust Prevention
VOC and HAP Emission Calculations
Rust Prevention MG-RC74/ MB-802

Assembly - Washing Machines Rust Prevention

Emission Unit ID*	Material Used	Amount (gallons/yr)	Density (lb/gal)	Conc (% vol)	VOC Content (%)	VOC Emissions (tons/yr)
Assembly - Washing Machine Rust Prevention Tank	MG-RC74	4836	8.59	2%	46%	0.19
	MB-802	4836	7.92	0.1%	100%	0.02
						0.21

Assembly - Barrel Washing Rust Prevention Tank	MG-RC74	6864	8.59	2%	46%	0.27
	MB-802	6864	7.92	0.1%	100%	0.03
						0.30

Sheet Metal Line - Rust Prevention

Emission Unit ID*	Material Used	Amount (gallons/yr)	Density (lb/gal)	Conc (% vol)	VOC Content (%)	VOC Emissions (tons/yr)
Sheet Metal - Rust Prevention Tank #22	MG-RC74	12376	8.59	2%	46%	0.49
	MB-802	12376	7.92	0.1%	100%	0.05
						0.54

Sheet Metal - Rust Prevention Tank #24	MG-RC74	11284	8.59	2%	46%	0.45
	MB-802	11284	7.92	0.1%	100%	0.04
						0.49

Potential to Emit

Total Potential VOC (tons/yr) = Density (lb/gal) * VOC Content (%) * %Vol * Amt gal/yr * 1 ton/2000 lb

Emissions Calculations
Wet Machining
VOC and HAP Emission Calculations

Emission Unit ID*	Density (lbs/gal)	Amount (gallons/yr)	Degreaser Used	Conc (% vol)	VOC Emissions (tons/yr)
Wet Machining					
Machining	8.34	844	Castrol Syntilo 9930	3.70%	0.13
Total Emissions					0.13

Potential to Emit

Total Potential VOC (tons/yr) = VOC Content (%) * Density (lb/gal) * Gal/yr * 1 ton/2000 lb

**Emissions Calculations
C/S Mn Line Degreasing, Chemical Treatment, Mos 2 Dipping
VOC and HAP Emission Calculations**

Emission Unit ID*	Amount (kg/yr)	Material Used	Conc (% VOC)	Conc (% Mn Comp)	Conc (% Ni Comp)	VOC Emissions (tons/yr)	Mn Emissions (tons/yr)	Ni Emissions (tons/yr)
<i>Degreasing</i>								
	1507	Bonderite C-AK 305	0.139%	0%	0%	0.002308392	0	0
<i>Chemical Treatment</i>								
Bath 1	1238	Bonderite M-Mn Lubrite 2	0%	35%	1%	0.00	0.48	0.01
Bath 2	243	M-AD10	5%			0.01	0.00	0.00
Bath 3	113	M-AD40	0%			0.00	0.00	0.00
Bath 4	960	Detergent 1000	5%			0.05	0.00	0.00
<i>Mos 2 Dipping</i>								
Bath 1	258	Moly C-S	91%			0.26	0.00	0.00
Bath 2	3735	Ethyl Acetate	100%			4.12	0.00	0.00
Total Emissions						4.44	0.48	0.014

Potential to Emit

Total Potential VOC/HAP (tons/yr) = VOC Content (%) * Amt kg/yr * 2.204 lbs/kg * 1 ton/2000 lb

**Emissions Calculations
C/S Mn Line Powder Handling
PM and HAP Emission Calculations**

Emission Unit ID*	Amount (kg/yr)	Material Used	PM Emission Factor (%)	Conc (% Mn Compound)	PM Emissions (tons/yr)	Mn Emissions (tons/yr)
Powder Handling	403	Bonderite M-ACM	1%	60%	0.004	0.00
Total Emissions					4.44E-03	2.66E-03

Potential to Emit

Total Potential PM₁₀/PM_{2.5} (tons/yr) = PM EF (%) * Amt kg/yr * 2.204 lbs/kg * 1 ton/2000 lb

HAP Emissions (tons/yr) = PTE PM (tons/yr) * % HAP (SDS)

Emission factor from AP-42 Table 6.4-1 for particulates.

Emissions Calculations
C/S Mn Line Phosphating

Chemical	Bath Size (ft3)	Tank Surface Area (ft2)	Concentration (%)	VOC Content (%)	Min Content (%)	Required Aeration (cfm/ft2)	Emission Factor (gr/dscf)	Uncontrolled PTE (tons/yr)	Uncontrolled VOC PTE (tons/yr)	Uncontrolled Mn PTE (tons/yr)	Control Device
Bonderite M-ACM	26.50	16	50%	0	60%	10.00	2.85E-02	0.086	--	0.051	None
								0.086	0.00	0.051	

Methodology:

- Nonelectrolytic plating PTE calculated using equation 4 from AP-42, Section 12.20: $E = 1.9 * \sigma / R_b [((1-2a+9a^2)^{0.5} + (a-1)) / ((1+3a) - (1-2a+9a^2)^{0.5})]^{0.5}$
 Where: E = emission factor, gr/dscf
 Non Alkaline Solutions: $a = 0.072 * R_b^2 / \sigma = (0.072 * (0.05)^2) / 0.0048 = 0.0375$
 Alkaline Solutions: $a = 0.072 * R_b^2 / \sigma = (0.072 * (0.05)^2) / 0.00274 = 0.06569$
 R_b = average bubble radius, in. = 0.05 in Nonelectrolytic
 σ = surface tension of bath, lbf/ft = 0.00274 lbf/ft alkaline solutions; 0.0048 lbf/ft other solutions
 2. Uncontrolled PTE (ton/yr) = Surface area of tank (ft²) * Required aeration (cfm/ft²) * 60 min/hr * Emission factor (gr/dscf) * 1 lb/7000 grains * Chemical % in bath * 8760 hr/yr * 1 ton/2000 lb

**Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Assembly Line Paint Dipping

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Amt of Mat. (lbs/unit)	Maximum (unit/year)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	Ib VOC/gal solids	Transfer Efficiency
PPG POWERCRON 10X (P100-491)	8.82	64.40%	61.5%	2.9%	65.1%	31.90%	0.02600	1000000.00	0.73	0.26	0.09	2.07	0.38	0.00	0.80	100%
											0.09	2.07	0.38	0.00		

Defric Painting

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Amt of Mat. (lbs/unit)	Maximum Rated Usage (gal/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	Ib VOC/gal solids	Transfer Efficiency
DEFRIC COAT HMB-2M	9.17	92.00%	0.0%	92.0%	0.0%	8.00%	0.01122	--	8.44	8.44	--	--	--	--	--	65%
Additive ADX-35	8.92	70.00%	0.0%	70.0%	0.0%	30.00%	0.00072	--	6.25	6.25	--	--	--	--	--	65%
Solvent HMB-2	8.59	100.00%	0.0%	100.0%	0.0%	0.00%	0.00404	--	8.59	8.59	--	--	--	--	--	100%
Mixed As Applied	9.02	93.04%	0.00%	93.04%	0.00%	6.96%	0.01	1.05	8.38	8.38	8.77	210.39	38.40	0.75	120.49	73.86%

Potential Emissions

Add worst case coating to all solvents 0.01598

8.77 210.39 38.40 0.75

METHODOLOGY

Assembly Line Paint Dipping

Potential VOC Tons per Year = Wt % VOC * Amt of Material (lbs/unit) * Maximum (units/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (lbs/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (1 ton/2000 lbs)

Total = Worst Coating * Sum of all solvents used

Defric Painting

Maximum Rated Usage of Spray Gun = 66 cc/min or 1.04612 gal/hr as provided from the supplier

Potential VOC Tons per Year = VOC Content (lbs/gal) * Maximum Rated Usage of Spray Gun (gal/hr) * 8760 (hrs/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = Maximum Rated Usage of Spray Gun (gal/hr) * Density (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * 8760 (hrs/yr) * (1 ton/2000 lbs)

Total = Worst Coating * Sum of all solvents used

**Emission Calculations
HAP Emission Calculations**

Assembly Line Paint Dipping

Material	Density (Lb/Gal)	Amount of Material (lbs/unit)	Maximum Rated Usage (unit/year)	Weight % Xylene	Weight % 1,4 Dioxane	Weight % Ethylbenzene	Weight % MIBK	Xylene Emissions (ton/yr)	1,4 Dioxane Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	MIBK Emissions (ton/yr)
PPG POWERCRON 10X (P100-491)	8.82	0.0260	1000000.00	0.00%	0.00%	0.00%	0.20%	0.00	0.00	0.00	0.03
Total Potential Emissions											
								0.00	0.00	0.00	0.03

Defric Painting

Material	Density (Lb/Gal)	Gallons of Material (lbs/unit)	Maximum Rated Usage (gal/hour)	Weight % Xylene	Weight % 1,4 Dioxane	Weight % Ethylbenzene	Weight % MIBK	Xylene Emissions (ton/yr)	1,4 Dioxane Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	MIBK Emissions (ton/yr)
DEFRIC COAT HMB-2M	9.17	0.011217	-	10.00%	50.00%	10.00%	0.00%				
Additive ADX-35	8.92	0.000716	-	0.00%	50.00%	0.00%	0.00%				
Solvent HMB-2	8.59	0.004043	-	0.00%	70.00%	0.00%	0.00%				
Mixed As Applied	9.02		1.05	7.02%	55.06%	7.02%	0.00%	2.90	22.74	2.90	0.00
Total Potential Emissions											
								2.90	22.74	2.90	0.00

Total Potential Emissions

METHODOLOGY

Assembly Line Paint Dipping

HAPS emission rate (tons/yr) = Amt of Material (lbs/unit) * Maximum (unit/yr) * Weight % HAP * 1 ton/2000 lbs

Defric Painting

HAPS emission rate (tons/yr) = Maximum Rated Usage (gal/hr) * Density (lb/Gal) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

**Emission Calculations
Naital Etching**

Naital Etching		Density (Lb/mL)	Gallons of Material (mL/year)	Weight % Material	Material	VOC Emissions (ton/yr)	HNO3 Emissions (ton/yr)
Material							
Naital	0.179	500.00	95.00%	Ethyl Alcohol	0.04	0.00	0.00
		25.00	5.00%	Nitric Acid	0.00	0.00	0.00

Total Potential Emissions

0.04 0.00

METHODOLOGY

Emission rate (tons/yr) = Amt of Material (mL/yr) * Density (lb/ml) * Weight % VOC * 1 ton/2000 lbs

**Emission Calculations
Press Line Stamping**

Press Line Stamping	Material	Density (Lb/Gal)	Gallons of Material (gals/year)	Weight % VOC	Weight % Xylene	VOC Emissions (ton/yr)	Xylene Emissions (ton/yr)
	Sunpress S-162A Lubricant	6.59255	8454.43	100%	1.00%	27.87	0.28
Total Potential Emissions						27.87	0.28

METHODOLOGY

Emission rate (tons/yr) = Amt of Material (gals/yr) * Density (lb/gal) * Weight % VOC * 1 ton/2000 lbs

**Emissions Calculations
Winding - Insulator Injection Molding**

Unit ID	Quantity	Maximum Capacity (lbs/hr)	Emission Factors* (lbs/ton)				Potential Emissions				
			PM/PM10/PM2.5	VOC	CO	HAPs	PM/PM10/PM2.5 (tons/yr)	VOC (tons/yr)	CO (tons/yr)	HAPs (tons/yr)	
PBT Resin	1	11.80	0.1302	0.0614	0.04	0.00	0.003	0.002	0.001	0.00	N/A
Mold Release	1	1.18		1.0		0.05	0.000	0.003	0.000	1.29E-04	n-hexane
Totals							0.003	0.004	0.001	0.000	

Notes:
 VOC and PM emission factors are from Fact Sheet #9847 (revised 11/05) from the Michigan EGLE.
 There are no emission factors for these types of processes in AP-42 or U.S. EPA WebFIRE.
 CO emission factor is based on Patel, S.H and Xanthos, M. (1995) "Volatile Emissions During Thermoplastics Processing - A Review", Advances in Polymer Technology , Vol. 14, pp. 67-77

Assume PM = PM 10 = PM 2.5
 Methodology:
 PTE (tons/yr) = Max throughput rate (lbs/hr) * Emission Factor (lbs/ton) * 1 ton/2000 lbs * 8760 hrs/yr * 1 ton/2000 lbs

Emissions Calculations
Facility-Wide Welding

Process	Number of Stations	Maximum electrode consumption per station (lbs/hr)	Maximum electrode consumption per station (lbs/day)	Emission Factors* (lb pollutant/lb electrode)			Potential to Emit (lbs/hr)			HAPs (lbs/hr)	
				PM/PM10/PM2.5	Mn	Ni	Cr	PM/PM10/PM2.5	Mn		Ni
Welding											
Assembly Line - Brazing	1	2.76	44.10	0.0055	0.0005			0.015	1.4E-03	0	1.4E-03
Assembly Line - L-56 MIG Welding	1	6.89	110.23	0.0055	0.0005			0.038	3.4E-03	0	3.4E-03
Winding - TIG Welding	1	0.01	0.17	0	0			0.000	0.0E+00	0	0.0E+00
Hoop TIG Welding	4	0.204	4.896	0	0			0.000	0.0E+00	0	0.0E+00
Sheet Metal Line - Plasma Welding	1	0.01	0.17	0	0			0.000	0.0E+00	0	0.0E+00
Sheet Metal Line - MAG Welding	1	0.043	0.69	0.0055	0.0005			0.000	2.2E-05	0	2.2E-05
Totals											
Potential to Emit (lbs/hr)								0.05	0.00	0.00	0.00
Potential to Emit (lbs/day)								1.28	0.12	0.00	0.00
Potential to Emit (tons/year)								0.23	0.02	0.00	0.00

Methodology:

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

Welding: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum electrode consumption per station, lbs/hr) x (Emission Factor, lb pollutant/lb of electrode used)

Potential to Emit (lbs/day) = Potential to Emit (lbs/hr) x (24 hours/day)

Potential to Emit (tons/year) = Potential to Emit (lbs/hr) x (8,760 hours/year) x (1 ton/2,000 lbs)

**Emissions Calculations
Buffing, Sanding, Cutting and Grinding**

Unit ID	Quantity	Maximum Capacity (lbs/hr)	Emission Factors* (lbs/ton)		Particulates		HAPs				
			PM	PM10	(lbs/hr)	(tons/yr)	(lbs/hr)	(tons/yr)			
Production Activities											
Burnish Brush Before Painting	1	38.57	2.4	0.3	0.05	0.20	0.01	0.03	0.00	0.00	
Burnish Brush After Painting	1	38.57	2.4	0.3	0.05	0.20	0.01	0.03	0.00	0.00	
Dismantling Room Cutting	1	19.29	2.4	0.3	0.02	0.10	0.00	0.01	0.00	0.00	
Dismantling Room Sanding	1	19.29	2.4	0.3	0.02	0.10	0.00	0.01	0.00	0.00	
Buffing After C/S	1	385.70	2.4	0.3	0.46	2.03	0.06	0.26	0.06	0.26	
Core Press Die Maintenance	1	500.00	2.4	0.3	0.60	2.63	0.08	0.34	0.08	0.34	
Totals									5.26	0.68	0.60

Notes

*The emission factors for PM and PM10 are from AP 42-11.24-2 Metallic Minerals Processing -Dry Grinding (Table 11.24-2, SCC#30302410). In the absence of valid AP 42 emission factors, PM 2.5 emissions are assumed equal to PM10 emissions.

** Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a regulated air pollutant. US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Methodology

Emission Rate for PM and PM₁₀ before controls (lbs/hr) = Maximum capacity (lbs/hr) * (1 ton/2000 lbs) * Emission Factor (lbs/ton)

Emission Rate for PM and PM₁₀ after controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) *(1 ton/2000 lbs)

**Emission Calculations
Fugitive Dust Emissions - Paved Roads**

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	9.0	1.0	9.0	48.0	432.0	700	0.133	1.2	435.5
Vehicle (leaving plant) (one-way trip)	3.0	1.0	3.0	48.0	144.0	700	0.133	0.4	145.2
Totals	12.0	12.0	12.0	576.0	576.0	1.6	1.6	580.7	

Average Vehicle Weight Per Trip = $\frac{48.0 \text{ tons/trip}}{0.13 \text{ miles/trip}}$

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

PM	PM10	PM2.5
0.011	0.0022	0.00054
48.0	48.0	48.0
9.7	9.7	9.7

where $k = \text{lb/VMT} = \text{particle size multiplier (AP-42 Table 13.2.1-1)}$
 $W = \text{average vehicle weight}$
 $sL = \text{g/m}^2 = \text{silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3}$

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$ (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$

where $p = \frac{125 \text{ days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)}}{365 \text{ days per year}}$

PM	PM10	PM2.5
4.510	0.902	0.2214
4.124	0.825	0.2025

Unmitigated Emission Factor, $E_f =$
 Mitigated Emission Factor, $E_{ext} =$

Process	Mitigated PTE of PM (Before Control) (tons/yr)	Mitigated PTE of PM10 (Before Control) (tons/yr)	Mitigated PTE of PM2.5 (Before Control) (tons/yr)
Vehicle (entering plant) (one-way trip)	0.90	0.18	0.04
Vehicle (leaving plant) (one-way trip)	0.30	0.06	0.01
Totals	1.20	0.24	0.06

Methodology

- Total Weight driven per day (ton/day) = [Maximum Weight of Loaded Vehicle (tons/trip)] * [Maximum trips per day (trip/day)]
- Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
- Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
- Average Vehicle Weight Per Trip (ton/trip) = $\frac{\text{SUM}[\text{Total Weight driven per day (ton/day)}]}{\text{SUM}[\text{Maximum trips per year (trip/day)]}}$
- Average Miles Per Trip (miles/trip) = $\frac{\text{SUM}[\text{Maximum one-way miles (miles/day)}]}{\text{SUM}[\text{Maximum trips per year (trip/day)]}}$
- Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
- Mitigated PTE (Before Control) (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
- Mitigated PTE (After Control) (tons/yr) = [Mitigated PTE (Before Control) (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

- PM = Particulate Matter
- PM10 = Particulate Matter (<10 um)
- PM2.5 = Particulate Matter (<2.5 um)
- PTE = Potential to Emit

**Emissions Calculations
Final Wash Line Machining Units
VOC and HAP Emission Calculations
Degreaser PK-4860**

Emission Unit ID*		Amount (gallons/yr)	Degreaser Used	Conc (% vol)	VOC Content (lb/gal)	VOC Emissions (tons/yr)
Final Washing						
	Bath 1	Degreasing Parts	32,968.00	PK-4860	5%	0.00
Total Emissions						0.00

Potential to Emit

PK-4860 contains 5% by volume potassium hydroxide which contains 0% VOC by weight and no HAPs
 Weight VOC (lb VOC/gal PK-4860) = 1.25 specific gr * 8.34 lb/gal * fraction VOC (0.0) = 0.00 lb VOC/gal

Total Potential VOC (tons/yr) = VOC Content (0.00 lb/gal) * %Vol * Amt gal/yr * 1 ton/2000 lb

**Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Lean-Burn (4SLB) Engines**

Two (2) 60 kW Natural Gas-Fired Emergency Generators

Maximum Output Horsepower Rating (hp)	161
Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr)	7500
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	603
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.59

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	7.71E-05	9.99E-03	9.99E-03	5.88E-04	4.08E+00	1.18E-01	3.17E-01
Potential Emissions (tons/yr)	0.0000	0.00	0.00	0.000	1.23	0.04	0.10

*PM emission factor is for filterable PM-10, PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	8.36E-03	0.003
Acrolein	5.14E-03	0.002
Benzene	4.40E-04	0.000
Biphenyl	2.12E-04	0.000
1,3-Butadiene	2.67E-04	0.000
Formaldehyde	5.28E-02	0.016
Methanol	2.50E-03	0.001
Hexane	1.10E-03	0.000
Toluene	4.08E-04	0.000
2,2,4-Trimethylpentane	2.50E-04	0.000
Xylene	1.84E-04	0.000
Total		0.02

HAP pollutants consist of the eleven highest HAPs included in AP-42 Table 3.2-2.

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
 Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]
 Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	2.2
Emission Factor in lb/MMcf**			0.00
Potential Emission in tons/yr	33.17	0.38	0.00
Summed Potential Emissions in tons/yr	33.54		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	42.78		
CO2e Total in tons/yr based on 10/30/2009 federal GWPs	41		

Methodology

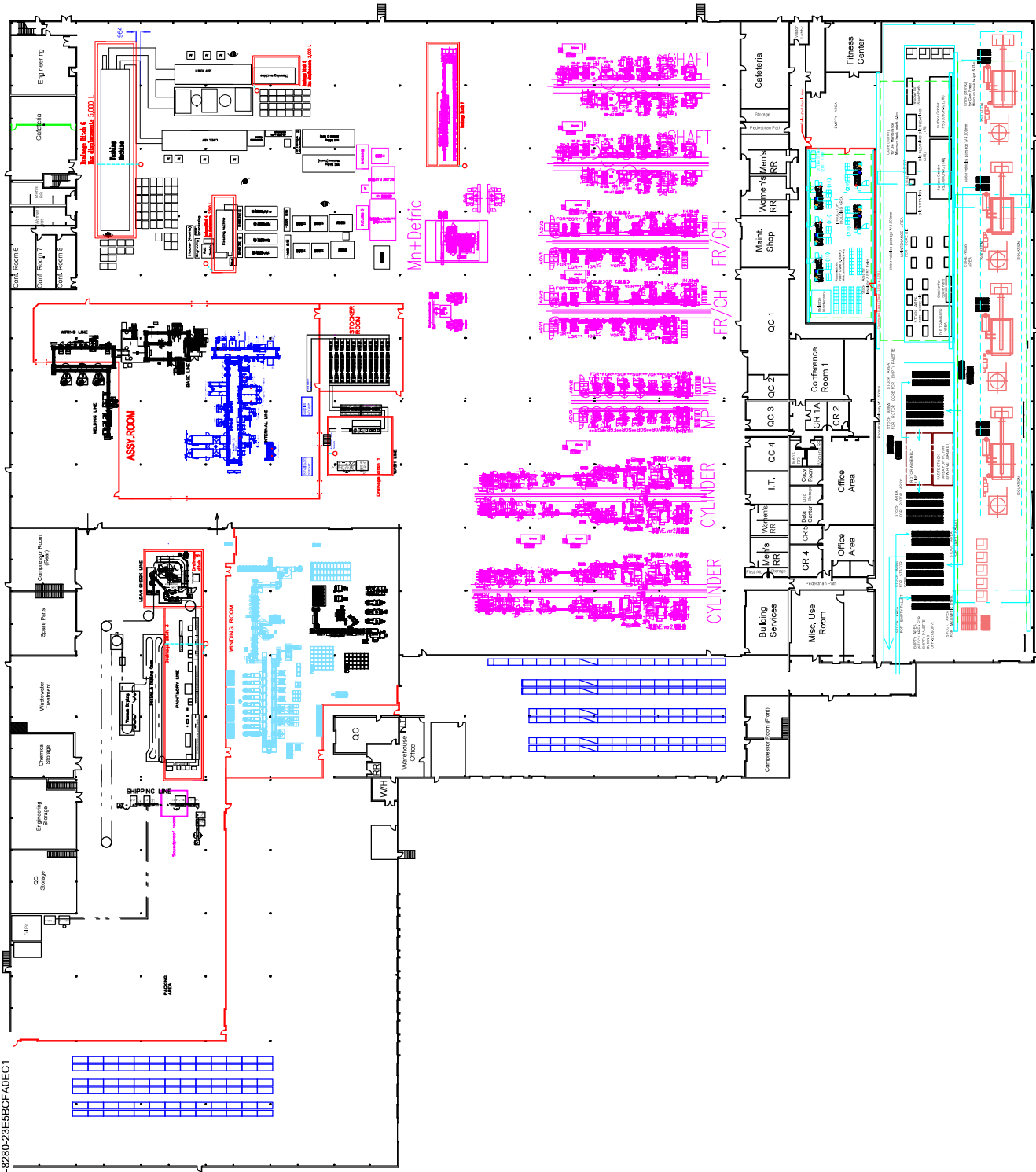
*The CO2 and CH4 emission factors are from Emission Factors from AP-42 (Supplement F, July 2000), Table 3.2-2
 **The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
 For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
 CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).
 CO2e (tons/yr) based on 10/30/2009 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

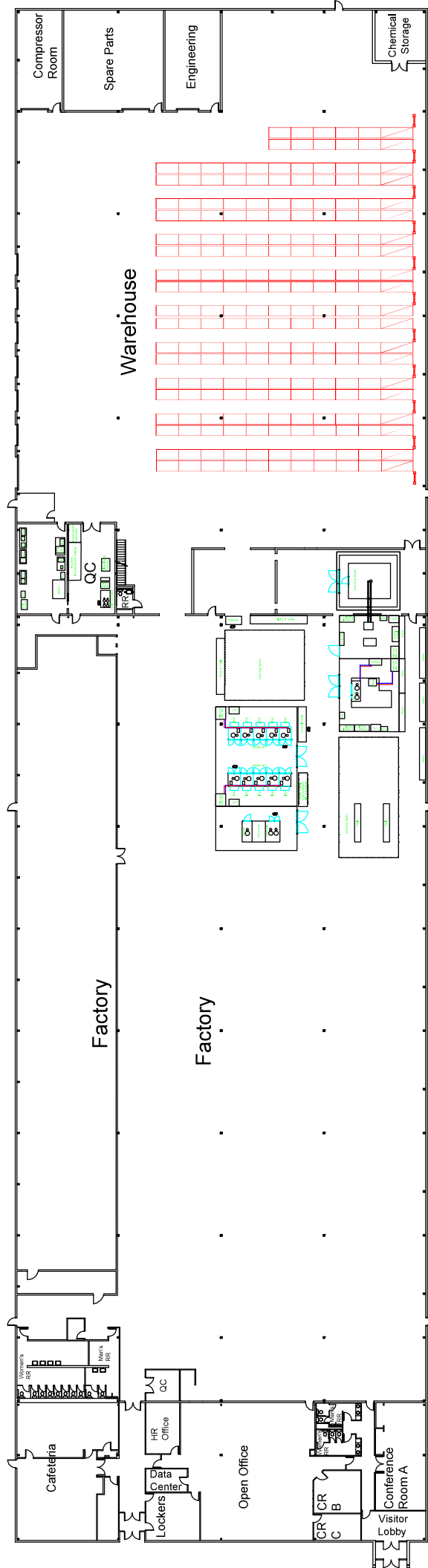
Abbreviations

PM = Particulate Matter	NOx = Nitrous Oxides	CO2 = Carbon Dioxide
PM10 = Particulate Matter (<10 um)	VOC = Volatile Organic Compounds	CH4 = Methane
SO2 = Sulfur Dioxide	CO = Carbon Monoxide	N2O = Nitrous Oxide
		CO2e = CO2 equivalent emissions

ATTACHMENT D

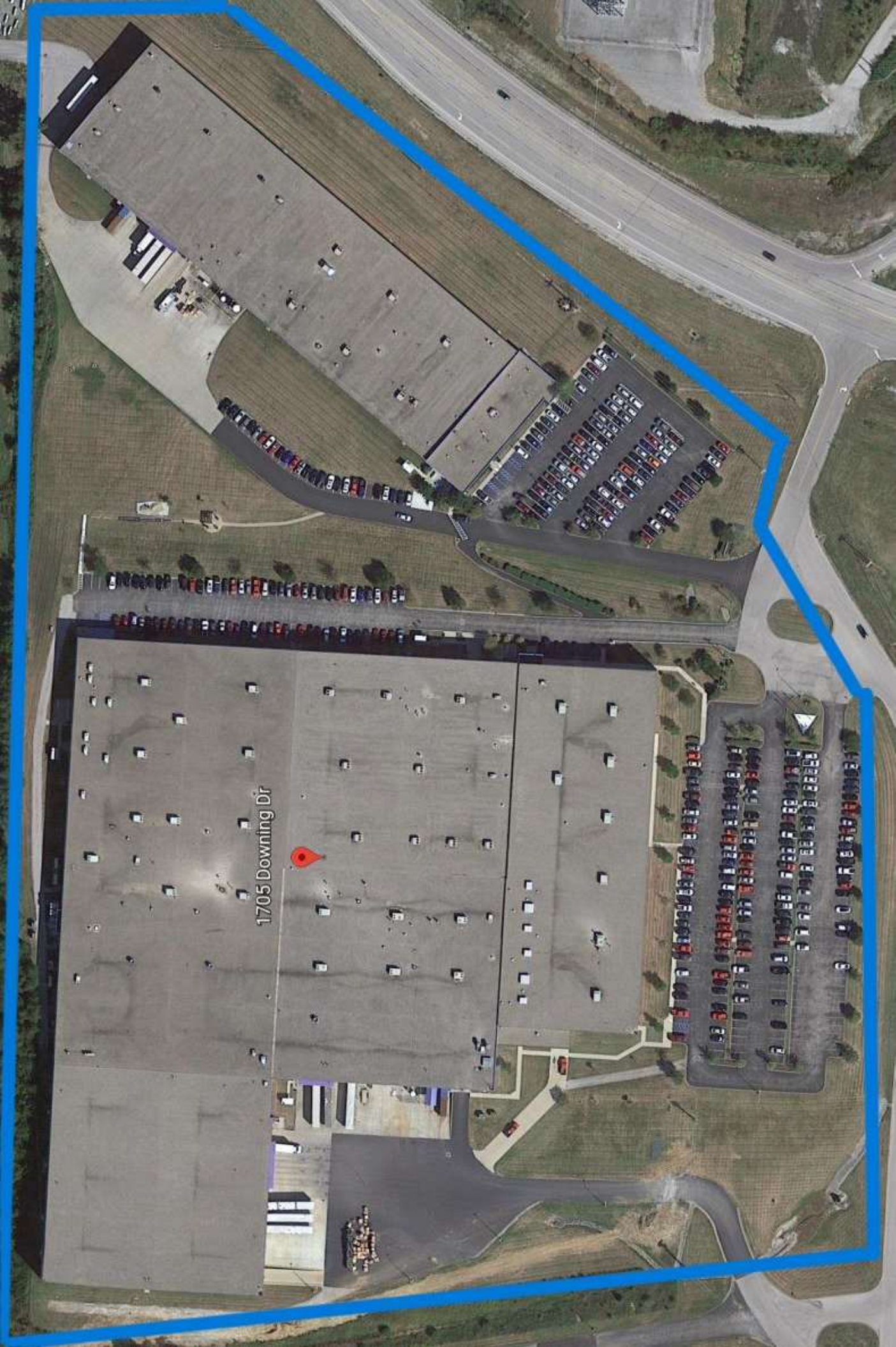
Process Flow Diagram





ATTACHMENT E

Site Map



ATTACHMENT F

Safety Data Sheets

Safety Data Sheet



Revision Number: 007.0

Issue date: 10/22/2025

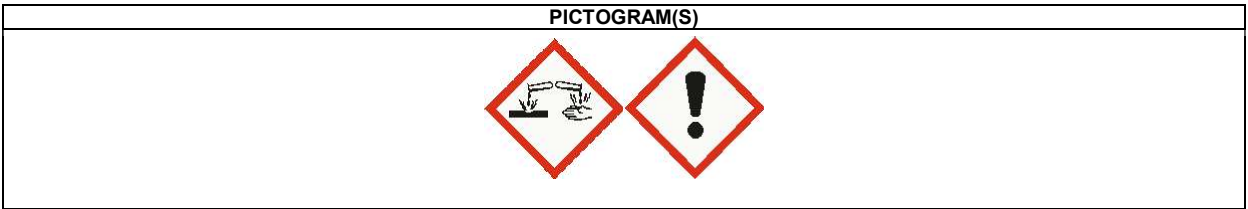
1. IDENTIFICATION

Product name:	BONDERITE C-AK 305 ALKALINE CLEANER known as PARCO CLEANER 305	IDH number:	593947
Product type/ Recommended use:	Cleaner	Item number:	593947
Restriction of Use:	None identified	Region:	United States
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067	Contact information:	Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H290 - MAY BE CORROSIVE TO METALS. H302 - HARMFUL IF SWALLOWED. H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
ACUTE TOXICITY ORAL	4
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1



Precautionary Statements

Prevention:	P234 - Keep only in original packaging. P264 - Wash affected area thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves, clothing, eye and face protection.
Response:	P301+P312+P330 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage.
Storage:	P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Tetrapotassium pyrophosphate	7320-34-5	10 - 30
Potassium hydroxide	1310-58-3	10 - 30

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Skin contact:	Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Seek medical advice. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Thermal decomposition can lead to release of irritating gases and vapors.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. For industrial use only. Use good hygiene practices when handling this material, including changing and laundering work clothes after use. Discard contaminated shoes and leather goods. NEVER ADD WATER TO PRODUCT. For dilutions, add product slowly to water while stirring. Use caution; heat may be generated.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Potassium hydroxide	2 mg/m3 Ceiling	None	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Yellow
Odor: Mild
Odor threshold: Not available.
pH: > 13
Vapor pressure: Not available.
Boiling point/range: > 100 °C (> 212°F)calculated
Melting point/ range: Not determined
Density/Relative density: 1.41 - 1.44
Relative vapor density: Not determined
Flash point: Not applicable
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not determined
Flammability: Not applicable
Evaporation rate: Not available.
Solubility: Complete Water
Partition coefficient n-octanol/water (logarithmic value): Not determined
VOC content: 2 g/l EPA Method 24
Dynamic viscosity: Not available.
Kinematic viscosity: Not available.
Particle characteristics: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapors.
Incompatible materials:	Adding water to this product may cause localized overheating and splattering.
Reactivity:	This product reacts with acids.
Conditions to avoid:	Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Mists, vapors or liquid may cause severe irritation or burns. May cause respiratory tract irritation.
Skin contact:	Mists, vapors or liquid may cause severe irritation or burns. Causes skin burns.
Eye contact:	This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness. Causes serious eye damage.
Ingestion:	Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Hazardous Component(s)	LD50s and LC50s
Tetrapotassium pyrophosphate	Inhalation LC50 (Rat, 4 h) = > 0.58 mg/l Inhalation LC50 (Rat, 4 h) = > 1.1 mg/l
Potassium hydroxide	Oral LD50 (Rat) = 273 mg/kg Oral LD50 (Rat) = 1.23 g/kg

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Tetrapotassium pyrophosphate			
Potassium hydroxide	Corrosive Irritant		

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Tetrapotassium pyrophosphate	No	No	No
Potassium hydroxide	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal. This chemical contains phosphates.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (Potassium hydroxide, Tetrapotassium pyrophosphate)
Hazard class or division: 8
Identification number: UN 3266
Packing group: II
DOT Hazardous Substance(s): Potassium hydroxide

International Air Transportation (ICAO/IATA)

Proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (Potassium hydroxide, Tetrapotassium pyrophosphate)
Hazard class or division: 8
Identification number: UN 3266
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Potassium hydroxide, Tetrapotassium pyrophosphate)
Hazard class or division: 8
Identification number: UN 3266
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis
CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2
CERCLA/SARA Section 313: None above reporting de minimis.
CERCLA Reportable quantity: Potassium hydroxide (CAS# 1310-58-3) 1,000 lbs. (454 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 10/22/2025

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

Safety Data Sheet



Revision Number: 003.5

Issue date: 11/21/2024

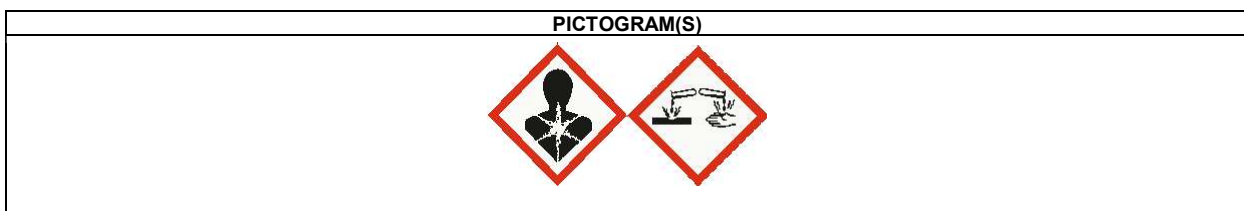
1. IDENTIFICATION

Product name:	BONDERITE M-AC M POWDERED CONDITIONING AGENT known as FIXODINE M	IDH number:	594557
Product type/ Recommended use:	Product for the conversion treatment of metals		
Restriction of Use:	None identified		
Company address:	Region: United States Contact information: Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com		
Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067			

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. H373 - MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1
SERIOUS EYE DAMAGE	1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	2



Precautionary Statements

Prevention:	P260 - Do not breathe dust. P264 - Wash affected area thoroughly after handling. P280 - Wear protective gloves, clothing, eye and face protection.
Response:	P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P314 - Get medical attention if you feel unwell. P363 - Wash contaminated clothing before reuse.
Storage:	P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Tetrasodium pyrophosphate	7722-88-5	30 - 60
Manganese hydrogen phosphate	51349-94-1	30 - 60

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

Non hazardous components

Actual concentration or concentration range is withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.
Skin contact:	Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.
Eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. If symptoms develop and persist, get medical attention.
Ingestion:	Get immediate medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	Not a fire hazard. Formation of toxic gases is possible during heating or in fires.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Wear appropriate personal protective equipment. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Clean-up methods:	Sweep up or gather material and place in appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing dust. For industrial use only.

Storage: Keep the container tightly closed and in a cool, well-ventilated place.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Manganese hydrogen phosphate	0.02 mg/m3 TWA (as Mn) Respirable fraction. 0.1 mg/m3 TWA (as Mn) Inhalable fraction.	5 mg/m3 Ceiling (as Mn)	None	None

Engineering controls: Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of dust, appropriate NIOSH/MSHA respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage must be implemented. If concentrations are below the TLV and/or PEL, a NIOSH approved disposable dust/mist respirator may be used for personal comfort. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-facepiece respirator equipped with dust-mist cartridges may be used. For concentrations greater than 10 times these limits, consult the NIOSH respirator decision logic found in Publication No. 87-116 or ANSI Z88.2-1992.

Eye/face protection: Wear chemical goggles.

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Butyl, Neoprene, PVC or Nitrile gloves recommended. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid
Color:	White
Odor:	Odorless
Odor threshold:	Not available.
pH:	9 - 12
Vapor pressure:	< 100 hPa (20 °C (68°F)) < 100 hPa (50 °C (122°F))
Boiling point/range:	> 100 °C (> 212°F)
Melting point/ range:	> 100 °C (> 212°F)
Density/Relative density:	0.925
Relative vapor density:	Not applicable, Product is a solid
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	The product is not flammable.
Evaporation rate:	Not applicable
Solubility:	Partially soluble Water
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	Not applicable
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.

Particle characteristics: < 1,500 µm
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.
Hazardous reactions: Will not occur.
Hazardous decomposition products: None expected.
Incompatible materials: This product reacts with acids.
Reactivity: Not available.
Conditions to avoid: Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: This product is irritating to the respiratory system. Inhalation may result in metal fume fever. Metal fume fever has flu-like symptoms including fever, chills, perspiration, cough, nasal irritation, chest pain, nausea, head ache, vomiting and muscular weakness.
Skin contact: Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.
Eye contact: Causes serious eye damage.
Ingestion: Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Hazardous Component(s)	LD50s and LC50s
Tetrasodium pyrophosphate	Inhalation LC50 (Rat, 4 h) = > 0.58 mg/l
Manganese hydrogen phosphate	Inhalation LC50 (Rat, 4 h) = > 1.1 mg/l None

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Tetrasodium pyrophosphate	Corrosive Irritant		Metabolic
Manganese hydrogen phosphate			

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Tetrasodium pyrophosphate	No	No	No
Manganese hydrogen phosphate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations. This chemical contains phosphates.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2
CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Manganese hydrogen phosphate (CAS# 51349-94-1).

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 11/21/2024

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.



Revision Number: 006.2

Issue date: 05/01/2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: BONDERITE M-AD 10
PRETREATMENT ADDITIVE known as ADDITIVE 10

IDH number: 594386

Product type/use: Additive

Restriction of Use: None identified

Region: United States

Company address: Henkel Corporation
 One Henkel Way
 Rocky Hill, Connecticut 06067

Contact information:
 Telephone: +1 (860) 571-5100
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CAUSES SKIN IRRITATION.
 CAUSES SERIOUS EYE IRRITATION.
 MAY CAUSE CANCER.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
CARCINOGENICITY	1A

PICTOGRAM(S)



Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash affected area thoroughly after handling. Wear protective gloves, clothing, eye and face protection.

Response: IF ON SKIN: Wash with plenty of water. 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 attention. If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Iron sulphate	7720-78-7	10 - 20
Sulfuric acid	7664-93-9	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Skin contact:	Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting.
Symptoms:	See Section 11.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire. Oxides of sulfur.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. For industrial use only. Provide adequate ventilation. Do not take internally.
Storage:	Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Iron sulphate	1 mg/m3 TWA (as Fe)	None	None	None
Sulfuric acid	0.2 mg/m3 TWA Thoracic fraction.	1 mg/m3 PEL	None	None

- Engineering controls:** Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.
- Respiratory protection:** If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided. Air purifying respirators must use N, R, or P series filters. The filter must be NIOSH classification 95, 99, or 100. Protection provided by air-purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known; or any other circumstances where air purifying respirators may not provide adequate protection.
- Eye/face protection:** Wear chemical goggles; face shield (if splashing is possible).
- Skin protection:** Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended. Recommended gloves include butyl rubber and neoprene.

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|---|--------------------|
| Physical state: | Liquid |
| Color: | Light green |
| Odor: | None |
| Odor threshold: | Not available. |
| pH: | 1.85 - 2.25 |
| Vapor pressure: | Not determined |
| Boiling point/range: | > 212 °F (> 100°C) |
| Melting point/ range: | Not determined |
| Specific gravity: | 1.2 - 1.3 |
| Vapor density: | Not determined |
| Flash point: | Not applicable |
| Flammable/Explosive limits - lower: | Not available. |
| Flammable/Explosive limits - upper: | Not available. |
| Autoignition temperature: | Not applicable |
| Flammability: | Not applicable |
| Evaporation rate: | Not determined |
| Solubility in water: | Complete |
| Partition coefficient (n-octanol/water): | Not determined |
| VOC content: | Not applicable |
| Viscosity: | Not available. |
| Decomposition temperature: | Not available. |

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Oxides of sulfur.
Incompatible materials:	Keep away from organic, alkaline, and oxidizing materials, metallic powders, chromates, chlorates, nitrates, and carbides. Reaction with reducing agents. Adding water to this product may cause localized overheating and splattering.
Reactivity:	Not available.
Conditions to avoid:	Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation:	May cause respiratory tract irritation.
Skin contact:	This product is severely irritating to the skin.
Eye contact:	This product is severely irritating to the eyes.
Ingestion:	Ingestion of this product may cause nausea, vomiting and diarrhea. May be harmful or fatal if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Iron sulphate	Oral LD50 (Mouse) = 1,520 mg/kg Oral LD50 (Rat) = 319 mg/kg Dermal LD50 (Rat) = 155 mg/kg Dermal LD50 (Mouse) = 60.3 mg/kg	Cardiac, Central nervous system, Corrosive, Gastrointestinal, Irritant, Kidney, Liver, Lung, Metabolic, Mutagen, Vascular
Sulfuric acid	None	Carcinogen, Corrosive, Irritant

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Iron sulphate	No	No	No
Sulfuric acid	Known To Be Human Carcinogen.	Group 1	No

12. ECOLOGICAL INFORMATION

Ecological information: Do not empty into drains / surface water / ground water.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002). Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
DOT Hazardous Substance(s): Ferrous sulfate

International Air Transportation (ICAO/IATA)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Additional information: IMDG-Code: Segregation group 1- Acids

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 313: None above reporting de minimis.
CERCLA Reportable quantity: Iron sulphate (CAS# 7720-78-7) 1,000 lbs. (454 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 3

Prepared by: Cheryl Neason, Regulatory Affairs Specialist
Issue date: 05/01/2019

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

Safety Data Sheet



Revision Number: 004.0

Issue date: 12/11/2024

1. IDENTIFICATION

Product name:	BONDERITE M-AD 40 PRETREATMENT ADDITIVE known as PRIMER 40	IDH number:	593868
Product type/ Recommended use:	Cleaner	Region:	United States
Restriction of Use:	None identified	Contact information:	Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067		

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H290 - MAY BE CORROSIVE TO METALS. H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1



Precautionary Statements

Prevention:	P234 - Keep only in original packaging. P260 - Do not breathe vapors, mist, or spray. P264 - Wash affected area thoroughly after handling.
Response:	P280 - Wear protective gloves, clothing, eye and face protection. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage.
Storage:	P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Sodium hydroxide	1310-73-2	10 - 30
Sodium chlorate	7775-09-9	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

Non hazardous components

Actual concentration or concentration range is withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Skin contact:	Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Wear appropriate protective equipment and clothing during clean-up. Prevent further leakage or spillage if safe to do so. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. NEVER ADD WATER TO PRODUCT. For dilutions, add product slowly to water while stirring. Use caution; heat may be generated.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Manufacturer recommends storing above 4.4 °C (40 °F).

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Sodium hydroxide	2 mg/m3 Ceiling	2 mg/m3 PEL	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Colourless / Colorless
Odor:	Odorless
Odor threshold:	Not available.
pH:	14
Vapor pressure:	Water based.
Boiling point/range:	> 100 °C (> 212°F)
Melting point/ range:	Not applicable, Product is a liquid
Density/Relative density:	1.21 - 1.23 at 60 °F (15.56 °C) Freq 001
Relative vapor density:	Water based., Not applicable
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not applicable
Solubility:	Complete Water
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	0 %
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Particle characteristics:	Not applicable, Product is a liquid
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: Will not occur.

Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Incompatible materials: This product reacts with acids. Adding water to this product may cause localized overheating and splattering.

Reactivity: Not available.

Conditions to avoid: Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns.

Skin contact: This product is severely irritating to the skin and may cause burns.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.

Hazardous Component(s)	LD50s and LC50s
Sodium hydroxide	None
Sodium chlorate	Oral LD50 (Mouse) = 8,350 mg/kg Oral LD50 (Rabbit) = 7,200 mg/kg Oral LD50 (Rat) = 1,200 mg/kg Oral LD50 (Mouse) = 8,350 mg/kg Oral LD50 (Rabbit) = 7,200 mg/kg Oral LD50 (Rat) = 1,200 mg/kg

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Sodium hydroxide	Irritant Corrosive		Eyes
Sodium chlorate	Irritant		Blood Kidney Liver

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Sodium hydroxide	No	No	No
Sodium chlorate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Sodium hydroxide solution
Hazard class or division: 8
Identification number: UN 1824
Packing group: II
DOT Hazardous Substance(s): Sodium hydroxide

International Air Transportation (ICAO/IATA)

Proper shipping name: Sodium hydroxide solution
Hazard class or division: 8
Identification number: UN 1824
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: SODIUM HYDROXIDE SOLUTION
Hazard class or division: 8
Identification number: UN 1824
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2

CERCLA/SARA Section 313: None above reporting de minimis.

CERCLA Reportable quantity: Sodium hydroxide (CAS# 1310-73-2) 1,000 lbs. (454 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: This Safety Data Sheet contains changes from the previous version in Section(s): 9

Prepared by: Regulatory Affairs

Issue date: 12/11/2024

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

Safety Data Sheet



Revision Number: 008.0

Issue date: 02/24/2025

1. IDENTIFICATION

Product name:	BONDERITE M-MN LUBRITE 2 MANGANESE PHOSPHATE known as PARCO LUBRITE 2	IDH number:	1029786
Product type/ Recommended use:	Phosphating Products for Metals		
Restriction of Use:	None identified	Region:	United States
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067		
		Contact information:	Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H290 - MAY BE CORROSIVE TO METALS. H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. H317 - MAY CAUSE AN ALLERGIC SKIN REACTION. H334 - MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED. H350 - MAY CAUSE CANCER. H360 - MAY DAMAGE FERTILITY OR THE UNBORN CHILD. H372 - CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
SKIN CORROSION	1
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
CARCINOGENICITY	1A
REPRODUCTIVE TOXICITY	1B
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	1

PICTOGRAM(S)

Precautionary Statements

Prevention:

- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P234 - Keep only in original packaging.
- P260 - Do not breathe vapors, mist, or spray.
- P264 - Wash affected area thoroughly after handling.

IDH number: 1029786

Product name: BONDERITE M-MN LUBRITE 2 MANGANESE PHOSPHATE known as PARCO LUBRITE 2

Response: P270 - Do not eat, drink or smoke when using this product.
 P272 - Contaminated work clothing should not be allowed out of the workplace.
 P280 - Wear protective gloves, clothing, eye and face protection.
 P284 - [In case of inadequate ventilation] wear respiratory protection.
 P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing.
 P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+P313 - IF exposed or concerned: Get medical attention.
 P333+P313 - If skin irritation or rash occurs: Get medical attention.
 P342+P311 - If experiencing respiratory symptoms: Call a poison center or physician.
 P362+P364 - Take off contaminated clothing and wash it before reuse.
 P390 - Absorb spillage to prevent material damage.
Storage: P405 - Store locked up.
Disposal: P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Manganese dihydrogen phosphate	18718-07-5	10 - 30
Phosphoric acid	7664-38-2	5 - 10
Manganese nitrate	10377-66-9	1 - 5
Nickel nitrate	13138-45-9	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. Do not induce vomiting.

Most important symptoms and effects (acute and delayed): The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.

Indication of any immediate medical attention / special treatment needed: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media: Use media appropriate for surrounding material.

Improper extinguishing agents: Not available.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: This product is an aqueous mixture which will not burn.

Hazardous combustion products:

Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.

Clean-up methods:

Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:

Avoid contact with eyes, skin and clothing. Do not take internally. Wash thoroughly after handling. Avoid breathing mists or aerosols of this product. For industrial use only. Do not mix this product with material which contain AMINES. NITROSAMINE may be formed.

Storage:

For safe storage, store at or above 40 °F (4.4 °C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Manganese dihydrogen phosphate	0.02 mg/m ³ TWA (as Mn) Respirable fraction. 0.1 mg/m ³ TWA (as Mn) Inhalable fraction.	5 mg/m ³ Ceiling (as Mn)	None	None
Phosphoric acid	3 mg/m ³ STEL 1 mg/m ³ TWA	1 mg/m ³ PEL	None	None
Manganese nitrate	0.02 mg/m ³ TWA (as Mn) Respirable fraction. 0.1 mg/m ³ TWA (as Mn) Inhalable fraction.	5 mg/m ³ Ceiling (as Mn)	None	None
Nickel nitrate	0.1 mg/m ³ TWA (as Ni) Inhalable fraction.	1 mg/m ³ PEL (as Ni)	None	None

Engineering controls:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1901.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit-testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage, must be implemented. If concentrations are below the TLV and/or PEL, a NIOSH approved disposable dust/mist respirator may be used for personal comfort. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-face piece respirator equipped with dust-mist cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in Publication No.87-116 or ANSI Z88.2-1992. Note: ANSI Z88.2-1992 requires the use of a HEPA filter if the particle size distribution of the contaminant is unknown. **WARNING!** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Chemical resistant, impermeable gloves. Use of impervious apron and boots are recommended. Gloves should be tested to determine suitability for prolonged contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Green
Odor:	Bland
Odor threshold:	Not available.
pH:	< 1.0
Vapor pressure:	Not determined
Boiling point/range:	> 210 °F (> 98.9 °C)calculated
Melting point/ range:	Not determined
Density/Relative density:	1.29 - 1.37 at 15.6 °C (60.08 °F)
Relative vapor density:	Not determined
Flash point:	160 °C (320°F) HST-US 027F
Flammable/Explosive limits - lower:	Not applicable
Flammable/Explosive limits - upper:	Not applicable
Autoignition temperature:	Not available.
Flammability:	Not applicable
Evaporation rate:	Not applicable
Solubility:	Complete Water
Partition coefficient n-octanol/water (logarithmic value):	Not determined
VOC content:	Not applicable
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Particle characteristics:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Decomposes with heat to produce oxides of nitrogen.
Incompatible materials:	This product may react with strong alkalis.
Reactivity:	Not available.
Conditions to avoid:	None expected.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns.
Skin contact: Contact with liquid may produce severe skin irritation including redness, inflammation and chemical burns. Product contains a nickel compound, which may cause an allergic skin sensitization reaction.
Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.

Hazardous Component(s)	LD50s and LC50s
Manganese dihydrogen phosphate	None
Phosphoric acid	Oral LD50 (Rat) = 1,530 mg/kg Dermal LD50 (Rabbit) = 2,740 mg/kg
Manganese nitrate	None
Nickel nitrate	None

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Manganese dihydrogen phosphate	Irritant		Behavioral Blood Developmental Kidney Lung Mutagen Nervous System Reproductive Respiratory
Phosphoric acid	Irritant Corrosive		
Manganese nitrate	Irritant		Behavioral Blood Cardiac Developmental Kidney Liver Lung Mutagen Nervous System Reproductive Respiratory Vascular
Nickel nitrate	Corrosive Irritant	Allergen	Blood Cardiac Central nervous system Developmental Immune system Kidney Liver Lung Mutagen Reproductive Respiratory Sensory Some evidence of carcinogenicity Vascular

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Manganese dihydrogen phosphate	No	No	No
Phosphoric acid	No	No	No
Manganese nitrate	No	No	No
Nickel nitrate	Known To Be Human Carcinogen.	Group 1	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Phosphoric acid solution
Hazard class or division: 8
Identification number: UN 1805
Packing group: III
DOT Hazardous Substance(s): Nickel nitrate

International Air Transportation (ICAO/IATA)

Proper shipping name: Phosphoric acid, solution
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: PHOSPHORIC ACID SOLUTION
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2

CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Nickel nitrate (CAS# 13138-45-9). Manganese nitrate (CAS# 10377-66-9). Manganese dihydrogen phosphate (CAS# 18718-07-5).

CERCLA Reportable quantity: Nickel nitrate (CAS# 13138-45-9) 100 lbs. (45.4 kg)

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 02/24/2025

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

DETERGENT 1000

Version No:1.0

S.GHS.USA.EN

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

SECTION 1 Identification

Product Identifier

Product name: DETERGENT 1000**Synonyms:**

Cleaning preparations

Recommended use of the chemical and restrictions on use

Relevant identified uses:

Cleaning preparations (Do not use it except for industrial applications)

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	NEOS COMPANY LIMITED (Manufacturer)
Address	6-2-1,Kano-cho,Chuo-ku,Kobe,650-0001, Japan
Telephone	+81-78-331-9381

Emergency phone number

Association / Organisation	NEOS COMPANY LIMITED
Emergency telephone numbers	+81-78-331-9381

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Sensitisation (Skin) Category 1
-----------------------	---------------------------------

Label elements

Hazard pictogram(s)

**Signal word:** Warning

Hazard statement(s)

H317: May cause an allergic skin reaction.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P280: Wear protective gloves and protective clothing.

P261: Avoid breathing mist/vapours/spray.

P272: Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

P302+P352: IF ON SKIN: Wash with plenty of water.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

Store locked up.

Precautionary statement(s) Disposal

P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
102-71-6	1-5	2,2',2''-NitriIotri(ethan-1-ol)
Trade secret	<3	Surfactant
Trade secret	<1	Antifoaming agents
	>90	Water and non-hazardous substances

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

Ingestion

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

SECTION 5 Fire-fighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility

None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- **DO NOT** approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.

Fire/Explosion Hazard

- Non combustible.
 - Not considered a significant fire risk, however containers may burn.
- May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

Major Spills

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage**Precautions for safe handling****Safe handling**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- **DO NOT** allow material to contact humans, exposed food or food utensils.
- **DO NOT** allow clothing wet with material to stay in contact with skin

Other information**SECTION 8 Exposure controls / personal protection****Control parameters****Occupational Exposure Limits (OEL)****INGREDIENT DATA**

Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
2,2',2"-Nitritoltri(ethan-1-ol)	E	≤ 0.1 ppm
Notes:	<i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i>	

Exposure controls**Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and 'removes' air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Individual protection measures, such as personal protective equipment**Eye and face protection**

- Safety glasses with side shields.
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

Hands/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

Body protection

See Other protection below

Other protection

- Overalls.
- P.V.C apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

:

Light yellow

Physical state	Liquid	Relative density (Water = 1)	1.045
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	8.0	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (mm²/s)	1.8
Initial boiling point and boiling range (°C)	≥100		
Flash point (°C)	None		
Evaporation rate	Not Available		
Flammability	Not Available		
Upper Explosive Limit (%)	Not Available		
Lower Explosive Limit (%)	Not Available		
Vapour pressure (kPa)	Not Available		
Solubility in water	Miscible		
Vapour density (Air = 1)	Not Available		

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability:

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous reactions:

See section 7

Conditions to avoid:

See section 7

Incompatible materials:

See section 7

Hazardous decomposition products:

See section 5

SECTION 11 Toxicological information

Information on toxicological effects

DETERGENT 1000

DETERGENT 1000	TOXICITY	IRRITATION
	Not Available	Not Available
2,2',2''-Nitrilotri(ethan-1-ol)	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >20000 mg/kg ^[2]	Eye (rabbit): 0.1 ml -
	Dermal (rabbit) LD50: 16 ml/kg * ^[2]	Eye (rabbit): 10 mg - mild
	dermal (rat) LD50: >16000 mg/kg ^[2]	Eye (rabbit): 5.62 mg - SEVERE
	Intraperitoneal (mouse) LD50: 1450 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Intraperitoneal (rat) LD50: 1510 mg/kg ^[2]	Skin (human): 15 mg/3d (int)-mild
	Oral (g.pig) LD50: 2200 mg/kg ^[2]	Skin (rabbit): 4 h occluded no irritation *
	Oral (Guinea) LD50: 2200 mg/kg ^[2]	Skin (rabbit): 560 mg/24 hr- mild minor iritis, minor conjunctival irritation with significant discharge; no corneal injury *
Oral (Mouse) LD50: 5846 mg/kg ^[2]	Skin: no adverse effect observed (not irritating) ^[1]	

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

DETERGENT 1000	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
2,2',2''-Nitrilotri(ethan-1-ol)	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	<0.4	7
	LC50	96h	Fish	11800mg/l	2
	EC50	72h	Algae or other aquatic plants	>107<260mg/l	2
	NOEC(ECx)	Not Available	Fish	>1mg/l	2
	EC50	48h	Crustacea	565.2-658.3mg/l	4
	EC50	96h	Algae or other aquatic plants	169mg/l	1

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
2,2',2''-Nitrilotri(ethan-1-ol)	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
2,2',2''-Nitrilotri(ethan-1-ol)	LOW (BCF = 3.9)

Mobility in soil

Ingredient	Mobility
2,2',2''-Nitrilotri(ethan-1-ol)	LOW (Log KOC = 10)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse

- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 Transport information

Labels Required

Marine Pollutant

NO

	Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
UN number: NA			
UN proper shipping name: Not Applicable			
Transport hazard class(es): Not Applicable			
Subsidiary Hazard: Not Applicable			
Packing group: Not Applicable			

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

OSHA: Hazardous chemical

TSCA inventory:

All ingredients in this product are listed.

TSCA SNUR:

Not Applicable

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No

In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations**US. California Proposition 65**

None Reported

Additional State Regulatory Information

Not Applicable

SECTION 16 Other information**Revision Date:** 30/08/2024

(Made in Japan)

Initial Date: 30/08/2024**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the company Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC - TWA: Permissible Concentration-Time Weighted Average
- PC - STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit,
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECL: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCST: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

SAFETY DATA SHEET

SDS reference number: 1-00002-494020

Issue Date: 2023/2/14

1. IDENTIFICATION

PRODUCT NAME

(Chemical, Brand name etc.) : 酢酸エチル

Supplier	DAISHIN CHEMICAL CO., LTD.	
Address	〒105-0012 1-9-9 Shibadaimon Minato-Ward Tokyo-Metropolis.	
Telephone/Fax	03(3432)4786/03(3433)3618	
Name of section	Koshigaya Factory Technological section	Hyogo Factory Technological section
Address	〒343-0851 Shichiza-cho 4-316, Koshigaya-City,Saitama-Pref.	〒679-2215 Saiji Haio 860-26,Fukusaki-Town, Kanzaki-County,Hyogo-Pref.
Telephone/Fax	048(988)6921/048(985)6288	0790(23)0900/0790(23)1062
Recommended use	For manufacturing, cleaning, and testing of paints and printing inks, limited to uses stipulated by the Special Taxation Measures Law.	
Restrictions on use	Seek expert judgment when using for purposes other than those recommended.	

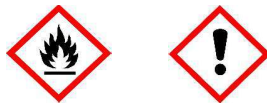
2. HAZARDS IDENTIFICATION

GHS Classification of the substance

Physical Hazards	Explosives	Not classified
	Flammable gases	Not classified
	Aerosols	Not classified
	Oxidizing gases	Not classified
	Gases under pressure	Not classified
	Flammable liquids	Category 2
	Flammable solids	Not classified
	Self-reactive substances and mixtures	Not classified
	Pyrophoric liquids	Not classified
	Pyrophoric solids	Not classified
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures which, in contact with water, emit flammable gases	Not classified
	Oxidizing liquids	Not classified
	Oxidizing solids	Not classified
Health Hazards	Organic peroxides	Not classified
	Corrosive to metals	Classification not possible
	Desensitized explosives	Not classified
	Acute toxicity (oral)	Not classified
	Acute toxicity (Dermal)	Not classified
	Acute toxicity (Gases)	Not classified
	Acute toxicity (Vapours)	Category 4
	Acute toxicity (Dust and Mists)	Classification not possible
	Skin corrosion/Irritation	Not classified
	Serious eye damage/Eye irritation	Category 2
	Respiratory sensitization	Classification not possible
	Skin sensitization	Not classified
	Germ cell mutagenicity	Not classified
	Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible	
Environmental Hazards	Specific target organ toxicity Single exposure	Category 3 (respiratory tract irritation, narcotic effects)
	Specific target organ toxicity Repeated exposure	Not classified
	Aspiration hazard	Classification not possible
	Hazardous to the aquatic environment	
	Acute aquatic toxicity	Not classified
	Chronic aquatic toxicity	Not classified
	Hazardous to the Ozone layer	Not classified

GHS Label elements

Picture display or Symbol:



Signal Word: Danger

Hazard statement:

Highly flammable liquid and vapour
Harmful if inhaled (Vapours)
Causes serious eye irritation
May cause respiratory irritation or May cause drowsiness or dizziness

Instructions: 【Safety measures】

Do not handle it till I read and understand all security attention.
Do not eat, drink or smoke when using this product.
Never use it at Place with fire, the one to generate spark and static electricity,

the vicinity of high temperature heat source etc.
 Moreover, an electric installation and an electric equipment must be assumed to be an explosion-proof construction, and equipment must take all earths.
 Take precautionary measures against static discharges, wear the electrification prevention uniform and an electrostatic safety shoes, etc.
 The sealing up equipment or the local exhaust device is installed and ventilate it enough in the handling work place.
 Wear suitable protective glove, protective spectacles, face shield, protection tool.
 Do not inhale a mist, steam, spray.
 Note no spill in surroundings enough when you put contents in and out from the container.
 Wash and gargle after handling.
 Avoid release to the environment, keep container tightly closed.
 Do not use it except the specified usage (Sniffing paint thinner etc.).
【For emergency】 Take an appropriate fire extinguishing method in the case of the fire. (Powder, Carbon dioxide, foam, etc.)
 Collect it by the proper procedure promptly at the leakage.
 If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing.
 If exposed or concerned, you feel unwell: Get medical advice / attention.
 If in eyes: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do.
 If eye irritation persists, get medical advice / attention.
 If on skin (or hair): Remove / take off immediately all contaminated clothing, Wash with plenty of soap and water.
 Wash / Decontaminate removed protective clothing before reuse.
 If skin irritation occurs, get medical advice / attention.
 If swallowed: Do not induce vomiting.
 Get medical advice / attention.
【Storage】 Store container tightly closed in well-ventilated place and locked up.
 Keep out of reach of children.
【The disposal】 Duties entrust the specialized waste disposal treatment supplier who took the permission of the Governor metropolis and districts with contents and a container

3. COMPOSITION / INFORMATION ON INGREDIENTS

•Product distinction: Substance (Ethyl acetate)

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Content [w t %]	Chemical formula	MITI No.	CAS No.	PRTR Law Control No.	ISHL Enforcement Order Attached table 9 No.
1	Ethyl acetate	100	CH ₃ COOCH ₂ CH ₃	2-726	141-78-6	Not identified	177

4. FIRST-AID MEASURES

If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing.
 Get medical advice / attention.
 If you feel unwell, get medical advice / attention.
 If on skin: Remove contaminated clothing.
 Flush exposed area with water
 Wash with plenty of soap and water.
 If skin irritation occurs, get medical advice / attention.
 Get medical advice / attention.
 Wash / Decontaminate removed protective clothing before reuse.
 If in Eyes: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do.
 Continue rinsing.
 If eye irritation persists, get medical advice / attention.
 Get medical advice / attention.
 If swallowed: Rinse mouth.
 Do not induce vomiting as this may increase the risk of aspiration of the liquid into the lungs causing chemical pneumonitis.
 Get medical advice / attention.
 If you feel unwell, get medical advice / attention.
 An expected acute symptom and a tardive symptom:
 Inhalation: Cough, Dizziness, Drowsiness, Headache.
 Skin contact: Dry skin, Redness.
 Eye Contact: Redness, Pain, Blurred vision.
 Ingestion: Cough, Dizziness, Drowsiness, Headache.
 The most important sign and a symptom: No further details were available.
 Protection of the person who takes measures emergency:
 The fire is noted. It is worn if there is a hazard mask for an organic solvent.

5. FIRE-FIGHTING MEASURES

Extinguishing media A small fire: Carbon dioxide, Powder, Watering, Alcohol-resistant-related fire foam
 An inferno: Watering, Water spray, Alcohol-resistant-related fire foam
 Do not use to extinction medicine: Cylinder shape pouring water.

Special danger hazardous property:	A fire might extend oppositely by watering, use appropriate extinction medicines other than watering among the extinction medicines shown in the above-mentioned. Highly flammable. It ignites easily by heat, the spark, and the flame. The container might explode by heating. There is a threat that it occurs with pungency, the toxicity or corrosive gas by a fire. Highly flammable liquid and vapour.
A special fire extinguishing method:	The flash point is extremely low. It waters it for a big fire in which extinction is not effective in the extinction medicines other than watering. If it is not dangerous, the container is moved from the fire district. It waters the container and surroundings when it is not possible to move and it cools. The fire extinguishing back cools a container with a large quantity of water enough, too.
Protection of the person who extinguishes fire.:	On the occasion of fire extinguishing work, wear protection clothes for appropriate air respiratory organs, chemistry

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Protective equipment and emergency procedures:	Do not touch the leak thing and do not walk the inside. Immediately, all the appropriate distance from the direction of isolation as the leakage area. Evacuate non essential personnel. The worker wears a tool for appropriate protection ("8. Exposure control/Personal protection" in reference.), and avoids eyes, contact to the skin and inhalation of the gas. When do not put on appropriate protection clothes, do not must touch a damaged container or the leak thing. When a fire does not occur even if leak out, wear protection clothes of sealing up-related loud impermeability. It stays in the windward. It leaves the low ground. It ventilates it before it enters the place sealed up.
Instructions for the environment:	Rivers in emissions, environmental impact to avoid attention. Do not let this chemical enter the environment.
Collection, neutralization	In case of a small quantity: It collects it to the empty container that can be sealed up by absorbing by a dry soil, sand, and a nonflammable material or covering. When absorbed to collect, clean tool to use antistatic.
	In case of in large quantities: A wall prevents an outflow by laying earth on the ground and I lead it to the safe place and collect it. Watering decreases the density of steam. However, it is not likely to be able to inhibit combustion in the place sealed up.
Containment and purification method・machine parts:	If it is not dangerous, the leakage is stopped. All the equipment used when the leakage thing is handled is grounded. Because the evaporation density is decreased, the steam control bubble is used.
Prevention plan of secondary disaster :	Shut off all sources of ignition (Smoking in neighborhood, spark, and prohibition of flame). The inflow to the drain ditch, the drainage ditch, the basement or the close place is prevented.

7. HANDLING AND STORAGE

Handling	Technical measures: "8. Exposure control/Personal protection" to the facilities mentioned measures and to wear protective equipment. Limited part exhaust / total ventilation: "8. Exposure control/Personal protection" section of local exhaust, making the entire ventilation.
Handling safety precautions:	Do not handle it till I read and understand all security attention. Prohibit the high temperature thing at the outskirts, spark, use of the fire. Do not make the container fall, do not drop, and do not handle the addition of the impact or drag, etc. Do not come in contact, do not inhale or do not swallow. Avoid contact with eyes. Wash hands thoroughly after handling. Use it only in the outdoors or a good area of the ventilation. Do not eat, drink or smoke when using this product. Do not let this chemical enter the environment.
Storage	Contact evasion: "10. Stability and reactivity" in reference. Technical measures: Assume the wall, the pillar, and the floor to be a fire-resisting construction, and build the beam with a nonflammable material in the inventory location. Storage space is to create a roof be noncombustible and other lightweight metal plate to be noncombustible cleaner, and it set no ceiling. Do the floor of the safekeeping place with structure water invades in a floor aspect or do not seep. It is assumed the structure that dangerous articles do not infiltrate, and the floor in the inventory location must apply an appropriate inclination, and install appropriate. The equipment of a lighting, and ventilation necessary to store or to handle dangerous articles is installed in the inventory location. Storage conditions: Keep it away from heat, a spark, a naked light, the firing source such as the thing of the high temperature.-Prohibition of smoking. Keep away from oxidants. Container must avoid direct sunshine and the fire. Keep it in the cold place where the container is sealed up and ventilation is good.

Lock and keep it.

Incompatible materials: "10. Stability and reactivity" in reference.

Container wrapping material: The container provided for by Fire Defense Law and the United Nations transportation regulations is used.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	JPISHL OEL [ppm]	Allowable concentration [ppm]	
			JP JSOH	ACGIH(TWA)
1	Ethyl acetate	200	200	400

Engineering measures: The work area of the steam source and handling, providing a closed system such as equipment or local exhaust ventilation.
Use appropriately electricity, ventilation, and the lighting of the explosion-proof.
Lecture on preventive measures to the static discharge.
Make available emergency shower and eye wash in where this material is stored or is handled.

Protective equipment
Respiratory protection: Wear suitable respiratory protection (Gas masks, air-supplied masks, air respirators, etc.).
Hand protection: Wear suitable glove (Impermeable).
Eye protection: Wear suitable eye protection. [Safety spectacles, Safety glasses, Safety goggles]
Skin and a tool for physical protection: Wear suitable protective clothing (Impermeable industrial hygiene protective clothing) and protection for appropriate faces.

Sanitary measures: Wash hands after handling it well.
When using do not eat or drink, smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state, colour: Colorless transparent liquid
Odour: Solvent smell
pH: Neutrality
Melting point/freezing point: ≤-82°C (Melting point)
Initial boiling point and boiling range: 77°C (Boiling point)
Flash point: -4.0°C (Tag closed cup)
Explosive limits: Lower limit 2.2 vol.%, Upper limit 11.4 vol.%
Vapour pressure: 10,000Pa (20°C)
Vapour density (air=1): 3.0
Specific gravity (Density): 0.901 g/cm3 (20°C)
Solubility: Insoluble (Water)
Meltable in the Organic Solvent.
Auto-ignition temperature: over 427°C

10. STABILITY AND REACTIVITY

Stability: This material is stable in the normal handling.
Heating may cause ignition.
As a result of flow, agitation, etc., electrostatic charges can be generated.

Dangerous, harmful, reactive possibility:
Reacts with strong oxidising agents, causing fire and explosion hazard.

Conditions to avoid: Heating. High temperature
Incompatible materials: Strong oxidants, Strong acids, Strong alkali.
Harmful resolution decomposition products.:
The carbon monoxide and the carbon dioxide are generated by the heating resolution.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (oral) Not classified
Acute toxicity (Dermal) Not classified
Acute toxicity (Gases) Not classified
Acute toxicity (Vapours) Category 4 Harmful if inhaled
Acute toxicity (Dust and Mists) Classification not possible
Skin corrosion/Irritation Not classified
Serious eye damage/Eye irritation Category 2 Causes serious eye irritation
Respiratory sensitization Classification not possible
Skin sensitization Not classified
Germ cell mutagenicity Not classified
Carcinogenicity Classification not possible
Reproductive toxicity Classification not possible
Specific target organ toxicity Single exposure Category 3 May cause respiratory irritation or May cause drowsiness or dizziness
Specific target organ toxicity Repeated exposure Not classified
Aspiration hazard Classification not possible

○Health Hazards of Ingredients

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Acute toxicity			
		oral	Dermal	Vapours	Dust/Mist
1	Ethyl acetate	Not classified	Not classified	Category 4	Classification not possible
INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Skin corrosion/ irritation	Serious eye damage/ irritation	Respiratory	Skin sensitization
1	Ethyl acetate	Not classified	Category 2B	Classification not possible	Not classified

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Germ cell mutagenicity	Carcinogenicity	Reproductive toxicity
1	Ethyl acetate	Not classified	Classification not possible	Classification not possible
INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Specific target organ systemic toxicity		Aspiration hazard
		Single exposure	Repeated exposure	
1	Ethyl acetate	Category 3(respiratory tract irritation, narcotic effects)	Not classified	Classification not possible

12. ECOLOGICAL INFORMATION

Hazardous to the aquatic environment:

Acute aquatic toxicity Not classified

Chronic aquatic toxicity Not classified

Hazardous to the Ozone layer Not classified

○Environmental Hazards of Ingredients

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Hazardous to the aquatic environment		Hazardous to the Ozone layer
		(Acute hazard)	(Chronic hazard)	
1	Ethyl acetate	Not classified	Not classified	Not classified

13. DISPOSAL CONSIDERATIONS

Material Disposal:

Obey the law concerned and the standard of the local government.

When the person who took the permission such as the Governor metropolis and districts of waste industry or local public entity works to the, I entrust there and process it.

When I entrust you with disposal of waste, I entrust processing suppliers with processing in announcing danger, hazardous property enough.

A pollution container and packing:

I perform appropriate disposal according to the law concerned and the standard of the local government whether the container cleans it and recycles it.

When I dispose of an empty container, completely remove contents.

14. TRANSPORT INFORMATION

International Regulation

Sea regulation information It applies to regulations of IMO

UN No.: 1173

Proper Shipping Name: ETHYL ACETATE

Class: 3

Packing Group: II

Marine Pollutant: Not applicable

Aviation regulation information It applies to regulations of ICAO/IATA

UN No.: 1173

Proper Shipping Name: ETHYL ACETATE

Class: 3

Packing Group: II

Domestic Regulation

Land regulation information It applies to regulations of Fire Service Law, Road law.

Sea regulation information It applies to regulations of Ship Safety Law

UN No.: 1173

Proper Shipping Name: ETHYL ACETATE

Class: 3

Packing Group: II

Aviation regulation information It applies to regulations of Aviation law

UN No.: 1173

Proper Shipping Name: ETHYL ACETATE

Class: 3

Packing Group: II

Special safety measures

A transportation container the dangerous materials concerned fall to the dangerous materials or received dangerous materials drops, and load it I fall down or not to be damaged.

Carry it dangerous materials or the container which received dangerous materials is remarkable, and not to raise friction or unrest.

When there is a threat that dangerous materials leak remarkably, and a disaster occurs during the transportation of dangerous materials, I take an emergency step to prevent a disaster, and report it to the relations engine of the most much coming near firefighting engine others.

Of avoid direct rays of the sun on the occasion of the transportation, and leaking it the damage of the container, corrosion load it so that there is not it, and perform prevention of the collapse of cargo surely.

Do not transport it with food and feed.

Do not do increase of heavy goods.

The maintenance of the Yellow card is necessary at the time of transportation.

15. REGULATORY INFORMATION

•Fire Service Law: Dangerous Substances Class 4 Flammable Liquids Type 1 petroleum

•ISHL(Industrial Safety and Health Law):

Enforcement Order, Article 18 Dangerous or Harmful Substances Subject to Be Indicated their Names, etc.

Enforcement Order, Article 18-2 Dangerous or Harmful Substances Subject to Be Notified their Names, etc.

Enforcement Order, Attached table 1 Dangerous Substances (Inflammable Substances)

Ordinance on Prevention of Organic Solvent Poisoning : Second-class organic solvents

- Poisonous & Deleterious Substance Control Law: Deleterious Substances
- Ship Safety Law: Flammable Liquids
- Aviation law: Flammable Liquids
- Odor control law: Enforcement Order, Article1 Bad smell substance (Ethyl acetate)
- PRTR (Pollutant Release and Transfer) Law: Not identified
- ※ Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. OTHER INFORMATION

- References: Japan Industrial Safety and Health Association (JISHA)
National Institute of Technology and Evaluation (NITE)
Manufacturers SDS, etc.
- Other: The content of this book might revise regulations, and be revised by a new finding, the access to information, and the examination, etc.
It is not the one to do any guarantee for data and the evaluation of the description though the content of the description is made based on the material that was able to be acquired now and information in the document etc.
Close attention is necessary for handling because in all chemical products, there can be unknown danger and a hazardous property.
It cannot be guaranteed that neither danger nor the hazardous properties other than can be unknown danger the content of the description exist though usual danger and the hazardous property are described in this book.
The description matter is the one intended for usual handling, and it wishes handling after the safety plan that is appropriate for the usage and the usage is newly executed when special handling is done.
-

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

SAFETY DATA SHEET(SDS)

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name : Moly C-S
 Company Name : SUMICO LUBRICANT CO., LTD.
 Address : Shimbashi Sumitomo Bldg., 11-3, Shimbashi 5-chome Minato-ku, Tokyo 105-0004, Japan
 Phone Number : +81-3-5401-8515
 Fax Number : +81-3-5401-0471
 Mail Address : Lub_SUMICO@smm-g.com

2 HAZARDS IDENTIFICATION

Hazards Category

Flammable Liquids : Category 2
 Acute Toxicity(Inhalation) : Category 4
 Serious Eye Damage/Eye Irritation : Category 2B
 Reproductive Toxicity : Category 2
 Specific Target Organ Systemic Toxicity(Single Exposure) : Category 3

The one without the description cannot be classified.

Allocation of Label Elements

Pictogram

Flame
 Exclamation mark
 Health Hazard



Signal Word

Danger

Hazard Statement

Highly flammable liquid and vapour
 Harmful if inhaled
 Cause eye irritation
 Suspected of damaging fertility or the unborn child
 May cause harm to breast-fed children
 May cause respiratory irritation; or May cause drowsiness or dizziness

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients and Contents

Component name	CAS number	wt%
Molybdenum disulfide	1317-33-5	5~15
Ethyl acetate	141-78-6	80~90
Cellulose, nitrate	9004-70-0	1~5
2-Propanol	67-63-0	<1

4 FIRST-AID MEASURES

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 Call a physician if you feel unwell.

Skin

Wash with plenty of soap and water.
 Call a physician if you feel unwell.

Eye

Immediately flush eyes with plenty of water for at least 15 minutes.

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

Call a physician.

Ingestion

Rinse mouth. Do not induce vomiting.

Call a physician.

5 FIRE-FIGHTING MEASURES

Extinguishing Media

Dry chemical, carbon dioxide(CO2), and foam

Specific Fire Fighting

Must not use water to extinguish fires.

Quickly removed from the surrounding flammable.

The use of extinguishing agents specified.

Fire fighting is done from the windward.

On small fires use carbon dioxide (CO2) or dry chemical.

On large fires use dry chemical or foam.

Sealed containers that are exposed to high temperatures over the water to cool.

Protection for Fire-fighter

Wear full body protective clothing with breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear protective equipments in case of operation.

Environmental Precautions

Avoid release to the environment.

Methods for Cleaning Up

Remove potential ignition source in vicinity as soon as possible.

Prepare extinguishing agent.

Prevent leakage by enclosing with nonflammables and collect into empty container by scoop or the like.

Absorbed to non-flammable dry sand, if a large amount of spill to prevent enclosed in embankment.

Spilled material is collected in a container that can be sealed, then remove to safe place.

Deposits, waste treatment is based on the local regulations.

Working from the windward, to evacuate people downwind.

7 HANDLING AND STORAGE

Handling

Use in a well ventilated area.

Keep away from heat, spark and flames.

Use spark-proof tools and explosion-proof equipment.

After handling, wash well hands and face and rinse your mouth.

Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower.

Leakage, overflow, to prevent scattering, we do not generate steam in vain.

In the handling area and deny unnecessary entry.

Resting place shall not bring contaminated protective equipment such as gloves.

Wear protective equipments when risk of exposure occurs.

To work in an enclosed area that you work with appropriate protective equipment with a local exhaust ventilation sufficient.

Precautions

Do not breathe vapor or mist.

Handling of the outdoors, as much as possible to work from the windward.

Note is flammable at higher temperatures.

Handling Precautions for Safety

Avoid physical damage to containers.

Keep containers securely sealed when not in use.

To avoid sudden release of pressure, loosen closure cautiously before opening.

Storage

Fire prohibited strictly.

Keep away from sources of ignition.

Store in a cool, dry, well-ventilated area away from incompatible substances.

Separate from oxidizing materials.

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

Store in a tightly closed container.
 Safe containers and packaging materials
 None in particular.

8 EXPOSURE/PERSONAL PROTECTION

Engineering Controls

Handling equipment is used explosion-proof.
 Attach an exhaust device to prevent vapor from staying.
 That the equipment and shall become hot, and the source of ignition in the vicinity of the location, such as handling not been placed.
 Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limit Values

Chemical name	ACGIH
Molybdenum disulfide	TWA 3mg/m3
Ethyl acetate	TWA 400ppm
2-Propanol	TWA 200ppm, STEL 400ppm

Personal Protective Equipment

Respiratory Protection

Wear an organic gas mask or positive pressure air respirator if necessary.

Skin Protection

Solvent-resistant gloves

Eye Protection

Wear chemical worker's goggles.

Skin and body protection

Such as long-sleeved work clothes

Hygiene measures

Do not eat, drink or smoke during work.

Replacement of the adsorbent, such as the mask is performed each time or use plans.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Liquid
Color	:	Dark gray
Odor	:	Solvent odor
pH	:	Not available
Boiling Point(°C)	:	Not available
Melting Point(°C)	:	Not available
Flammability	:	Not available
Flash point(°C)	:	-4
Auto-ignition Temperature(°C)	:	Not available
Flammability or Explosive Limits		
Lower	:	Not available
Upper	:	Not available
Vapour Pressure (KPa)	:	Not available
Vapour Density	:	Not available
Relative density(g/cm3)	:	0.98
Solubility	:	Insoluble in water
Partition Coefficient: n-octanol/water	:	Not available
Decomposition Temperature(°C)	:	Not available
Dynamic viscosity rate	:	Not available
Relative gas density	:	Not available
Particle properties	:	Not available

10 STABILITY AND REACTIVITY

Stability

Stable under normal temperatures and pressures.

Reactivity

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

No self-reactive
 Conditions to Avoid
 Heat, flames, ignition sources and incompatibles.
 Hazardous Decomposition Products
 Carbon monoxide, carbon dioxide and other oxidized substances.

11 TOXICOLOGICAL INFORMATION

Chemical name	Acute toxicity (oral)	Acute toxicity (dermal)	Acute toxicity (inhalation: gas)	Acute toxicity (inhalation: vapour)	Acute toxicity (inhalation: dust, mist)	Skin corrosion / irritation	Serious eye damage / eye irritation
Molybdenum disulfide	Not applicable to category	Not applicable to category	Not applicable to category	Not applicable to category	Classification not possible	Classification not possible	Classification not possible
Ethyl acetate	Not applicable to category	Not applicable to category	Not applicable to category	Category 4	Classification not possible	Not applicable to category	Category 2B
Cellulose, nitrate	Not applicable to category	Classification not possible	Not applicable to category	Classification not possible	Classification not possible	Classification not possible	Classification not possible
2-Propanol	Not applicable to category	Not applicable to category	Not applicable to category	Not applicable to category	Classification not possible	Not applicable to category	Category 2A

Chemical name	Respiratory/skin sensitizer	Germ cell mutagenicity	Carcinogenicity	Toxic to reproduction	Specific target organs/systemic toxicity following single exposure	Specific target organs/systemic toxicity following repeated exposure	Aspiration hazard
Molybdenum disulfide	Respiratory sensitizer: Classification not possible; Skin sensitizer: Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Ethyl acetate	Respiratory sensitizer: Classification not possible; Skin sensitizer: Not applicable to category	Not applicable to category	Classification not possible	Classification not possible	Category 3 (narcotic effects, respiratory tract irritation)	Classification not possible	Classification not possible
Cellulose, nitrate	Respiratory sensitizer: Classification not possible; Skin sensitizer: Classification not possible	Classification not possible	Classification not possible	Classification not possible	Category 3 (narcotic effects)	Classification not possible	Classification not possible
2-Propanol	Respiratory sensitizer: Classification not possible; Skin sensitizer: Classification not possible	Classification not possible	Classification not possible	Category 2	Category 1 (central nervous system, systemic toxicity); Category 3 (respiratory tract irritation)	Category 1 (blood system), Category 2 (respiratory organs, liver, spleen)	Category 2

12 ECOLOGICAL INFORMATION

Chemical name	Hazardous to the aquatic environment (Acute)	Hazardous to the aquatic environment (Chronic)	Hazard to the ozone layer	Residuality and decomposition	Ecological accumulation	Mobility in soil

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

Molybdenum disulfide	Classification not possible	Classification not possible	Classification not possible	No data	No data	No data
Ethyl acetate	Not applicable to category	Not applicable to category	Classification not possible	No data	No data	No data
Cellulose, nitrate	Not applicable to category	Not applicable to category	Classification not possible	No data	No data	No data
2-Propanol	Not applicable to category	Not applicable to category	Classification not possible	No data	No data	No data

13 DISPOSAL CONSIDERATIONS

Dispose of contents /container in accordance with local/regional/national/international regulations.

14 TRANSPORT INFORMATION

UN Class

Flammable liquid, Class 3

UN No.

UN1263

Packing Group

II

15 REGULATORY INFORMATION

Follow all regulations in your country.

16 OTHER INFORMATION

References

JIS Z 7253 (2019)

GHS data-base (NITE)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

PPG Industries, Inc.
Environmental Data Sheet
 Tuesday, April 29, 2025

Product: CR100 PPG POWERCRON® 10X

PRODUCT PHYSICAL CHARACTERISTICS:

WEIGHT PER GALLON:		8.82 lb/gal
DENSITY OF ORGANIC SOLVENT BLEND:		8.52 lb/gal
	<u>Weight</u>	<u>Volume</u>
NON-VOLATILE:	35.6%	31.9%
VOLATILE:	64.4%	68.1%
PERCENT OF WATER:	61.5%	65.1%
PERCENT OF EXEMPTS:	0.0%	0.0%

VOC INFORMATION:

VOC/GAL LESS WATER (LESS EXEMPTS):	0.73 lb/gal	87 g/L
ACTUAL VOC/GAL (WITH WATER WITH EXEMPTS):	0.25 lb/gal	31 g/L
VOC PER GALLON OF SOLIDS:	0.80 lb/gal	96 g/L
VOC PER POUND OF SOLIDS:	0.08 lb/lb	

VOLATILE COMPOSITION: PERCENT OF TOTAL FORMULA:

<u>Component</u>	<u>Name</u>	<u>Weight</u>	<u>Volume</u>
7732-18-5	WATER	61.5	65.1
770-35-4	2-Propanol, 1-phenoxy-	2.2	2.2
111-76-2	2-Butoxyethanol	0.3	0.3
108-10-1	Methyl isobutyl ketone	0.2	0.2
107-98-2	Propylene glycol monomethyl ether	0.1	0.1
	TOTAL OF REMAINING VOLATILES < 0.1%	0.0	0.0

REGULATORY INFORMATION BASED ON 100 GALLONS DEFAULT

<u>Component</u>	<u>Name</u>	<u>lb</u>	<u>kg</u>	<u>HAPS</u>	<u>SARA</u>
108-10-1	Methyl isobutyl ketone	1.57	0.71	Yes	No

POUND OF ORGANIC HAPS PER POUND OF SOLIDS: 0.00
 POUND OF ORGANIC HAPS PER GALLON OF SOLIDS: 0.06
 POUND OF ORGANIC HAPS PER GALLON OF PRODUCT: 0.02
 PERCENT OF ORGANIC HAPS (VHAP): 0.2%

DISCLAIMER

This Environmental Data Sheet is not intended to replace the product's Material Safety Data Sheet.

The data contained in this Environmental Data Sheet is based on information provided to PPG by its suppliers and PPG's knowledge of PPG product formulations. PPG makes no representation or warranty regarding the accuracy of supplier furnished information or that this information or data will not change.

The information in this Environmental Data Sheet is not intended to and does not create legal rights or obligations. This information is provided for the sole use of PPG customers and is not for disclosure to competitors of PPG. PPG customers have an independent obligation to determine proper use of the information and that their use of the information is consistent with federal, state and local laws, rules and regulations.

Trace constituents present at levels less than 0.01 lb or kg are not included in the Regulatory Information section of this Environmental Data Sheet. Volatile HAPS present at levels less than 0.1% by weight for carcinogens and 1.0% for non-carcinogens will not be shown or will be indicated by a "No" in the Regulatory Section (under HAPS) of this Environmental Data Sheet.

Trace volatiles present at levels less than 0.1% are not listed individually in the volatile section of this EDS. Total trace volatiles is reported as "Total of remaining volatiles < 0.1%".

Chemical compounds generated as a result of the curing process of this coating are not included on this Environmental Data Sheet.

The USEPA listing of VOC exempt compounds [40CFR51.000(s)] is used in calculating VOC values.

SAFETY DATA SHEET

SECTION 1 - Products and company identification

Product Name or Number	DEFRIC COAT HMB-2 SOLVENT
Manufacture' s Name	KAWAMURA RESEARCH LABORATORIES, INC.
Address	1-5-6, Meguro, Meguro-Ku, TOKYO 153-0063 JAPAN
Emergency Telephone Number	+81-3-3491-6896
Telephone Number	+81-3-3495-2121
Date Prepared	May 21, 2025 (ver.2)
Prepared by	H. Shindo
Recommended use	Thinner for paint
Restrictions on use	Industrial

SECTION 2 - Hazard identification

Hazards symbol and signal word :  **DANGER**

Physical hazards: Flammable liquids Category 2

Health hazards:

Acute toxicity-Oral	Category 5
Acute toxicity-Dermal	Category 5
Acute toxicity-Inhalation	Category 4
Skin corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2
Sensitization-Respiratory	-
Sensitization-Skin	-
Germ cell mutagenicity	-
Carcinogenicity	Category 1
Toxic to reproduction	Category 1
Specific target organ systemic toxicity (Single exposure) :	Category 1 (central nervous system) Category 3 (narcotic effects, respiratory tract irritation)
Specific target organ systemic toxicity (Repeated exposure) :	Category 1 (central nervous system, liver, kidney) Category 2 (respiratory organ, nervous system, bone marrow, lung)
Aspiration toxicity	-
Environmental hazards:	
Acute aquatic toxicity	-
Chronic aquatic toxicity	-
Hazardous to the ozone layer	-

Hazard statement:

Highly flammable liquid and vapor.
May be harmful if swallowed.
May be harmful in contact skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to central nervous system.
May cause respiratory irritation.
May cause drowsiness and dizziness.
Causes damage to central nervous system, liver, kidney through prolonged or repeated exposure.
May cause damage to respiratory organ, nervous system, bone marrow, lung through prolonged or repeated exposure.

Prevention:

Keep container tightly closed.
Keep away from ignition sources such as heat, sparks and open flame— No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Do not get in eyes, on skin, or on clothing.
Wear protective gloves/clothing/glass.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Avoid release to the environment.

Response:

For a fire: Extinguish fire by using a powdery fire extinguisher, the fire foam, and carbon dioxide.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Get medical attention/advice.
Wash hands after handling.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs, get medical advice/attention.
Take off contaminated clothing and wash before re-use.
Collect spillage.

Storage/Disposal:

Provide and store a fixed place of 40°C or less where ventilation is good.
Store locked up.
Contents and the container must consign the business to a special waste management trader who obtains the administrative divisions governor's permission.

SECTION 3 - Composition / Information on ingredients**Chemical Name and Condition:** Thinner , Mixture

Hazardous Components	CAS RN	Concentration (%)
1,4-dioxane	123-91-1	70
N-methyl-2-pyrrolidone	872-50-4	30

SECTION 4 – First aid measure

Inhalation	Keep the victim warm and quiet. Remove the victim from the contamination immediately to fresh air.
Eye	Immediately flush with water for at least 15 minutes. Get medical attention if eye irritation persists.
Skin	Remove excess with cloth or paper and wash area thoroughly with soap and water.
Ingestion	Consult a physician. Do not induce vomiting.
Note to physicians	Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – Firefighting measures

Suitable extinguishing media	Carbon dioxide, Foam, Water fog, Dry Chemical or Sand.
For safety reasons unsuitable extinguishing media	Water, Water full jet
Firefighting instructions	Dense smoke. Fire fighters wear an approved self-contained breathing apparatus.

SECTION 6 – Accidental release measures**Person-related safety precautions :**

Wear protective equipment.
Keep unprotected person away.

Measures for environmental protection :

Prevent seepage into sewage system, work pits and cellars.
Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/ collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Dispose contaminated material as waste according to item 13.
 Ensure adequate ventilation.
 Do not flush with water or aqueous cleansing agents.

Additional information:

Clean contaminated surface thoroughly.

SECTION 7 – Handling and Storage

Handling:

Contact with eyes may cause irritation.
 Use protective glasses or other devices to avoid contact with eyes.
 Contact with skin may cause irritation.
 Use protective gloves to avoid skin contact.
 Do not swallow.
 Wear gloves to avoid injury on hands when opening the container.
 Keep out reach of children.

Storage:

Storage away from fire source or sunlight and in cool dry area.

SECTION 8 – Exposure controls / Personal protection

Hazardous Components	ACGIH TLV	Others
N-methyl-2-pyrrolidone	–	Not applicable
1,4-dioxane	20 ppm	IARC 2B

Engineering controls:

When handling indoors, to provide a local exhaust ventilation in the work area.

Personal protective measures

Eye protection : Chemical goggles with side shields or face recommended.

Skin protection: Protective clothing (long-sleeved, impervious, conductive), conductive shoes, front cover (solvent resistant)
 Protective gloves (impervious, chemical resistant, etc.), etc.

Respiratory protection : A respirator is generally not necessary when using this product outdoors or in large open areas. In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hygienic protection : Wash thoroughly after handling.

SECTION 9 – Physical and Chemical Properties

Physical state	Liquid
Color	Clear
Odor	Characteristic
Melting point / Freezing point	No data
Boiling point	101 °C
Flammability	Yes
Explosive limited	Lower limit 0.99 vol% Upper limit 22 vol%
Flash point	18 °C
Auto ignition temperature	180 °C
Decomposition temperature	No data
pH	No data
Kinematic viscosity	No data
Solubility	No data
Partition coefficient n-octanol/water	No data
Vapor pressure	3.9 kPa (20°C)
Relative density (water=1)	1.03 (20°C)
Relative gas density (gas=1)	No data
water solubility	None
Particle Properties	Not applicable

SECTION 10 – Stability and Reactivity**Thermal decomposition / conditions to be avoided :**

Product is stable under normal condition. Avoid overheating.

Dangerous reactions :

Strong oxidizers such as hydrogen peroxide.

Dangerous decomposition products :

Carbon monoxide and dioxide from burning.

Hazardous polymerization:

Not applicable

Reactivity with water:

No reaction

SECTION 11 – Toxicological information

Acute toxicity	Oral (LD50)	Dermal (LD50)	Inhalation (LC50/4h)
N-methyl-2-pyrrolidone	5 (3500 mg/kg)	Not classified (6000 mg/kg)	Not classified
1,4-dioxane	Not classified (5170 mg/kg)	5 (2100 mg/kg)	4 (9158ppm)

	Category	Material
Skin corrosion/irritation	2	N-methyl-2-pyrrolidone 1,4-dioxane
Eye damage/irritation	2A	N-methyl-2-pyrrolidone, 1,4-dioxane
Sensitization-Respiratory	-	Not applicable
Sensitization-Skin	-	Not applicable
Germ cell mutagenicity	-	Not applicable
Carcinogenicity	1B	1,4-dioxane
Toxic to reproduction	1B	N-methyl-2-pyrrolidone
Specific target organ systemic toxicity (Single exposure)	1	1,4-dioxane (central nervous system)
	3	Respiratory tract irritation: N-methyl-2-pyrrolidone, 1,4-dioxane Narcotic effects: 1,4-dioxane
Specific target organ systemic toxicity (Repeated exposure)	1	1,4-dioxane (central nervous system, liver, kidney)
	2	1,4-dioxane (respiratory organ) N-methyl-2-pyrrolidone (liver, bone marrow, lung, nervous system)
Aspiration toxicity	-	Not applicable

SECTION 12 – Ecological information

	Category	Material
Hazardous to the aquatic environment-Acute hazard:	-	Not applicable
Hazardous to the aquatic environment-Chronic hazard:	-	Not applicable
Hazardous to the ozone layer:	-	Not applicable

SECTION 13 – Disposal consideration

Product Recommendation:

Must not be disposed together with household garbage.

Do not allow product to reach sewage system.

Uncleaned packaging Recommendation:

Disposal must be made according to official regulations.

SECTION 14 – Transport information

UN No. : 1263

Description of goods: Thinner (for PAINT)

Hazard class: 3, Flammable liquids

Packaging group: II

SECTION 15 – Regulatory information**International Inventories:**

TSCA (USA): All ingredients listed
EINECS (EUROPE): All ingredients listed
ENCS (Japan): All ingredients listed
IECSC (China): All ingredients listed
KECL (Korea): All ingredients listed
Taiwan: All ingredients listed
DSL (Canada): All ingredients listed
AICS (Australia): All ingredients listed
ERMA (New Zealand): All ingredients listed

SECTION 16 – Other information

This SDS is an addition and complementary document besides the technical data sheet.
This information is based upon our knowledge about the product at the date of edition.
Since we cannot anticipate or control the different conditions under which this information or our product may be used, we make no guarantee that recommendations will be adequate for all individuals and situations.

SAFETY DATA SHEET

SECTION 1 - Products and company identification	
Product Name or Number	DEFRIC COAT HMB-2M
Manufacture' s Name	KAWAMURA RESEARCH LABORATORIES, INC.
Address	1-5-6, Meguro, Meguro-Ku, TOKYO 153-0063 JAPAN
Emergency Telephone Number	+81-3-3491-6896
Telephone Number	+81-3-3495-2121
Date Prepared	July 24, 2024 (ver.2)
Prepared by	H. Shindo
Recommended use	Lubricant (solid lubricant paint)
Restrictions on use	Industrial

SECTION 2 - Hazard identification

Hazards symbol and signal word :  DANGER

Physical hazards:	Flammable liquids Category 2
Health hazards:	
Acute toxicity-Oral	-
Acute toxicity-Dermal	Category 5
Acute toxicity-Inhalation	Category 4
Skin corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2
Sensitization-Respiratory	-
Sensitization-Skin	-
Germ cell mutagenicity	-
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B
Specific target organ systemic toxicity (Single exposure) :	
Category 1 (central nervous system, liver)	
Category 2 (respiratory organ, kidney)	
Category 3 (narcotic effects)	
Specific target organ systemic toxicity (Repeated exposure) :	
Category 1 (respiratory organ, central nervous system, liver, kidney)	
Category 2 (nervous system, bone marrow, auditory organ, lung)	
Aspiration toxicity	-
Environmental hazards:	
Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3
Hazardous to the ozone layer	-

Hazard statement:

Highly flammable liquid and vapor.
May be harmful in contact skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to central nervous system, liver.
May cause damage to respiratory organ, kidney.
May cause drowsiness and dizziness.
Causes damage to respiratory organ, central nervous system, liver, kidney through prolonged or repeated exposure.
May cause damage to nervous system, bone marrow, auditory organ, lung through prolonged or repeated exposure.
Harmful to aquatic life.
Harmful to aquatic life with long lasting effects.

Prevention:

Keep container tightly closed.
Keep away from ignition sources such as heat, sparks and open flame— No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Do not get in eyes, on skin, or on clothing.
Wear protective gloves/clothing/glass.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Avoid release to the environment.

Response:

For a fire: Extinguish fire by using a powdery fire extinguisher, the fire foam, and carbon dioxide.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Get medical attention/advice.
Wash hands after handling.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs, get medical advice/attention.
Take off contaminated clothing and wash before re-use.
Collect spillage.

Storage/Disposal:

Provide and store a fixed place of 40°C or less where ventilation is good.
Store locked up.
Contents and the container must consign the business to a special waste management trader who obtains the administrative divisions governor's permission.

SECTION 3 - Composition / Information on ingredients

Chemical Name and Condition: Paint of Solid lubricant, Mixture

Hazardous Components	CAS RN	Concentration (%)
Synthetic resin	Trade secret	5-15
Molybdenum disulfide	1317-33-5	1-10
Graphite	7782-42-5	1-10
Diantimony trioxide	1309-64-4	1-10
1,4-dioxane	123-91-1	40-50
N,N-dimethylacetamide	127-19-5	10-20
N-methyl-2-pyrrolidone	872-50-4	10-20
Xylene	1330-20-7	1-10
Ethylbenzene	100-41-4	1-10

SECTION 4 – First aid measure

Inhalation	Keep the victim warm and quiet. Remove the victim from the contamination immediately to fresh air.
Eye	Immediately flush with water for at least 15 minutes. Get medical attention if eye irritation persists.
Skin	Remove excess with cloth or paper and wash area thoroughly with soap and water.
Ingestion	Consult a physician. Do not induce vomiting.
Note to physicians	Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – Firefighting measures

Suitable extinguishing media	Carbon dioxide, Foam, Water fog, Dry Chemical or Sand.
For safety reasons unsuitable extinguishing media	Water, Water full jet
Firefighting instructions	Dense smoke. Fire fighters wear an approved self-contained breathing apparatus.

SECTION 6 – Accidental release measures

Person-related safety precautions:

Wear protective equipment.
Keep unprotected person away.

Measures for environmental protection:

Prevent seepage into sewage system, work pits and cellars.
Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/ collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents.

Additional information:

Clean contaminated surface thoroughly.

SECTION 7 – Handling and Storage

Handling:

Contact with eyes may cause irritation.
Use protective glasses or other devices to avoid contact with eyes.
Contact with skin may cause irritation.
Use protective gloves to avoid skin contact.
Do not swallow.
Wear gloves to avoid injury on hands when opening the container.
Keep out reach of children.

Storage:

Storage away from fire source or sunlight and in cool dry area.

SECTION 8 – Exposure controls / Personal protection

Hazardous Components	ACGIH TLV	Others
Molybdenum disulfide	3 mg/m ³ (Mo)	Not applicable
Diantimony trioxide	0.5mg/m ³ (Sb)	IARC 2B
1,4-dioxane	20 ppm	IARC 2B
N,N-dimethylacetamide	10 ppm	Teratogenicity Liver trouble
N-methyl-2-pyrrolidone	–	Not applicable
Xylene	100 ppm	Not applicable

Ethyl benzene	20 ppm	IARC 2B
---------------	--------	---------

Engineering controls :

When handling indoors, to provide a local exhaust ventilation in the work area.

Personal protective measures

Eye protection : Chemical goggles with side shields or face recommended.

Skin protection: Protective clothing (long-sleeved, impervious, conductive), conductive shoes, front cover (solvent resistant)
Protective gloves (impervious, chemical resistant, etc.), etc.

Respiratory protection : A respirator is generally not necessary when using this product outdoors or in large open areas. In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hygienic protection : Wash thoroughly after handling.

SECTION 9 – Physical and Chemical Properties

Physical state	Liquid
Color	Dark gray
Odor	Characteristic
Melting point / Freezing point	No data
Boiling point	101 °C
Flammability	Yes
Explosive limited	Lower limit 0.99 vol% Upper limit 22 vol%
Flash point	14.5 °C
Auto ignition temperature	180 °C
Decomposition temperature	No data
pH	No data
Kinematic viscosity	No data
Solubility	No data
Partition coefficient n-octanol/water	No data
Vapor pressure	3.9 kPa (20°C)
Relative density (water=1)	1.1 (21 °C)
Relative gas density (gas=1)	No data
water solubility	None
Particle Properties	Not applicable

SECTION 10 – Stability and Reactivity

Thermal decomposition / conditions to be avoided:

Product is stable under normal condition. Avoid overheating.

Dangerous reactions:

Strong oxidizers such as hydrogen peroxide.

Dangerous decomposition products:

Carbon monoxide and dioxide from burning.

Hazardous polymerization:

Not applicable

Reactivity with water:

No reaction

SECTION 11 – Toxicological information

Acute toxicity	Oral (LD50)	Dermal (LD50)	Inhalation (LC50/4h)
Molybdenum disulfide	Not classified (>2000 mg/kg)	Not classified (>2000 mg/kg)	Not classified
Diantimony trioxide	Not classified	Not classified	Not classified
1,4-dioxane	Not classified (5170 mg/kg)	5 (2100 mg/kg)	4 (9158ppm)
N,N-dimethylacetamide	Not classified (>5000 mg/kg)	5 (2100 mg/kg)	3 (1100 ppm)
N-methyl-2-pyrrolidone	5 (3500 mg/kg)	Not classified (6000 mg/kg)	Not classified
Xylene	5 (3500 mg/kg)	4 (1700 mg/kg)	4 (6350ppm)
Ethyl benzene	5 (3500 mg/kg)	Not classified (15400 mg/kg)	4 (4000ppm)

	Category	Material
Skin corrosion/irritation	2	N-methyl-2-pyrrolidone, Xylene, 1,4-dioxane
Eye damage/irritation	2	Xylene, N,N-dimethylacetamide
	2A	N-methyl-2-pyrrolidone, 1,4-dioxane
	2B	Ethylbenzene
Sensitization-Respiratory	-	Not applicable
Sensitization-Skin	-	Not applicable
Germ cell mutagenicity	-	Not applicable

Carcinogenicity	1B	Antimony trioxide, 1,4-dioxane, N,N-dimethylacetamide
	2	Ethyl benzene
Toxic to reproduction	1B	N-methyl-2-pyrrolidone, Ethylbenzene, Xylene, N,N-dimethylacetamide
Specific target organ systemic toxicity (Single exposure)	1	1,4-dioxane (central nervous system) N,N-dimethylacetamide (central nervous system, liver) Xylene (respiratory organ, liver, kidney, central nervous system)
	2	Antimony trioxide (respiratory organ)
	3	Respiratory tract irritation: N-methyl-2-pyrrolidone, Ethylbenzene, 1,4-dioxane Narcotic effects: Xylene, 1,4-dioxane, Ethylbenzene, N,N-dimethylacetamide
Specific target organ systemic toxicity (Repeated exposure)	1	Antimony trioxide (respiratory organ) 1,4-dioxane (central nervous system, liver, kidney) N,N-dimethylacetamide (liver, respiratory organ) Xylene (respiratory organ, nervous system) Ethyl benzene (nervous system, auditory organ)
	2	1,4-dioxane (respiratory organ) N-methyl-2-pyrrolidone (liver, bone marrow, lung, nervous system)
Aspiration toxicity	1	Xylene, Ethylbenzene

SECTION 12 – Ecological information

	Category	Material
Hazardous to the aquatic environment-Acute hazard:	1	Ethylbenzene
	2	Xylene
Hazardous to the aquatic environment-Chronic hazard:	2	Xylene, Ethyl benzene
Hazardous to the ozone layer:	-	Not applicable

SECTION 13 – Disposal consideration

Product Recommendation:

Must not be disposed together with household garbage.
Do not allow product to reach sewage system.

Uncleaned packaging Recommendation:

Disposal must be made according to official regulations.

SECTION 14 – Transport information

UN No. : 1263

Description of goods: PAINT

Hazard class: 3, Flammable liquids

Packaging group: II

SECTION 15 – Regulatory information

International Inventories:

TSCA (USA): All ingredients listed
EINECS (EUROPE): All ingredients listed
ENCS (Japan): All ingredients listed
IECSC (China): All ingredients listed
KECL (Korea): All ingredients listed
Taiwan: All ingredients listed
DSL (Canada): All ingredients listed
AICS (Australia): All ingredients listed
ERMA (New Zealand): All ingredients listed

SECTION 16 – Other information

This SDS is an addition and complementary document besides the technical data sheet.
This information is based upon our knowledge about the product at the date of edition.
Since we cannot anticipate or control the different conditions under which this information or our product may be used, we make no guarantee that recommendations will be adequate for all individuals and situations.

SAFETY DATA SHEET

SECTION 1 - Products and company identification	
Product Name or Number	DEFRIC COAT ADX-35 (HMB-2M ADDITIVE)
Manufacture' s Name	KAWAMURA RESEARCH LABORATORIES, INC.
Address	1-5-6, Meguro, Meguro-Ku, TOKYO 153-0063 JAPAN
Emergency Telephone Number	+81-3-3491-6896
Telephone Number	+81-3-3495-2121
Date Prepared	July 1, 2024 (ver.12)
Prepared by	H. Shindo
Recommended use	Lubricant (Additive for solid lubricant paint)
Restrictions on use	Industrial

SECTION 2 - Hazard identification

Hazards symbol and signal word :  DANGER

Physical hazards: Flammable liquids Category 2

Health hazards:

Acute toxicity-Oral	-
Acute toxicity-Dermal	Category 5
Acute toxicity-Inhalation	Category 4
Skin corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2
Sensitization-Respiratory	-
Sensitization-Skin	-
Germ cell mutagenicity	-
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B

Specific target organ systemic toxicity (Single exposure) :

- Category 1 (central nervous system, liver)
- Category 3 (narcotic effects, respiratory tract irritation)

Specific target organ systemic toxicity (Repeated exposure) :

- Category 1 (central nervous system, liver, kidney, respiratory organ)

Aspiration toxicity	-
----------------------------	---

Environmental hazards:

Acute aquatic toxicity	-
Chronic aquatic toxicity	-
Hazardous to the ozone layer	-

Hazard statement:

Highly flammable liquid and vapor.
May be harmful in contact skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to central nervous system, liver.
May cause respiratory irritation.
May cause drowsiness and dizziness.
Causes damage to central nervous system, liver, kidney, respiratory organ through prolonged or repeated exposure.

Prevention:

Keep container tightly closed.
Keep away from ignition sources such as heat, sparks and open flame— No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Do not get in eyes, on skin, or on clothing.
Wear protective gloves/clothing/glass.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Avoid release to the environment.

Response:

For a fire: Extinguish fire by using a powdery fire extinguisher, the fire foam, and carbon dioxide.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Get medical attention/advice.
Wash hands after handling.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs, get medical advice/attention.
Take of contaminated clothing and wash before re-use.
Collect spillage.

Storage/Disposal:

Provide and store a fixed place of 40°C or less where ventilation is good.
Store locked up.
Contents and the container must consign the business to a special waste management trader who obtains the administrative divisions governor's permission.

SECTION 3 - Composition / Information on ingredients

Chemical Name and Condition: Paint of Solid lubricant, Mixture

Hazardous Components	CAS RN	Concentration (%)
Synthetic resin	Trade secret	30-40
1,4-dioxane	123-91-1	40-50
N,N-dimethyl acetamide	127-19-5	10-20

SECTION 4 – First aid measure

Inhalation	Keep the victim warm and quiet. Remove the victim from the contamination immediately to fresh air.
Eye	Immediately flush with water for at least 15 minutes. Get medical attention if eye irritation persists.
Skin	Remove excess with cloth or paper and wash area thoroughly with soap and water.
Ingestion	Consult a physician. Do not induce vomiting.
Note to physicians	Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – Firefighting measures

Suitable extinguishing media	Carbon dioxide, Foam, Water fog, Dry Chemical or Sand.
For safety reasons unsuitable extinguishing media	Water, Water full jet
Firefighting instructions	Dense smoke. Fire fighters wear an approved self-contained breathing apparatus.

SECTION 6 – Accidental release measures

Person-related safety precautions:

Wear protective equipment.
Keep unprotected person away.

Measures for environmental protection:

Prevent seepage into sewage system, work pits and cellars.
Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/ collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Dispose contaminated material as waste according to item 13.
 Ensure adequate ventilation.
 Do not flush with water or aqueous cleansing agents.

Additional information:

Clean contaminated surface thoroughly.

SECTION 7 – Handling and Storage

Handling:

Contact with eyes may cause irritation.
 Use protective glasses or other devices to avoid contact with eyes.
 Contact with skin may cause irritation.
 Use protective gloves to avoid skin contact.
 Do not swallow.
 Wear gloves to avoid injury on hands when opening the container.
 Keep out reach of children.

Storage:

Storage away from fire source or sunlight and in cool dry area.

SECTION 8 – Exposure controls / Personal protection

Hazardous Components	ACGIH TLV	Others
1,4-dioxane	20 ppm	IARC 2B
N,N-dimethylacetamide	10 ppm	Teratogenicity Liver trouble

Engineering controls:

When handling indoors, to provide a local exhaust ventilation in the work area.

Personal protective measures

Eye protection : Chemical goggles with side shields or face recommended.

Skin protection: Protective clothing (long-sleeved, impervious, conductive), conductive shoes, front cover (solvent resistant)
 Protective gloves (impervious, chemical resistant, etc.), etc.

Respiratory protection : A respirator is generally not necessary when using this product outdoors or in large open areas. In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hygienic protection : Wash thoroughly after handling.

SECTION 9 – Physical and Chemical Properties

Physical state	Liquid
Color	Clear yellow
Odor	Characteristic
Melting point / Freezing point	No data
Boiling point	101 °C
Flammability	Yes
Explosive limited	Lower limit 1.8 vol% Upper limit 22 vol%
Flash point	18.2 °C
Auto ignition temperature	180 °C
Decomposition temperature	No data
pH	No data
Kinematic viscosity	No data
Solubility	No data
Partition coefficient n-octanol/water	No data
Vapor pressure	3.9 kPa (20°C)
Relative density (water=1)	1.07 (°C)
Relative gas density (gas=1)	No data
water solubility	None
Particle Properties	Not applicable

SECTION 10 – Stability and Reactivity**Thermal decomposition / conditions to be avoided :**

Product is stable under normal condition. Avoid overheating.

Dangerous reactions :

Strong oxidizers such as hydrogen peroxide.

Dangerous decomposition products :

Carbon monoxide and dioxide from burning.

Hazardous polymerization:

Not applicable

Reactivity with water:

No reaction

SECTION 11 – Toxicological information

Acute toxicity	Oral (LD50)	Dermal (LD50)	Inhalation (LC50/4h)
1,4-dioxane	Not classified (5170 mg/kg)	5 (2100 mg/kg)	4 (9158ppm)
N,N-dimethylacetamide	Not classified (>5000 mg/kg)	5 (2100 mg/kg)	3 (1100 ppm)

	Category	Material
Skin corrosion/irritation	2	1,4-dioxane
Eye damage/irritation	2A	1,4-dioxane
	2B	N,N-dimethyl acetamide
Sensitization-Respiratory	-	Not applicable
Sensitization-Skin	-	Not applicable
Germ cell mutagenicity	-	Not applicable
Carcinogenicity	1B	1,4-dioxane, N,N-dimethyl acetamide
Toxic to reproduction	1B	N,N-dimethyl acetamide
Specific target organ systemic toxicity (Single exposure)	1	1,4-dioxane (central nervous system) N,N-dimethyl acetamide (central nervous system, liver)
	3	Respiratory tract irritation: 1,4-dioxane Narcotic effects: 1,4-dioxane, N,N-dimethyl acetamide
Specific target organ systemic toxicity (Repeated exposure)	1	1,4-dioxane (central nervous system, liver, kidney) N,N-dimethyl acetamide (liver, respiratory organ)
	2	1,4-dioxane (respiratory organ)
Aspiration toxicity	-	Not applicable

SECTION 12 – Ecological information

	Category	Material
Hazardous to the aquatic environment-Acute hazard:	-	Not applicable
Hazardous to the aquatic environment-Chronic hazard:	-	Not applicable
Hazardous to the ozone layer:	-	Not applicable

SECTION 13 – Disposal consideration

Product Recommendation:

Must not be disposed together with household garbage.
Do not allow product to reach sewage system.

Uncleaned packaging Recommendation:

Disposal must be made according to official regulations.

SECTION 14 – Transport information

UN No. : 1263

Description of goods: PAINT

Hazard class: 3, Flammable liquids

Packaging group: II

SECTION 15 – Regulatory information**International Inventories:**

TSCA (USA): All ingredients listed

EINECS (EUROPE): All ingredients listed

ENCS (Japan): All ingredients listed

IECSC (China): All ingredients listed

KECL (Korea): All ingredients listed

Taiwan: All ingredients listed

DSL (Canada): All ingredients listed

AICS (Australia): All ingredients listed

ERMA (New Zealand): All ingredients listed

SECTION 16 – Other information

This SDS is an addition and complementary document besides the technical data sheet.

This information is based upon our knowledge about the product at the date of edition.

Since we cannot anticipate or control the different conditions under which this information or our product may be used, we make no guarantee that recommendations will be adequate for all individuals and situations.

Product Safety Data Sheet

1. Product and Company Information

- **Product Name:** PK-4860
- **Company Name:** Parker Corporation Co., Ltd.
- **Address:** 2-22-1 Nihonbashi Ningyocho, Chuo-ku, Tokyo
- **Department in Charge:** Technical Headquarters, Technical Management Section
- **Phone Number:** 03-5634-8491
- **Fax Number:** 03-5634-8495

2. Summary of Hazards

GHS Classification:

- **Physical and Chemical Hazards:**
 - Self-heating chemicals: Not classified
 - Water-reactive flammable chemicals: Not classified
- **Health Hazards:**
 - Acute toxicity (oral): Category 4
 - Skin corrosion/irritation: Category 1B
 - Serious eye damage/eye irritation: Category 1
 - Respiratory sensitization: Not classified
 - Skin sensitization: Not classified
 - Germ cell mutagenicity: Not classified
 - Carcinogenicity: Not classified
 - Reproductive toxicity: Not classified
 - Specific target organ toxicity (single exposure): Category 1 (respiratory system)
 - Aspiration hazard: Not classified
- **Environmental Hazards:**
 - Acute aquatic toxicity: Category 3
 - Chronic aquatic toxicity: Not classified

GHS Label Elements

- **Signal Word:** Danger

- **Hazard Statements:**

- Harmful if swallowed
- Causes severe skin burns and eye damage
- May cause respiratory damage
- Harmful to aquatic life

- **Precautionary Statements:**

- **Prevention:**

- Do not inhale mist, vapor, or spray.
- Avoid release to the environment.
- Do not eat, drink, or smoke while using this product.
- Wash hands thoroughly after handling.
- Wear protective gloves, goggles, face shield, and protective clothing.

- **Response:**

- **If inhaled:** Move to fresh air and rest in a comfortable position.
- **If swallowed:** Rinse mouth. Do not induce vomiting. Contact a physician if feeling unwell.
- **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses if easy to do. Continue rinsing.
- **If on skin or hair:** Immediately remove contaminated clothing and rinse skin with water or shower. Wash contaminated clothing before reuse.

- **Storage:** Store locked up.

- **Disposal:** Dispose of contents and containers through a licensed waste disposal contractor.

3. Composition and Ingredients

- **Classification:** Mixture
- **Type:** Industrial water-based cleaning agent

Notified Components:

- **Potassium Hydroxide (KOH):**

- Content: 1–5%
- Chemical Formula: KOH
- CAS No.: 1310-58-3

Other Components: Silicates, phosphates, chelating agents, surfactants, water

4. First Aid Measures

- **If inhaled:** Move to fresh air and rest. Seek medical attention if feeling unwell.
- **If on skin:** Remove contaminated clothing and wash affected area with water or lukewarm water, then soap. Seek medical attention.
- **If in eyes:** Rinse with clean water for at least 15 minutes, including under eyelids. Seek immediate medical attention.
- **If swallowed:** Drink 1–2 glasses of water and rest. Seek immediate medical attention. Do not give anything orally to an unconscious person.

5. Firefighting Measures

- **Extinguishing Media:** Carbon dioxide, foam, powder, dry sand, water spray (for surrounding fires).
- **Specific Firefighting Methods:** Fight fire from upwind. Move containers to a safe location if possible. Evacuate non-essential personnel.
- **Protective Equipment:** Wear appropriate protective gear (gloves, goggles, mask, etc.).

6. Measures for Accidental Release

- **Precautions for Personnel:** Wear appropriate protective gear (gloves, mask, apron, goggles, etc.).
- **Environmental Precautions:** Prevent product from entering rivers or other water sources.
- **Containment and Cleanup:**
 - For small spills: Absorb with dry sand or cloth and collect in a sealed container.
 - For large spills: Surround with soil to prevent spreading and guide to a safe location for treatment.
- **Secondary Disaster Prevention:** Rope off the area and restrict access.

7. Handling and Storage

- **Handling:**
 - Wear appropriate protective gear to avoid contact with skin, mucous membranes, or eyes.
 - Ensure good ventilation.
 - Wash hands, face, and rinse mouth after handling.
- **Storage:**
 - Avoid direct sunlight and store in a well-ventilated area.
 - Use containers suitable for the product.

8. Exposure Controls and Personal Protection

- **Equipment Measures:** Install local exhaust systems if mist or vapor is generated. Provide facilities for eye and body washing near the handling area.
- **Permissible Concentrations:**
 - Japan Society for Occupational Health: 2 mg/m³ (Potassium Hydroxide)
 - ACGIH: TLV-TWA 2 mg/m³ (Potassium Hydroxide)
- **Protective Equipment:**
 - Respiratory protection: Protective mask
 - Hand protection: Protective gloves
 - Eye protection: Protective goggles
 - Skin/body protection: Protective clothing (long sleeves, apron, boots)

9. Physical and Chemical Properties

- **Appearance:** Liquid
- **Color:** Pale yellow to pale brown
- **Odor:** Slight characteristic odor
- **pH:** Approx. 11.7 (1% aqueous solution, 25°C)
- **Specific Gravity:** Approx. 1.25 (original solution, 25°C)
- **Solubility:** Soluble in water

10. Stability and Reactivity

- **Stability:** Stable under normal handling conditions.
- **Hazardous Reactions:** Reacts with acids, generating neutralization heat.
- **Avoidable Conditions:** Contact with incompatible substances.
- **Incompatible Materials:** Acidic substances.

11. Toxicological Information

- **Acute Toxicity (Oral):** Harmful if swallowed (Category 4).
- **Skin Corrosion/Irritation:** Causes severe skin burns (Category 1).
- **Serious Eye Damage/Irritation:** Causes severe eye damage (Category 1).

12. Environmental Impact Information

- **Acute Aquatic Toxicity:** Harmful

Safety Data Sheet (SDS) - Sumimold F1

1. Product and Company Information

Product Name: Sumimold F1

Reference Number: 5706

Company: Sumico Lubricants Co., Ltd.

Address: 5-11-3 Shimbashi, Minato-ku, Tokyo 105-0004, Japan

Phone: 0120-954-528

Fax: 03-5401-0471

Email: Lub_SUMICO@smm-g.com

Recommended Use: Mold release and sliding agent

Restrictions: Consult a chemical specialist for non-recommended uses.

2. Hazard Summary

GHS Classification:

- Aerosol: Category 1
- Flammable Liquid: Category 2
- Skin Corrosion/Irritation: Category 2
- Reproductive Toxicity: Category 2
- Specific Target Organ Toxicity (Single Exposure): Category 3
- Specific Target Organ Toxicity (Repeated Exposure): Category 1

Label Elements:

- Pictograms: Flame, Exclamation Mark, Health Hazard
- Signal Word: Danger
- Hazard Statements:
 - Extremely flammable aerosol
 - Pressurized container may burst when heated

- May cause skin irritation
- Suspected of damaging fertility or the unborn child
- May harm breastfed children
- May cause respiratory irritation, drowsiness, or dizziness
- May cause organ damage through prolonged or repeated exposure

3. Composition / Ingredients

Type: Mixture

Main Ingredients:

- Butane (CAS 106-97-8): 55–65%
- Propane (CAS 74-98-6): 10–20%
- Isohexane (CAS 101316-67-0): 20–30%
- n-Hexane (CAS 110-54-3): 1–5%

4. First Aid Measures

Inhalation: Move to fresh air, keep warm and at rest, seek medical attention if needed.

Skin Contact: Wash with plenty of water and soap. Seek medical attention if irritation occurs.

Eye Contact: Rinse thoroughly with clean water for at least 15 minutes. Seek medical attention.

Ingestion: Do not induce vomiting. Rinse mouth and seek medical attention.

5. Firefighting Measures

Extinguishing Media: Powder, CO₂, foam, dry sand

Do Not Use: Water

Firefighting Instructions: Remove flammable materials, use extinguishing agents from upwind, cool sealed containers with water.

6. Accidental Release Measures

Wear protective gear (gloves, mask, apron, goggles).

Prevent environmental contamination.

Remove ignition sources.

Use non-sparking tools.

Absorb with dry sand or non-combustible material.

Collect in sealed containers and dispose according to regulations.

7. Handling and Storage

Handling:

- Use in well-ventilated areas.
- Avoid fire, sparks, and high temperatures.
- Ground equipment to prevent static.
- Wash hands and face after handling.
- Use protective equipment.
- Do not use continuously for more than 30 seconds.

Storage:

- Avoid direct sunlight and temperatures above 40°C.
- Store in a cool, dry, ventilated place.
- Avoid moisture to prevent container corrosion.

8. Exposure Controls / Personal Protection

Engineering Controls: Use explosion-proof equipment and local exhaust ventilation.

Protective Equipment:

- Respirator: Organic vapor mask
- Gloves: Solvent-resistant
- Eye Protection: Safety glasses or goggles
- Clothing: Long-sleeved workwear

Hygiene: No eating, drinking, or smoking during use.

9. Physical and Chemical Properties

Appearance: Colorless to pale yellow transparent liquid

Odor: Solvent-like

Flash Point: -30°C

Density: 0.67 g/cm³

Water Solubility: Poor

Other data: Not available

10. Stability and Reactivity

Stability: Stable under normal conditions

Reactivity: No self-reactivity

Avoid: Fire, oxidizers, alkali metals

Hazardous Decomposition: CO, HF, COF₃

11–12. Toxicological and Environmental Information

Various ingredients show potential for:

- Narcotic effects
- Respiratory irritation
- Reproductive toxicity
- Organ damage from repeated exposure

n-Hexane is identified as a priority chemical with potential environmental impact.

13. Disposal Considerations

Dispose of waste through licensed industrial waste contractors.

Do not discharge into soil or drains.

Follow laws for incineration and special waste handling.

14. Transport Information

Domestic Regulations: Comply with Fire Service Act, Industrial Safety and Health Act

International Regulations:

- UN Number: 1950
- Class: 2.1 (Flammable Gas – Aerosol)

15. Regulatory Information

Subject to various Japanese laws including:

- Fire Service Act

- Industrial Safety and Health Act
- PRTR Law
- Waste Disposal Law

16. Other Information

Based on available data as of the revision date.

Subject to updates with new information.

Safety precautions are for standard handling; special uses may require additional measures.

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : MB-802
 SUPPLIER
 NAME : Sanyo Chemical Industries, Ltd.
 ADDRESS : 11-1, Ikkyo Nomoto-cho, Higashiyama-ku, Kyoto 605-0995, Japan
 DEPARTMENT : Products Evaluation Dept.
 TELEPHONE NUMBER (INFORMATION) : +81-(0)3-3500-3413(Tokyo office)
 FAX NUMBER (INFORMATION) : +81-(0)3-3500-3415(Tokyo office)
 EMERGENCY TELEPHONE NUMBER : +81-(0)75-541-4330
 SDS No. : 057360206-1

2. HAZARD IDENTIFICATION (Follow all regulation in your country.)

GHS CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

PHYSICAL HAZARDS

FLAMMABLE LIQUID : Category 4

HEALTH HAZARDS

ACUTE TOXICITY (ORAL) : Classification not possible

ACUTE TOXICITY (SKIN) : Classification not possible

ACUTE TOXICITY (INHALATION: GAS) : No classification

ACUTE TOXICITY (INHALATION: VAPOR) : Classification not possible

ACUTE TOXICITY (INHALATION: DUST, MIST) : Classification not possible

SKIN CORROSION / IRRITATION : Classification not possible

SERIOUS EYE DAMAGES / EYE IRRITATION : Classification not possible

RESPIRATORY SENSITIZATION : Classification not possible

SKIN SENSITIZATION : Classification not possible

GERM CELL MUTAGENICITY : Classification not possible

CARCINOGENICITY : Classification not possible

REPRODUCTIVE TOXICITY : Classification not possible

SPECIFIC TARGET ORGAN TOXICITY;
SINGLE EXPOSURE : Classification not possible

SPECIFIC TARGET ORGAN TOXICITY;
REPEATED EXPOSURE : Classification not possible

ASPIRATION HAZARD : Classification not possible

ENVIRONMENTAL HAZARDS

SHORT-TERM (ACUTE) AQUATIC HAZARDS : Classification not possible

LONG-TERM (CHRONIC) AQUATIC HAZARDS : Classification not possible

HAZARDOUS TO THE OZONE LAYER : Classification not possible

GHS LABEL ELEMENTS INCLUDING PRECAUTIONARY STATEMENTS

SYMBOL	-
SIGNAL WORD	Warning
HAZARD STATEMENT	: ·Combustible liquid.
PRECAUTIONARY STATEMENTS	
[PREVENTION]	·Do not handle until "SAFETY DATA SHEETS" has been read and understood well. ·Keep away from flames and heat. ·Avoid inhaling, swallowing, contact with eyes and skin. Wear safety glasses, gloves and face protection. ·Wash hands and face thoroughly and rinse mouth after handling.
[RESPONSE]	·IN CASE OF FIRE : Use carbon dioxide, dry chemical powder and foam for extinction. ·IN CASE OF MAJOR FIRE : Use foam and a large amount of water fog to extinguish. ·IF SWALLOWED : Rinse mouth. Do NOT induce vomiting. ·IF INHALED : Remove to fresh air and keep at rest in a position comfortable for breathing. ·IF ON SKIN : Wash with plenty of soap and water. ·IF IN EYES : Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. ·IF EXPOSED OR CONCERNED : Get medical advice/attention.
[STORAGE]	·Keep container tightly closed and store in a well-ventilated place.
[DISPOSAL]	·Dispose of contents/container in accordance with national and regional regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS (The contents are representative values.)

SUBSTANCE/MIXTURE : Substance

COMMON NAME(S),SYNONYM(S) OF THE SUBSTANCE

: Polyether

UNIQUE IDENTIFIERS FOR THE SUBSTANCE

: Proprietary

COMPONENTS AND CONTENTS

: -

COMPONENTS WHICH CONTRIBUTE TO THE CLASSIFICATION OF THE SUBSTANCE AND HAZARDOUS INGREDIENT (S) - JAPANESE REGULATION-

Wt.%

: -

4. FIRST AID MEASURES

IF INHALED	: ·Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention, if you are experiencing respiratory symptoms.
IF ON SKIN	: ·Wipe with the soft paper or the cloth, etc. Wash with plenty of soap and water. Get medical advice/attention, if necessary.
IF IN EYES	: ·Rinse cautiously for 15 minutes or more. Get medical advice/attention immediately.

MB-802, Sanyo Chemical Industries, Ltd., SDS No.057360206-1

Date revised : August 30, 2024

IF SWALLOWED : •After rinsing mouth immediately, give ca. 250ml of milk or water. Get medical advice/attention immediately. Do not induce vomiting.
•Do not give anything by mouth to the victim when not conscious.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water fog

UNSUITABLE EXTINGUISHING MEDIA : Water jet

SPECIFIC EXTINGUISHING METHOD

- : •Eliminate all ignition sources, and use suitable extinguishing media.
- Spray water on the surrounding equipment for cooling.

SPECIAL PROTECTIVE ACTION FOR FIRE- FIGHTERS

- : •Extinguish from the windward to prevent poisonous gas from being inhaled.
 - Appropriate protective equipment (gloves, glasses, and mask) must be worn.
-

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

- : •Wear appropriate protective equipment (gloves, safety goggle, etc.).
- The spilled area is slippery.

ENVIRONMENTAL PRECAUTIONS

- : •Do not allow spillage out into the environment causing pollution e.g., rivers, waterways.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

- : •Keep away from ignition sources.
 - Contain spillage by making on embankment of earth, sand, etc., and collect into container(s) by shoveling or vacuuming.
 - In case of small spillage, absorb with sand, sawdust, etc.
 - In case of very small spillage, wipe clean with the rag, etc.
-

7. HANDLING AND STORAGE

HANDLING

TECHNICAL MEASURES

- : •Handle in a well-ventilated area. Wear safety glasses, gloves and face protection, etc. Avoid direct contact.
- Set local exhaust or general ventilation of as described in chapter "8. EXPOSURE CONTROLS/PERSONAL PROTECTION".

PRECAUTIONS FOR SAFE HANDLING

- : •Wash hands and face thoroughly and rinse mouth after handling.
- In case to wash work clothes, gloves, shoes, etc. contaminated with the product, avoid contact with clothes.

CONTACT AVOIDANCE

- : •Avoid contact with strong oxidizing agents, etc.
- Keep fire away.

STORAGE

CONDITIONS FOR SAFE STORAGE

- : •Keep container tightly closed and store in a well-ventilated place.
- Set up a Keep Fire Away-No Visitors sign.

PACKAGING MATERIAL

: •Store in original containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

ACGIH : Not established

(1)

APPROPRIATE ENGINEERING CONTROLS

- : •Establish the adequate local exhauster if vapor, dust or mist occurs.
- Establish eye washing and body washing facilities near the work areas.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION : •Not required under normal conditions.

HAND PROTECTION : •Impervious gloves

EYE/FACE PROTECTION : •Safety glasses with side-guard (Wear safety goggle or face protection, if necessary)

SKIN AND BODY PROTECTION : •Appropriate protective equipment (e.g. impermeable gloves, protective boots, etc.)

9. PHYSICAL AND CHEMICAL PROPERTIES (representative values)

APPEARANCE (at 20°C)

PHYSICAL STATE : Liquid

COLOR : Pale yellow

ODOR : Slightly specific odor

MELTING POINT/FREEZING POINT

: (Pour point)Below -10°C (14°F)

BOILING POINT OR INITIAL BOILING POINT AND BOILING RANGE

: No data

FLAMMABILITY : No data

LOWER AND UPPER EXPLOSION LIMIT /FLAMMABILITY LIMIT

: No data

FLASH POINT : 80°C (176°F) (Tag C.C.)

AUTO-IGNITION TEMPERATURE

: No data

DECOMPOSITION TEMPERATURE

: No data

pH : 7.0 (14% water/isopropyl alcohol solution)

KINEMATIC VISCOSITY : 5mm²/s(at 25°C)

SOLUBILITY

WATER SOLUBILITY : Soluble

SOLUBLE SOLVENT : Methanol, Isopropyl alcohol, Acetone, Toluene...Soluble

PARTITION COEFFICIENT N-OCTANOL/WATER (LOG VALUE)

: No data

VAPOUR PRESSURE : No data

DENSITY AND/OR RELATIVE DENSITY

: 0.95(at 20°C)(Specific gravity)

RELATIVE VAPOUR DENSITY

: No data

PARTICLE CHARACTERISTICS

: No data

10. STABILITY AND REACTIVITY

REACTIVITY : No data
 CHEMICAL STABILITY : Stable under normal conditions.
 POSSIBILITY OF HAZARDOUS REACTIONS : Reacts with strong oxidizing agents, etc.
 CONDITION TO AVOID : No data
 INCOMPATIBLE MATERIALS : Strong oxidizing agents, etc.
 HAZARDOUS DECOMPOSITION PRODUCTS : No data
 OTHERS : No data

11. TOXICOLOGICAL INFORMATION (DATA for this product or similar product.)

ACUTE TOXICITY [ORAL] : Classification not possible
 No data
 ACUTE TOXICITY [SKIN] : Classification not possible
 No data
 ACUTE TOXICITY [INHALATION: GAS] : No classification
 Not classified by the GHS definition of gas.
 ACUTE TOXICITY [INHALATION: VAPOR] : Classification not possible
 No data
 ACUTE TOXICITY [INHALATION: DUST, MIST] : Classification not possible
 No data
 SKIN CORROSION / IRRITATION : Classification not possible
 (reference) May cause skin irritation. Repeated skin contact may cause irritation.
 SERIOUS EYE DAMAGE/EYE IRRITATION : Classification not possible
 (reference) May cause eye irritation.
 RESPIRATORY SENSITIZATION : Classification not possible
 No data
 SKIN SENSITIZATION : Classification not possible
 No data
 GERM CELL MUTAGENICITY : Classification not possible
 No data
 CARCINOGENICITY : Classification not possible
 No data
 REPRODUCTIVE TOXICITY : Classification not possible
 No data
 SPECIFIC TARGET ORGAN TOXICITY -SINGLE EXPOSURE : Classification not possible
 No data
 SPECIFIC TARGET ORGAN TOXICITY -REPEATED EXPOSURE : Classification not possible
 No data
 ASPIRATION HAZARD : Classification not possible
 No data

12. ECOLOGICAL INFORMATION (DATA for this product or similar product.)

SHORT-TERM (ACUTE) AQUATIC HAZARDS : Classification not possible
 ECOTOXICITY : No data

MB-802, Sanyo Chemical Industries, Ltd., SDS No.057360206-1

Date revised : August 30, 2024

LONT-TERM (CHRONIC) AQUATIC HAZARDS : Classification not possible
 PERSISTENCE AND DEGRADABILITY
 : No data
 BIOACCUMULATION POTENTIAL
 : No data
 MOBILITY IN SOIL
 : No data
 OTHER DATA : No data
 HAZARDOUS TO THE OZONE LAYER : Classification not possible
 No data

13. DISPOSAL CONSIDERATIONS

•Dispose of contents/container in accordance with national and regional regulations.

14. TRANSPORT INFORMATION

UN NUMBER : Not applicable
 PROPER SHIPPING NAME : Not applicable
 UN CLASS : Not applicable
 PACKING GROUP : -
 ENVIRONMENTAL HAZARDS : Not applicable
 INTERNATIONAL REGULATIONS
 LAND : Transport in accordance with national and regional regulations (RID, ADR, DOT, etc.)
 SEA : Transport in accordance with IMDG Code.
 AIR : Transport in accordance with ICAO-TI/IATA-DGR.
 EMERGENCY RESPONSE GUIDELINE NUMBER : 171

15. REGULATORY INFORMATION

INTERNATIONAL REGULATIONS

UNITED STATES INVENTORY (TSCA 8B)

: All components are listed or authorized to exempt from registration.

CANADA INVENTORY (DSL)

: All components are listed or authorized to exempt from registration.

AUSTRALIA INVENTORY (AIIC)

: All components are listed or authorized to exempt from registration.

CHINA INVENTORY (IECSC)

: All components are listed or authorized to exempt from registration.

JAPAN INVENTORY (ENCS)

: All components are listed or authorized to exempt from registration.

PHILIPPINES INVENTORY (PICCS)

: All components are listed or authorized to exempt from registration.

KOREA INVENTORY (ECL)

: All components are listed or authorized to exempt from registration.

MB-802, Sanyo Chemical Industries, Ltd., SDS No.057360206-1

Date revised : August 30, 2024

16. OTHER INFORMATION

REFERENCES

- (1) TLVs and BEIs, ACGIH, 2023

* All specifications which were created based on the information which was available at the time and may be revised at anytime according to new information.

* To the best of our knowledge, the information contained herein is accurate. However, Sanyo Chemical Industries, Ltd. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown health hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

CONTACT

COMPANY : Sanyo Chemical Industries, Ltd.

DEPARTMENT : Sales Department

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

1. Identification of the substance/mixture and of the company/undertaking

Product name: MG-RC74
 Company name: PARKER CORPORATION
 Address: 2-22-1, Nihonbashi-ningyocho, Chuo-ku, Tokyo, Japan
 Charge section: Technology Administration Dept.
 (TEL:+81-3-5634-8491,FAX:+81-3-5634-8495)

2. Hazards identification

Hazard category	[Category]
Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 3
Acute toxicity (vapour)	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ systemic toxicity following single exposure	Category 1
Specific target organ systemic toxicity following repeated exposure	Category 1
Acute hazards to the aquatic environment	Category 3

Label elements

Hazard pictograms:



Signal word: **Danger**

Hazard statements:
 Harmful if swallowed.
 Toxic in contact with skin.
 Toxic if inhaled.
 Causes severe skin burns and eye damage.
 Causes serious eye damage.
 Causes damage to organs (respiratory apparatus).
 Causes damage to organs (respiratory apparatus) through prolonged or repeated exposure.
 Harmful to aquatic life

Precautionary statements:

Prevention Avoid release to the environment.
 Do not breathe in dust, fumes, gas, mist, vapours and spray.
 Wash hands and face well after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Wear protective gloves/protective clothing/eye protection/face protection.
Wear protective gloves.
Wear protective glasses.
Wear protective clothing.

Response IF SWALLOWED: Call a doctor. If you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty water.

IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a doctor.

Special treatment is required.

Rinse mouth.

Take off immediately all contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

Storage Store in a well ventilated place. Keep container tightly closed.

Store locked up.

Disposal Dispose of contents/containers through a disposal agent licensed by a prefectural governor.

3. Composition/information on ingredients

3.1. Substances Not Applicable

3.2. Mixtures

Ingredients and Concentration

Ingredient Name	Content wt.%	CAS RN
Morpholine	36	110-91-8
1-(2-Methoxy-2-methylethoxy)-2-propanole	1-10	34590-94-8
Organic alkali	Confidential	Confidential
Chelating agent	Confidential	Confidential
Pure water	Confidential	7732-18-5

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

4. First-aid measures

Inhalation:	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, loosen clothing, keep airway open, and perform artificial respiration. If the victim is vomiting, turn the head to the side so that the vomit is not ingested. Do not leave the victim alone.</p> <p>Immediately call a doctor. May irritate the throat. Do not induce vomiting.</p>
Skin contact:	<p>Immediately call a doctor.</p> <p>Do not use soap as the product is alkaline. Wash the affected area under plenty of running water, lukewarm water or dilute acetic acid (0.5–2%) until the skin irritation or soapy feeling disappears.</p> <p>IF ON SKIN or hair, take off immediately all contaminated clothing. Rinse skin with water or shower. Wash skin with running water or shower. Take off immediately all contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse.</p>
Eye contact:	<p>Rinse carefully with water for several minutes. Remove contact lenses, if easy to do so. Continue rinsing. Immediately call a doctor.</p>
Ingestion:	<p>Immediately call a doctor. IF SWALLOWED: Call a doctor. If you feel unwell. Rinse mouth.</p>
Protection for first aid person:	<p>Wear protective gear listed in Section 8 'Exposure control and personal protection'.</p> <p>Ventilate if there are gas, vapours, mist or dust present.</p>

5. Fire-fighting measures

Suitable extinguishing media:	This product is not combustible.
Extinguishing media to avoid:	No information.
Specific hazards arising from the chemical:	No information.
Precautions for fire-fighters:	No information.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	During operation, wear protective equipment described in Section 8 : Exposure control/Personal protection, avoid contact with eyes and skin, and avoid breathing gas, dust and fumes.
--	---

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Environmental precautions:	<p>Prevent a secondary disaster by prohibiting entry to the area and preventing people from entering unnecessarily.</p> <p>If indoors, ensure good ventilation, and avoid breathing gas, vapors, mist and dust. If outdoors, work upwind and move away people who are downwind.</p> <p>Wear protective gear and take measures in accordance with 'Standards for Emergency Measures in Case of Accident in Transport of Poisonous and Deleterious Substances'</p> <p>If it leaks outside the place of business and may cause harm to the general public, immediately inform Health Centers, police and the Fire Brigade.</p> <p>Do not release into the environment unless unavoidable.</p> <p>If waste water treatment equipment is installed, contact the person responsible for waste water treatment and take measures to prevent release into the environment of waste water containing a large amount of the leaked product.</p>
Methods and materials for containment and cleaning up:	<p>May cause harmful effects to aquatic life. Retrieve leaked substances to prevent them flowing into sewage and waterways.</p> <p>Retrieve leaked substances and put in a sealable container, and transfer to a safe place. Handle adhering substances and waste material in accordance with relevant regulations.</p> <p>In case of a small spill, retrieve spilled material using absorbent such as sawdust, soil, sand, waste cotton, and wipe off remaining product with waste cotton/rag.</p>
Prevention of second accident:	<p>In case of a large spill, use sand/dirt to stop it from flowing away, retrieve using a spade or vacuum cleaner and put in an empty container.</p> <p>Put the retrieved product in a container that can be sealed.</p> <p>The product is alkaline. Neutralize with an acid (acetic acid, dilute hydrochloric acid).</p> <p>Prevent a secondary disaster by prohibiting entry to the area and preventing people from entering unnecessarily.</p> <p>Contact the relevant divisions (safety, sanitation, environment, disaster prevention) and take appropriate measures.</p>

7. Handling and storage

Handling

Technical measures:	<p>Wash hands and face well after handling.</p> <p>Use only outdoors or in a well-ventilated area.</p> <p>Do not get in eyes, on skin, or on clothing.</p> <p>Install eye and body washing equipment for emergency use in the vicinity.</p> <p>Avoid rough handling, such as tipping over, dropping, subjecting to shock and dragging containers.</p> <p>Wear protective gear when handling and take necessary steps (exhaust/ventilation equipment) to avoid exposure as specified in Section 8. Exposure Control and Personal Protection. Ensure that the workplace is well-ventilated.</p>
Ventilation requirements:	<p>Install ventilation equipment specified in Section 8. Exposure Control and Personal Protection when handling.</p>

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Precautions for safe handling:

Use this Safety Data Sheet (SDS) to assess risk, and based on the results, decide and observe appropriate handling methods.
Install equipment to prevent contact with skin, clothing, mucous membrane and eyes, or wear protective equipment to prevent exposure.
Wash face and hands after handling. Do not bring a contaminated protective equipment into the resting or eating area.

Do not breathe in dust, fumes, gas, mist, vapours and spray.
Wash hands and face well after handling.
Do not eat, drink or smoke when using this product.

Contact avoidance:

Refer to mixed dangerous substances on section 10, Stability and reactivity.

Storage

Storage conditions:

Store in a well ventilated place. Keep container tightly closed.
Store locked up.

Safety adequate container materials:

The product is alkaline. Do not store together with acidic substances.
Do not transfer to a food/beverage container.

If transferring to a different container, the new container must be labeled in accordance with the law.
Use a container that meets the standards specified in 'Standards for Transport Containers for Poisonous and Deleterious Substances'
Use the product container or a container with the equivalent strength.

8. Exposure controls/personal protection

Appropriate engineering controls:

Contains an ingredient with specified permissible concentration. Install exhaust equipment and ensure proper ventilation to keep below the permissible concentration.

Install hand wash and face wash facilities near the workplace, and wash hands and face after handling.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Occupational Exposure Limits

Ingredient Name	Japan Society for Occupational Health	ACGIH	
	Occupational Exposure Limits	TWA	STEL/C
Morpholine	---	20ppmSkin,	---
1-(2-Methoxy-2-methylethoxy)-2-propanole	---	100ppmSkin,	150ppmSkin,
Organic alkali	---	---	---
Chelating agent	---	---	---
Pure water	---	---	---

Personal protective equipment

- Respiratory protection: Wear an appropriate respirator mask.
- Hand protection: Wear protective gloves/protective clothing/eye protection/face protection.
Wear protective gloves made of appropriate materials to prevent permeation/penetration of chemical.
Contains an ingredient that may be absorbed through skin. Wear chemical-resistant protective gloves.
- Eye/face protection: Wear protective gloves/protective clothing/eye protection/face protection.
Wear appropriate protective goggles. Wear goggles or a face shield as necessary.
- Skin/body protection: Wear protective gloves/protective clothing/eye protection/face protection.
Wear proper protective clothing to avoid direct skin contact. Wear chemical-resistant protective clothing.
Wear appropriate protective equipment.

9. Physical and chemical properties

Product

- Physical state: Liquid
- Color: Colorless – pale yellow
- Odor: Present
- Melting point/freezing point: No data.
- Initial boiling point and boiling range: No data
- Flammability (solid, gas): No data
- Upper/lower flammability or explosive limits: No data.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Flash point:	None
Auto-ignition temperature:	No data.
Decomposition temperature:	No data
pH:	Approx.11.8 (Undiluted solution, 25°C)
Kinematic viscosity:	No data
Solubility:	water: Soluble.
Partition coefficient: n-octanol/water:	No data.
Vapour pressure:	No data.
Specific Gravity (Density g/cm ³):	Approx.1.03(25°C)
Vapour density:	No data.
Particle characteristics:	No data

10. Stability and reactivity

Reactivity:	No information.
Chemical stability:	Stable under ordinary handling conditions.
Possibility of hazardous reactions:	This product reacts with acidic substances to generate heat of neutralization.
Conditions to avoid:	Contact with an incompatible materials.
Incompatible materials:	Acidic substance
Hazardous decomposition products:	No information.

11. Toxicological information

Product

Acute toxicity (oral):	Category 4
Acute toxicity (dermal):	Category 3
Acute toxicity (inhalation):	Classification not possible (Gas) Category 3 (Vapour) Classification not possible (Dust/Mist)
Skin corrosion/irritation:	Category 1
Serious eye damage/irritation:	Category 1
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Category 1(respiratory apparatus)
Target organ effect/Multi exposure:	Category 1(respiratory apparatus)
Respiratory toxic:	Classification not possible

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Other information:	No data
Ingredient	
Morpholine	
Acute toxicity (oral):	Category 4 LD50: 1050–1900 mg/kg[rat]
Acute toxicity (dermal):	Category 3 LD50: 310–810 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Category 3 (Vapour) LC50: 7.8–8.2 mg/L[rat], LC50:> 8000 ppm[rat] Classification not possible (Dust/Mist)
Skin corrosion/irritation:	Category 1 Effect on person : No relevant information found, Effect on animals : No relevant information found
Serious eye damage/irritation:	Category 1 Effect on person : No relevant information found, Effect on animals : No relevant information found
Respiratory sensitization:	Classification not possible Effect on person : No relevant information found
Skin sensitization:	Classification not possible Effect on animals : No relevant information found
Mutagenicity:	Classification not possible symptoms: Not classified.
Carcinogenicity:	Classification not possible IARC:3, ACGIH:A4
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Category 1(respiratory apparatus)
Target organ effect/Multi exposure:	Category 1(respiratory apparatus)
Respiratory toxic:	Classification not possible Effect on person : No relevant information found
1-(2-Methoxy-2-methylethoxy)-2-propanole	
Acute toxicity (oral):	No Classification LD50: 5180–5400 mg/kg[rat], LD50: 5.35 g/kg[rat]
Acute toxicity (dermal):	No Classification LD50:>= 9500 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Classification not possible (Vapour) LC50:>= 4.1 mg/L[rat] Classification not possible (Dust/Mist)
Skin corrosion/irritation:	No Classification Effect on person : No relevant information found, Effect on animals : No relevant information found
Serious eye damage/irritation:	Category 2B Effect on animals : No relevant information found

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Respiratory sensitization:	Classification not possible Effect on person : No relevant information found
Skin sensitization:	No Classification Effect on person : No relevant information found
Mutagenicity:	Classification not possible symptoms: Not classified.
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Category 3 (anesthetic action, respiratory tract irritation)
Target organ effect/Multi exposure:	No Classification
Respiratory toxic:	Classification not possible Effect on person : No relevant information found
Organic alkali	
No data	
Chelating agent	
Acute toxicity (oral):	No Classification LD50: > 2000 mg/kg [rat]
Acute toxicity (dermal):	Classification not possible Effect on animals : No relevant information found
Acute toxicity (inhalation):	Exempt classification (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist) Effect on animals : No relevant information found
Skin corrosion/irritation:	No Classification Mild [rabbit] Effect on animals : No relevant information found
Serious eye damage/irritation:	Category 2B Mild [rabbit] Effect on animals : No relevant information found
Respiratory sensitization:	Classification not possible Effect on person : No relevant information found
Skin sensitization:	Classification not possible Effect on person : No relevant information found
Mutagenicity:	No Classification symptoms: Negative
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Category 2
Target organ effect/Single exposure:	Classification not possible
Target organ effect/Multi exposure:	Category 1 (kidney)
Respiratory toxic:	Classification not possible Effect on person : No relevant information found
Pure water	
Acute toxicity (oral):	No Classification
Acute toxicity (dermal):	No Classification
Acute toxicity (inhalation):	No Classification (Gas) No Classification (Vapour) No Classification (Dust/Mist)
Skin corrosion/irritation:	Classification not possible

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Serious eye damage/irritation:	Classification not possible
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Classification not possible
Target organ effect/Multi exposure:	Classification not possible
Respiratory toxic:	Classification not possible

12. Ecological information

Product

Ecotoxicity	
Acute toxicity:	Category 3
Chronic toxicity:	Classification not possible
Persistence and degradability:	No information.
Bioaccumulative potential:	No information.
Mobility in soil:	No information.
Hazardous to the ozone layer:	Classification not possible
Other impact:	1%-COD: 1000ppm / BOD: 150ppm

Ingredient

Morpholine

Ecotoxicity	
Acute toxicity:	Category 3
Fish:	96hrLC50:> 100 mg/L[Oryzias latipes], 96hLC50: 375-460 mg/L[Oncorhynchus mykiss], 96hLC50: 350 mg/L[Lepomis macrochirus], 96hLC50:> 1000 mg/L[Brachydanio rerio]
Daphnia:	48hrEC50: 45 mg/L[Daphnia magna]
Algae:	No data, 96hEC50: 28 mg/L[Pseudokirchneriella subcapitata]
Chronic toxicity:	No Classification
Fish:	No data
Daphnia:	21dayNOEC: 5.0 mg/L[Daphnia magna]
Algae:	72hrNOEC: 30.9 mg/L[Pseudokirchneriella subcapitata]
Persistence and degradability:	Not rapidly biodegradable
Bioaccumulative potential:	Low bioconcentration
Hazardous to the ozone layer:	Classification not possible

1-(2-Methoxy-2-methylethoxy)-2-propanole

Ecotoxicity	
Acute toxicity:	No Classification
Fish:	LC50:> 100 mg/L, 96hLC50:> 10000 mg/L[Pimephales promelas]
Daphnia:	EC50:> 100 mg/L, 48hLC50: 1919 mg/L[Daphnia magna]

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Algae:	EC50:> 100 mg/L
Chronic toxicity:	No Classification
Fish:	No data
Daphnia:	No data
Algae:	No data
Persistence and degradability:	No data
Bioaccumulative potential:	No data
Hazardous to the ozone layer:	Classification not possible
Organic alkali	
Ecotoxicity	
Acute toxicity:	No data
Chronic toxicity:	No data
Chelating agent	
Ecotoxicity	
Acute toxicity:	Category 3
Fish:	96hrLC50: 41 mg/L[Lepomis macrochirus], 96hLC50: 44.2-76.5 mg/L[Pimephales promelas], 96hLC50: 34-62 mg/L[Lepomis macrochirus]
Daphnia:	No data, 48hEC50: 113 mg/L[Daphnia magna]
Algae:	No data, 72hEC50: 1.01 mg/L[Desmodesmus]
Chronic toxicity:	Category 3
Fish:	96hrNOEC: 74 mg/L[Oryzias latipes]
Daphnia:	21dayNOEC: 5.5 mg/L[Daphnia magna]
Algae:	72hrNOEC: 0.32 mg/L[Selenastrum capricornutum], 72hrNOEC: 0.10 mg/L[Selenastrum capricornutum]
Persistence and degradability:	Not rapidly biodegradable
Bioaccumulative potential:	Low bioconcentration
Hazardous to the ozone layer:	Classification not possible
Pure water	
Ecotoxicity	
Acute toxicity:	Classification not possible
Chronic toxicity:	Classification not possible
Hazardous to the ozone layer:	Classification not possible

13. Disposal considerations

Disposal methods: Dispose of contents/container through a licensed disposal agent.

The residues generated in waste water treatment or incineration must also be disposed of in accordance with relevant laws and regulations on waste disposal and cleaning, or their disposal subcontracted.

If disposal is to be subcontracted, conclude an agreement with a licensed disposal agent and attach a manifest with each request.

Do not put anything inside containers to be recycled. Seal and return empty.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Dispose of poisonous substances after neutralizing, hydrolyzing, oxidizing, reducing or diluting them to render them non-poisonous.

14. Transport information

United Nations Recommendations on the Transport of Dangerous Goods:

UN classification: Class8(6.1)
UN number: 2922
Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S.(Morpholine)
Packing group: III
Marine pollutant: Not applicable
Domestic restriction: Check that there are no leaks in the containers. Load carefully to prevent falling, dropping, damage, and load shifting.
Observe the cautions in Section 7. Handling and Storage Cautions.
Observe the methods specified in respective laws and regulations as applicable, including the Fire Services Act, Poisonous and Deleterious Substances Control Act, Explosives Control Act, and High Pressure Gas Safety Act.
In principle this product is for sale in Japan, and transport by ship or air is not anticipated.
Contact our sales office if it is necessary to transport the product by ship or air.

Specific security precaution and condition of transportation: Land transport: Observe provisions in connection with transport prohibitions and restrictions under the Road Act and other regulations.

Sea transport: Observe the Ship Safety Act.
Air transport: Observe the Civil Aeronautics Act.

Emergency Response Guide (ERG) Numbers: 154

15. Regulatory information

This SDS is prepared in accordance with Japanese laws and regulations, and is not intended for use outside of Japan.
Users are responsible for confirming the relevant laws and regulations in connection with the use of this product in their country or region.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

16. Other information

Disclaimer: This data sheet is prepared based on the knowledge of our company at the time of preparation, and does not guarantee the completeness or accuracy of the physical and chemical property values and danger and toxicity. The handling cautions are applicable to ordinary handling. Take separate safety measures in accordance with the circumstances if handling in an extra-ordinary manner or mixing with other substances. There are unknown dangers and toxicity in all chemical products, therefore pay special attention when handling and establish your own conditions for safe use upon your own liability. This Data Sheet has been prepared in accordance with JIS and Japan Chemical Industry Association SDS guidelines. GHS classifications (dangerous toxicity) not listed in Section 2 shall fall under "outside scope of classification" or "not able to be classified".

Reference: GHS Classification Results Database, National Institute of Technology and Evaluation website
GHS Model SDS Information, Japan Industrial Health and Safety Association website
J-GLOBAL HP
SDS issued by raw materials manufacturer

Section 1. Identification

Product name Syntilo 9930
SDS # 450867
Code 450867-US03

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

Product use Metalworking fluid - soluble.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Supplier BP Lubricants USA Inc.
1500 Valley Road
Wayne, NJ 07470
Telephone: +1-888-CASTROL

EMERGENCY HEALTH INFORMATION: +1-800-447-8735

EMERGENCY SPILL INFORMATION: +1-800-424-9300 (CHEMTREC USA)
+1-703-527-3887 (CHEMTREC outside the US)

Section 2. Hazards identification

OSHA/HCS status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms



Signal word Warning

Hazard statements Causes skin irritation.
Causes serious eye irritation.

Precautionary statements

Prevention Wear protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.

Response Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage Not applicable.

Disposal Not applicable.

Hazards not otherwise classified Defatting to the skin.
This product contains complex ionic mixtures within the fluid matrix which are an intrinsic part of the product and cannot be separated from the fluid matrix. Toxicology testing has shown the ionic-mixture containing products exhibit skin and eye irritation properties that are notably attenuated when compared to the individual acid and base components.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Corrosion inhibitors and additives in aqueous solution.

Ingredient name	%	CAS number
2,2',2''-nitrilotriethanol	≥10 - ≤25	102-71-6
octanoic acid	≤5	124-07-2
2-aminoethanol	≤5	141-43-5
disodium tetraborate pentahydrate	≤3	12179-04-3
3,5,5-trimethylhexanoic acid	≤2.9	3302-10-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Wash out mouth with water if person is conscious. Get medical attention if adverse health effects persist or are severe.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed

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

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous combustion products	Combustion products may include the following: metal oxide/oxides carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO ₂ etc.)
Special protective actions for fire-fighters	No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
Special protective equipment for fire-fighters	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.
For emergency responders	Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilled product. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilled material and runoff with soil and surface waterways. Avoid prolonged or repeated contact with skin. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid and as a result may induce allergic skin reactions. Evaporation of water from soluble cutting fluids during use may lead to an increase in concentration which may result in the development of skin conditions due to irritation and defatting. It is important to monitor fluid strength on a regular basis with a refractometer and maintain it at the recommended concentration. Lubricants from other sources and other contaminants should be minimized. Swarf and other debris should be removed. To maintain optimum performance and minimize bacterial spoilage, machine tool coolant systems should be cleaned on a regular basis.
----------------------------	---

Section 7. Handling and storage

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. DO NOT ADD NITRITES TO THIS FLUID.

Not suitable

Prolonged exposure to elevated temperature

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2,2',2''-nitrilotriethanol	ACGIH TLV (United States). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 9/1994
octanoic acid	None.
2-aminoethanol	ACGIH TLV (United States). TWA: 3 ppm 8 hours. Issued/Revised: 9/1994 TWA: 7.5 mg/m ³ 8 hours. Issued/Revised: 9/1994 STEL: 6 ppm 15 minutes. Issued/Revised: 9/1994 STEL: 15 mg/m ³ 15 minutes. Issued/Revised: 9/1994 OSHA PEL (United States). TWA: 3 ppm 8 hours. Issued/Revised: 6/1993 TWA: 6 mg/m ³ 8 hours. Issued/Revised: 6/1993
disodium tetraborate pentahydrate	ACGIH TLV (United States). [Borate compounds, Inorganic] TWA: 2 mg/m ³ 8 hours. Issued/Revised: 1/2005 Form: Inhalable fraction STEL: 6 mg/m ³ 15 minutes. Issued/Revised: 1/2005 Form: Inhalable fraction
3,5,5-trimethylhexanoic acid	None.

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Section 8. Exposure controls/personal protection

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

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

Eye/face protection

Undiluted fluid: Chemical goggles.
Diluted fluid: Safety glasses with side shields.

Skin protection

Hand protection

Wear suitable gloves. Undiluted fluid: Wear chemical resistant gloves. Recommended: nitrile gloves.
Diluted fluid: Wear protective gloves if prolonged or repeated contact is likely. Recommended: nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Body protection

Use of protective clothing is good industrial practice. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Other skin protection

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

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. For protection against metal working fluids, respiratory protection that is classified as "resistant to oil" (class R) or oil proof (class P) should be selected where appropriate. Depending on the level of airborne contaminants, an air-purifying, half-mask respirator (with HEPA filter) including disposable (P- or R-series) (for oil mists less than 50mg/m³), or any powered, air-purifying respirator equipped with hood or helmet and HEPA filter (for oil mists less than 125 mg/m³).

Where organic vapours are a potential hazard during metalworking operations, a combination particulate and organic vapour filter may be necessary. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Color	Yellow. [Light]
Odor	Not available.
Odor threshold	Not available.
pH	9.15 [Conc. (% w/w): 5%]
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	Not available.
Flash point	Closed cup: >100°C (>212°F) [Estimated. Water content interferes with flash point determination.]
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosion limit/flammability limit	Not available.
Vapor pressure	

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Water	17.5	2.3				
2,2',2"-nitrilotriethanol	<0.0075	<0.001				
octanoic acid	0	0				
2-aminoethanol	0.4	0.053				
3,5,5-trimethylhexanoic acid	0.00345	0.00046				

Relative vapor density	Not available.
Density	>1000 kg/m ³ (>1 g/cm ³) at 15°C
Solubility(ies)	

Media	Result
water	Soluble

Partition coefficient: n-octanol/water	Not applicable.
--	-----------------

Auto-ignition temperature

Ingredient name	°C	°F	Method
2,2',2"-nitrilotriethanol	324	615.2	
octanoic acid	>300	>572	
2-aminoethanol	410	770	

Decomposition temperature	Not available.
---------------------------	----------------

Viscosity	Not available.
-----------	----------------

VOC	37 g/l
-----	--------

Particle characteristics

Median particle size	Not applicable.
----------------------	-----------------

Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid excessive heat.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials. Slightly reactive or incompatible with the following materials: acids.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Classification

Product/ingredient name	OSHA	IARC	NTP
2,2',2"-nitrilotriethanol	-	3	-

<i>Descriptors:</i>	<i>OSHA:</i> + - Potential occupational carcinogen	<i>IARC:</i> 1 - Carcinogenic to human. 2A - Probable human carcinogen. 2B - Possible carcinogen to human. 3 - Not classifiable as a human carcinogen. 4 - Probably not a human carcinogen.	<i>NTP:</i> Proven - Known to be human carcinogens. Possible - Reasonably anticipated to be human carcinogens.
---------------------	---	--	--

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
2-aminoethanol	Category 3	-	Respiratory tract irritation

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Skin contact	Adverse symptoms may include the following: irritation redness dryness cracking

Section 11. Toxicological information

Inhalation No specific data.
Ingestion No specific data.

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

Short term exposure

Potential immediate effects Not available.
Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.
Potential delayed effects Not available.

Potential chronic health effects

General No known significant effects or critical hazards.
Carcinogenicity No known significant effects or critical hazards.
Mutagenicity No known significant effects or critical hazards.
Teratogenicity No known significant effects or critical hazards.
Developmental effects No known significant effects or critical hazards.
Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	8710.8 mg/kg
Dermal	31073.45 mg/kg
Inhalation (vapors)	310.73 mg/l

Additional information

Alkanolamine: This product contains an alkanolamine. In all metalworking fluids containing amines, there is a potential for forming nitrosamines which are animal carcinogens. Therefore, no nitrites or related nitrosating agents should be added to such compositions.

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.
Mobility Liquid. Soluble in water.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. **Diluted Fluid** The spent diluted fluid comprises a relatively stable emulsion. Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques (e.g. emulsion splitting, coagulation and filtration) approved by the local authority. Spent fluid should never be disposed of down the drain. The aqueous phase should not be discharged into sewage systems unless provided for by local regulations; the non-aqueous phase should be disposed of as undiluted fluid. Note that separated aqueous solutions or effluents may contain metal salts as well as traces of oil and must be checked for conformity in these respects against consents given by the authorities before disposal. Further treatment may be required.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Section 14. Transport information

Special precautions for user Not available.

Transport in bulk according to IMO instruments Not available.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are active or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

SARA 313

Form R - Reporting requirements This product does not contain any hazardous ingredients at or above regulated thresholds.

Supplier notification This product does not contain any hazardous ingredients at or above regulated thresholds.

State regulations

Massachusetts The following components are listed: TRIETHANOLAMINE; ETHANOLAMINE; BORATES, TETRA, SODIUM SALTS

New Jersey The following components are listed: TRIETHANOLAMINE; ETHANOLAMINE; BORATE COMPOUNDS, Inorganic

Pennsylvania The following components are listed: ETHANOL, 2,2',2"-NITRILOTRIS-; ETHANOL, 2-AMINO-

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Ethylene oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Diethanolamine, Diethanolamine, Propylene oxide and 1,4-Dioxane, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Other regulations

Australia inventory (AIC) At least one component is not listed.

Canada inventory At least one component is not listed.

China inventory (IECSC) All components are listed or exempted.

Japan inventory (CSCL) All components are listed or exempted.

Korea inventory (KECI) All components are listed or exempted.

Philippines inventory (PICCS) At least one component is not listed.

Taiwan Chemical Substances Inventory (TCSI) Not determined.

REACH Status For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

[National Fire Protection Association \(U.S.A.\)](#)



[History](#)

Date of issue/Date of revision	03/05/2025.
Date of previous issue	03/05/2025.
Prepared by	Product Stewardship Group
Key to abbreviations	<p>ACGIH = American Conference of Industrial Hygienists ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS Number = Chemical Abstracts Service Registry Number GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) OEL = Occupational Exposure Limit SDS = Safety Data Sheet STEL = Short term exposure limit TWA = Time weighted average UN = United Nations UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1</p>

▣ Indicates information that has changed from previously issued version.

[Notice to reader](#)

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

Safety Data Sheet

Revision Date Apr 1, 2024

1. PRODUCT AND COMPANY IDENTIFICATION

Product Trade name: SUNPRESS S-162A
 Company name: SUGIMURA Chemical Industrial Co., Ltd
 Address: 12-4, 1-Chome, Marunouchi, Nakaku, Nagoya, 460, Japan
 TEL: +81-52-211-6000
 Emergency call: +81-52-777-6100
 FAX: +81-52-777-7701
 E-mail: skk-ls@sugimura-chem.co.jp
 Recommended use of the chemical: Lubricant for metal working

2. Hazards identification

GHS classification
 Physical hazards: Flammable liquids Category 3
 Health hazards: Specific target organ toxicity (single exposure) Category 3(narcotic effects, respiratory tract irritation)

Environment hazards: Aspiration hazard Category 1
 Hazardous to the aquatic environment - short-term (acute) Category 2
 Hazardous to the aquatic environment - long-term (chronic) Category 2
 *Hazards not listed above are either not classified or classification not possible.



GHS label elements
 Pictogram and Symbol:
 Signal words :
 Hazard statement:

Danger
 Flammable liquid and vapour
 May cause respiratory irritation or drowsiness or dizziness
 May be fatal if swallowed and enters airways
 Toxic to aquatic life
 Toxic to aquatic life with long lasting effects

Precaution: **【Prevention】**
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use non-sparking tools.
 Take action to prevent static discharges.
 Wear protective gloves/protective clothing/eye protection/face protection.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

【Response】

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

In case of fire: Use appropriate media to extinguish.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor if you feel unwell.

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

DO NOT INDUCE VOMITING.

Collect spillage.

【Storage】

Store in a well-ventilated place.

Keep cool.

Keep container tightly closed.

Store locked up.

【Disposal】

Dispose of contents/container to local/regional/national/international

Country/area information : No information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Mixture: Mixture

Ingredients and composition:

INGREDIENTS	CAS RN	Wt%
Mineral Sprits	Trade secret	90~100%
*Trimethyl benzene	25551-13-7	5.3%
*Nonan	111-84-2	2.2%
*Xylene	1330-20-7	0.3 ≥ 1% <

*Ingredients contained in Mineral Sprits

4. FIRST AID MEASURES

Inhalation: Remove exposed person to fresh air if adverse effects are observed. If irritation persists or if toxic symptoms are observed, get medical attention.

Skin: Wash with soap and water. Get medical attention if irritation develops.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, get medical attention.

Ingestion: DO NOT INDUCE VOMITING.
Get immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray(fog), dry chemical, carbon dioxide, or foam.

Unsuitable extinguishing media: The use of water jets can cause the fire to spread and can be dangerous.

Protection for fire-fighters: When extinguishing a fire, wear appropriate respiratory protection and chemical protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency Procedures: Methods for containment and cleaning up:	In case of spill, evacuate area and secure sources of ignition and clean up spill immediately. Avoid contamination of sewers and waterways. Wear approved respiratory equipment during clean up if area is not ventilated adequately. Soak up with sand, earth or other inert material. Put into approved containers to be stored outside until disposal in accordance with local and federal regulations.
---	--

7. HANDLING AND STORAGE

HANDLING

Technical countermeasures : Partial exhaust·full ventilation : Notes :	No fires. Avoid creating ignition sources such as static electricity and sparks. Install a partial exhaust system or perform general ventilation. Avoid contact with eyes and skin and avoid inhalation of mist/vapors by wearing appropriate protective equipment such as safety glasses, impermeable protective clothing, protective gloves or coverings. After handling Wash hands thoroughly.
--	---

STORAGE

Storage conditions :	Store away from sources of ignition such as high temperatures, sparks, and open flames. Close the container tightly after use to prevent dirt and moisture from entering. Store locked in a cool, well-ventilated place, avoiding direct sunlight and rain.
----------------------	---

Container packaging materials	Conforms to the container used for the product.
-------------------------------	---

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

【Xylene】

Administrative levels: Control parameters, eg, occupational exposure limit values or biological limit values JSOH: ACGIH:	50ppm 50ppm 217mg/m ³ TLV-TWA 100ppm TLV-STEL 150ppm
--	--

【Trimethyl benzene】

Administrative levels: Control parameters, eg, occupational exposure limit values or biological limit values JSOH: ACGIH:	Not applicable 25ppm 120mg/m ³ TLV-TWA 25ppm
--	---

【Nonan】

Administrative levels: Control parameters, eg, occupational exposure limit values or biological limit values JSOH: ACGIH:	Not applicable 200ppm 1050mg/m ³ TLV-TWA 200ppm
--	--

【Mineral Sprits】

Administrative levels:	Not applicable
Control parameters, eg, occupational exposure limit values or biological limit values	
JSOH:	Not applicable
ACGIH:	TLV-TWA 100ppm
Engineering measures:	Provide eye wash and body shower facilities near the workplace.
Respiratory protection:	If necessary, wear appropriate respirator.
Protective gloves:	Wear protective gloves of rubber or plastic materials as required to avoid skin contact.
Eye protection:	Wear safety goggles in case of splash risk.
Protective equipment:	Wear protective clothing as required to avoid skin contact.
Hygienic practices:	Wash hand thoroughly after handling. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state/Color:	Clear and Transparent Liquid
Odor:	N/D
Melting /Freezing point:	N/D
Boiling point or first distillation point and boiling range:	N/D
Flammability:	Applicable
Lower explosive limit and upper explosive limit /Flammability limit:	LEL N/D UEL N/D
Flash point:	>40°C
Spontaneous ignition temperature:	N/D
Decomposition temperature:	N/D
pH:	Not applicable
Viscosity (mm ² /s, 40°C):	0.87
Solubility:	Negligible
n-octanol/water partition coefficient:	N/D
Vapor pressure:	N/D
Density (g/cm ³ , 15°C):	0.79
Relative gas density:	N/D
Particle properties:	N/D

10. STABILITY AND REACTIVITY

Reactivity :	Stable under normal storage and handling.
Chemical stability:	Stable under normal storage and handling.
Possibility of hazardous reactions:	No information
Conditions to avoid :	Contact with high temperatures, sparks, fire, mixtures or contact hazardous materials.
Mixtures or contact hazardous material :	strong oxidizing agent
Hazardous decomposition products :	CO, CO2 (during combustion)

11. TOXICOLOGICAL INFORMATION

GHS classification of this product was estimated based on information of ingredients.

Acute toxicity (oral):	LD50 > 2000 mg/Kg (Estimate)
Acute toxicity (dermal):	LD50 > 2000 mg/Kg (Estimate)
Acute toxicity (inhalation gases):	No classification
Acute toxicity (inhalation vapours):	Not classified
Acute toxicity (inhalation dusts/mists):	Not classified
Skin corrosion/irritation:	Not classified
Serious eye damage/eye irritation:	Not classified
Sensitization (respiratory):	Not classified
Sensitization (skin):	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
Specific target organ toxicity (single exposure):	Category 3(narcotic effects, respiratory tract irritation)
Specific target organ toxicity (repeated exposure):	Not classified
Aspiration hazard:	Category 1
Other information:	Skin contact: May cause skin irritation. Eye contact may cause irritation. May cause diarrhea and vomiting if swallowed. Inhalation: May cause a feeling of sickness.

12. ECOLOGICAL INFORMATION

GHS classification of this product was estimated based on information of ingredients.

Ecotoxicity:	
Hazardous to the aquatic environment - Short-term (acute) hazard :	Category 2
Hazardous to the aquatic environment - Long-term (chronic) hazard :	Category 2
Residuality and decomposition :	No information
Bioaccumulation :	No information
Mobility in soil :	No information
Harmful to the ozone layer :	No information

13. DISPOSAL CONSIDERATIONS

Waste from residues:	Follow local regulations. Do not flush into drain/storm sewer use an authorized disposal service. If permitted incineration may be practical.
Contaminated containers and packaging:	Clean and recycle containers or dispose of them appropriately in accordance with relevant laws and regulations and local government standards. When discarding an empty container, completely remove the contents.

SUNPRESS S-162A

Apr 1, 2024 S-00386

14. TRANSPORT INFORMATION

Proper shipping Name:	PETROLEUM PRODUCTS, N.O.S.
Hazard Class:	3
Packing Group:	III
UN No.:	1268

15. REGULATORY INFORMATION

Follow all regulations in your country.

【 Laws and Regulations of JAPAN 】

Pollutant Release and Transfer Register (PRTR):	List of Class 1 Designated Chemical Substances Trimethyl benzene (No.691 (PRTR Law)) List of Class 2 Designated Chemical Substances Nonan (No.791 (PRTR Law))
Industrial Safety and Health Law:	Substances subject to labeling Xylene Trimethyl benzene Nonan Mineral Sprits
Poisonous and Deleterious Substances Control Law:	Not regulated
Fire Service Law:	Category 4, Flammable Liquids, #2 Petroleum, Water immiscible
Ship Safety Act:	Flammable liquids
Civil Aeronautics Act:	Flammable liquids
Waste Treatment Law:	Industrial Waste

16. OTHER INFORMATION

Disclaimer of Express or Implied Warranties:

The information contained herein is based upon data believed to be reliable and reflects our best professional judgment. Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy of completeness of the information contained therein and assume no responsibility regarding the suitability of this information for the user's intended purpose or for the consequence of its use. Each individual should make a determination as to the suitability of the information for his/her particular purpose(s).

CREATED 2014/05/23

UPDATED 2025/10/30

Safety Data Sheet

1. Identification

GHS Product identifier

"TORAYCON" GF-Reinforced Grad 1101G-30, 1201G-15, 1101G-30 B, 1201G-15 B
 1101G-15, 1101G-20, 1101G-30, 1101G-30S, 1101G-40S, 1101G-45,
 1101G-15 B, 1101G15B (J), 1101G-30 B, 1101G-45 B
 1201G-15, 1201G-15 S, 1201G-20 S, 1201G-15 B, 1101G-J30, 1101G-J30 B, 1201G-J15

Other means of identification

Product No.(SDS No.) R3E-BA0AB0RB1301-10-1

Supplier's details

Company name Toray Industries, Inc.
 Address Nihonbashi Mitsui Tower, 1-1, Nihonbashi-Muromachi 2-chome, Chuo-ku, Tokyo
 103-8666, Japan
 Department Engineering Resins Dept., Automotive Products Dept.
 Person in charge General Manager
 Telephone number +81-3-3245-5500, +81-3-3245-5495

FAX Number and/or e-mail address of supplier

FAX number +81-3-3245-5515, +81-3-3245-5498

E-mail Address/URL www.plastics.toray/ja/

Emergency phone number +81-3-3245-5500, +81-3-3245-5495

Recommended use

For automobiles, electric and electronic devices, general use

Restrictions on use

Do not use for self-contained mechanical devices.

If considering use for medical purposes or food container purposes, please contact us in advance about the specific usage.

2. Hazards Identification

GHS Classification of the substance or mixture

This product is not classified under hazardous according to JIS Z 7252: 2019 (Classification of chemicals based on GHS).

GHS label elements

Not applicable

Other hazards which do not result in classification

Nothing in particular.

Major symptom and envisioned emergencies

No information available.

3. Composition/Information on Ingredients

Substance/Mixture	Mixture
Product identity(chemical name, common name)	Poly(tetramethylene terephthalate) resin
Synonym(s)	Poly(butylene terephthalate) resin, PBT resin
Composition/information on ingredients	
Chemical identity of the substance	Poly(tetramethylene terephthalate)
Content(%)	50-90
Ingredient type	Constituent
Contribution to GHS classification	Not contribute
Chemical property(chemical formula, structural formula)	[OC4H8OCO(C6H4)CO] _n

CAS No.	26062-94-2
ENCS No.(Chemical Substances Control Law)	7-1039
ISHL No.(Industrial Safety and Health Act)	7-1039
Chemical identity of the substance	Alumina borosilicate glass
Content(%)	10-50
Ingredient type	Constituent
Contribution to GHS classification	Not contribute
Chemical property(chemical formula, structural formula)	SiO2.Al2O3.CaO.MgO.B2O3.Na2O.K2O
CAS No.	65997-17-3
ENCS No.(Chemical Substances Control Law)	Not applicable
ISHL No.(Industrial Safety and Health Act)	Not applicable
Chemical identity of the substance	Carbon black
Content(%)	0-1
Ingredient type	Constituent
Contribution to GHS classification	Not contribute
Chemical property(chemical formula, structural formula)	C
CAS No.	1333-86-4
ENCS No.(Chemical Substances Control Law)	Not applicable(element)
ISHL No.(Industrial Safety and Health Act)	Not applicable(element)

4. First-aid measures

Inhalation

- Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Evacuate victim that inhaled gas from the molten polymer to fresh air.
- Seek medical advice, if victim does not recover.

Skin contact

- If a person touches the molten polymer, cool the affected part with fresh water.
- Do not try to remove the polymer by force and seek medical advice if the person got burnt.

Eye contact

- Remove contact lenses, if present and easy to do. Continue rinsing.
- Rinse your eyes gently with clean water for at least 15 minutes. Consult a doctor to receive medical treatment as soon as possible.
- Do not let the victim rub his eyes/keep his eyes tightly closed.

Ingestion

- Rinse your mouth with some water.
- If you don't feel well, arrange for a medical evaluation.

Most important symptoms and effects, both acute and delayed

No information available.

Precautions required to protect first-aiders

No information available.

Notes for the doctor

No information available.

5. Firefighting measures

Suitable extinguishing media

Water spray/Water jet/Foam/Powder/Carbon dioxide (CO2)

Unsuitable extinguishing media

Nothing in particular.

Special hazards arising from the substance or mixture

In case of fire or explosion, do not inhale fumes.

Toxic fumes or gas formed during combustion (Carbon monoxide).

Specific fire-fighting measures

Protect surrounding equipment by spraying water from a safe distance.

Remove movable containers from the area of the fire if safe to do so.

Be sure to extinguish a fire from the windward side and keep a safe distance from a fire.

Unauthorized personnel shall be evacuated to a safe place.

Special protective actions for fire-fighters

Fire-fighting personnel should wear proper protective equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Sweep up spilled pellets on road or floor to avoid tripping.

Environmental precautions

Do not discharge to sewers or into drain.

If plastics pellet got released in environment, take adequate steps to prevent aquatic animals and birds dying from eating pellets.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures against second disasters

Remove possible sources of ignition in the surrounding area.

7. Handling and storage

Precautions for safe handling

Technical measures

Exposure control of handler

Do not breathe dust/fume/gas.

Do not eat or smoke except the specified area.

Use only in the well-ventilated areas.

Prevention of fire/explosion

Do not carelessly use fire nearby.

Take precautionary actions of powder-dust explosion, if powder-dust occurred during secondary process.

Local/general exhaust ventilation

Do not inhale the gas and fumes generated during molding.

Volatile gases which may irritate eyes, nose and throat may be released.

Use adequate local exhaust ventilation during drying and molding.

Get medical advice if you feel unwell.

Precautions

Do not damage containers.

Avoid contact of containers with sharp edges.

Prevent deposition of dust.

Good general ventilation should be sufficient for most conditions.

Do not keep this material under high temperature condition for a long time.

Do not touch high temperature resin without protector.

Plastics pellet easily generates static electricity, so take countermeasures to eliminate static electricity if necessary.

Avoid rough handling or dropping.

See information on each ingredient if powder-dust occurs.

Do not empty into drains.

When smashing or crushing the resin, glass fibers may be released.
Put the waste into a bag immediately to minimize released glass fibers.
Contact with the fibers may cause temporary irritation or itching to skin, eyes, nose or throat.
Sweep up and dispose of spilled resin to eliminate slipping hazard.
Do not pile up bags too high in order to avoid injury caused by falling of the product.

Proper hygiene measures

Wash hands before intermissions or and after work.
Do not eat or smoke while working.

Conditions for safe storage, including any incompatibilities

Proper storage condition

Follow fire defense law and local regulations for storage and handling.

Storage condition to avoid

Keep fire away.
Keep away from heat source, steam pipe and direct sunlight. Store in cool places.

Safe container materials

No information available.

8. Exposure Control/Personal Protection

Control parameters

Administrative levels (Industrial Safety and Health Act)
Administrative levels are not established.

Occupational exposure limits

Japan Society for Occupational Health and ACGIH do not determine adopted value about powder-dust of resin.
Generally, data shown below is known about dust.

Recommended value of Japan Society for Occupational Health(2024)

Third class dust

The weighted average per hour: respirable dust 2mg/m³, total dust 8mg/m³

Recommend value of ACGIH(2024)

General dust

The weighted average per hour: respirable dust 3mg/m³, total dust 10mg/m³

DNEL(Derived No Effect Level)

No information available.

PNEC(Predicted No Effect Concentration)

No information available.

Exposure controls

When processing, partial ventilation is desirable to eliminate generated gas and powder-dust.

Individual protection measures

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.
Against powder-dust: protective mask for powder-dust
Against gas from molten polymer: protective mask for organic gas

Hand protection

Wear protective gloves.
Wear heat-resistant protection gloves when handling molten polymers.

Eye/face protection

Wear protective glasses or safety goggles.

Skin and body protection

Wear protective clothing.
It is desirable to put on long sleeve clothing so as not to touch skin directly.
Wear protection clothing of heat-resistance when handling melting polymer.

9. Physical and Chemical Properties

Physical state

Solid(pellet)

Color

White, Black

Odor

Odorless

Melting point/freezing point

225°C

Boiling point or initial boiling point and boiling range

None

Flammability (solid, gas)

Not available.

Lower and upper explosion limit / flammability limit

Not available.

Flash point

Not available.

Auto-ignition temperature

>400°C

Decomposition temperature

No information available.

pH

Not applicable.

Kinematic viscosity

Not applicable.

Solubility

No information available.

Partition coefficient: n-octanol/water

No information available.

Vapour pressure

No information available.

Density and/or relative density

1.42-1.68

Relative vapour density

Not applicable.

Particle characteristics

Not applicable.

Other information

No information available.

10. Stability and reactivity

Reactivity

Nothing in particular.

Chemical stability

This product is considered stable under ordinary storage and handling condition.

Possibility of hazardous reactions

This product is considered stable under ordinary storage and handling condition.

Conditions to avoid

Direct sunlight, fire, heat, etc.

Incompatible materials

Nothing in particular.

Hazardous decomposition products

During burning, black smoke, carbon dioxide, carbon monoxide, nitrogen oxide and others may be produced.

11. Toxicological Information

Acute toxicity

Classification not possible.(N.A.)

Skin corrosion/irritation

Classification not possible.(N.A.)

Serious eye damage/eye irritation

Classification not possible.(N.A.)

Sensitization, respiratory/skin

Classification not possible.(N.A.)

Germ cell mutagenicity

Classification not possible.(N.A.)

Carcinogenicity

Classification not possible.(N.A.)

Reproductive toxicity

Classification not possible.(N.A.)

Specific target organ toxicity/single exposure

Classification not possible.(N.A.)

Specific target organ toxicity/repeated exposure

Classification not possible.(N.A.)

Aspiration hazard

Classification not possible.(N.A.)

Other hazard(s)

As for articles that are "Classification not possible", there are no instances reported on harmful effects to health and environment, according to recent datum.

12. Ecological Information

Ecotoxicity

Acute(short-term)

Classification not possible.(N.A.)

Chronic(long-term)

Classification not possible.(N.A.)

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Adverse effect to the ozone layer

No information available.

13. Disposal considerations

Information for proper disposal, recycling, or reclamation of the substance or mixture and/or its container to assist in the determination of safe and environmentally preferred waste management

Dispose to an authorized waste collection point.

Follow the local law and regulations of waste disposal and prevention against public nuisance.

Do not cast waste (waste fluid, solid waste and washing drainage etc.) that includes this product directly into a river, or bury it underground.

Check if there is no resin left, if disposing the package after use. (paper package, flexible container etc.)

Follow the local law and regulations of waste disposal.

Do not use the package for other purposes.

14. Transport information

International regulation

UN number	Not applicable.
UN proper shipping name	Not applicable.
Transport hazard class(es)	Not applicable.
Packing group	Not applicable.
Environmental hazards	Not applicable.

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

Specific safety measures and conditions on transport

Covering is necessary for shutting off sunlight and rain.
Handle gently to avoid damaging bags.
Caution for slipping by the scattered pellets.

The Laws and Regulations for transportation in Japan

Land transportation	Not applicable.
Marine transportation	Not applicable.
Air transportation	Not applicable.

ERG Guide No.

Not applicable.

15. Regulatory information

Information regarding regulations/legislation specific for the product

We are not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other Information/References

Date of issue/Date of revision

Date of revision 2025/10/30

Revised item Addition of one grade, Chapter 8: Change of description contents

Reference

JIS Z 7252(2019): Classification of chemicals based on "Globally Harmonized System of Classification and Labeling of Chemicals (GHS)"

JIS Z 7253(2019): Hazard communication of chemicals based on GHS-Labeling and Safety Data Sheet (SDS)
Information of suppliers SDS

"NITE-CHRIP(NITE Chemical Risk Information Platform)". NITE(National Institute of Technology and Evaluation).

"J-CHECK(Japan CHEMicals Collaborative Knowledge database)". NITE(National Institute of Technology and Evaluation).

"Shokuba-no-Anzen-Site". Ministry of Health, Labour and Welfare.

"Information on Chemicals". ECHA.

Disclaimer

The information relates to this specific material.

It may not be valid for this material, if used in combination with any other materials or in any process.

It is the user's responsibility to satisfy him-selves as to the suitability and completeness of this information for his own particular use.

The information herein is given in good faith, but no warranty, express or implied, is made.

Please consult us for further information.

This information contained in this data sheet represents the best information currently available to us.

However, no warranty is made with respect to its completeness and we assume no liability resulting from its use.

It is advised to make their own tests to determinate the safety and suitability of each such product or

combination for their own purposes.

Other information

Resin is usually safe itself, so as for the calculation of division, acute toxicity (oral) is calculated by LD50 as more than 10000.

Certificate Of Completion

Envelope Id: BA0C104F-931E-892F-8280-23E5BCFA0EC1	Status: Completed
Subject: Complete with Docusign: KA0442.251 MELCO HVAC Air Permit Application - Revised Final 20260528.pdf	
Source Envelope:	
Document Pages: 207	Signatures: 2
Certificate Pages: 4	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Carrie Plummer
Time Zone: (UTC-08:00) Pacific Time (US & Canada)	5900A Katella Ave
	Cypress, CA 90630
	carrie.plummer@mehvac.meus.com
	IP Address: 192.34.49.10

Record Tracking

Status: Original	Holder: Carrie Plummer	Location: DocuSign
5/28/2026 11:18:13 AM	carrie.plummer@mehvac.meus.com	

Signer Events

Kenny Pitakis
 Kenny.Pitakis@mehvac.meus.com
 VP, Operations
 MELCO HAVC US, Inc.
 Security Level: Email, Account Authentication (None)

Signature

Signed by:

 94B461635C5C44E...
 Signature Adoption: Pre-selected Style
 Using IP Address: 192.34.49.10

Timestamp

Sent: 5/28/2026 11:19:57 AM
 Viewed: 5/28/2026 12:06:51 PM
 Signed: 5/28/2026 12:07:09 PM

Electronic Record and Signature Disclosure:

Accepted: 5/28/2026 12:06:51 PM
 ID: a1ff335b-7685-442f-a8ab-edef1f897c10

In Person Signer Events

Signature

Timestamp

Editor Delivery Events

Status

Timestamp

Agent Delivery Events

Status

Timestamp

Intermediary Delivery Events

Status

Timestamp

Certified Delivery Events

Status

Timestamp

Carbon Copy Events

Status

Timestamp

Witness Events

Signature

Timestamp

Notary Events

Signature

Timestamp

Envelope Summary Events

Status

Timestamps

Envelope Sent	Hashed/Encrypted	5/28/2026 11:19:57 AM
Certified Delivered	Security Checked	5/28/2026 12:06:51 PM
Signing Complete	Security Checked	5/28/2026 12:07:09 PM
Completed	Security Checked	5/28/2026 12:07:09 PM

Payment Events

Status

Timestamps

Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, Mitsubishi Electric US - Semiconductors (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a \$0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Mitsubishi Electric US - Semiconductors:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: danyo.tu@meus.mea.com

To advise Mitsubishi Electric US - Semiconductors of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at danyo.tu@meus.mea.com and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from Mitsubishi Electric US - Semiconductors

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to danyo.tu@meus.mea.com and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Mitsubishi Electric US - Semiconductors

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an email to danyo.tu@meus.mea.com and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: <https://support.docusign.com/guides/signer-guide-signing-system-requirements>.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to ‘I agree to use electronic records and signatures’ before clicking ‘CONTINUE’ within the DocuSign system.

By selecting the check-box next to ‘I agree to use electronic records and signatures’, you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Mitsubishi Electric US - Semiconductors as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Mitsubishi Electric US - Semiconductors during the course of your relationship with Mitsubishi Electric US - Semiconductors.



May 26, 2026

Kentucky Division for Air Quality
Attn: Jonathon Hughes
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

**Re: Air Permit Application
MELCO HVAC US, Inc.
Maysville, Kentucky
August Mack Project Number KA0442.251**

Mr. Jonathon Hughes

On behalf of MELCO HVAC US, Inc. (MEHVAC), August Mack Environmental, Inc., (August Mack) is requesting review and approval of the enclosed *revised* Air Permit Application package. The application package consists of:

- Attachment A - DEP7007 Forms
- Attachment B - List of Emission Units
- Attachment C - Supporting Calculations
- Attachment D - Process Flow Diagram
- Attachment E - Site Map
- Attachment F - Safety Data Sheets

The revisions include the following:

- Using the maximum rated capacity of the spray gun for the EU#11 Spray Booth PTE on form K.2 EU#11 and in the supporting calculations
- Switched the permitting classification from State-Origin to Conditional Major and provided requested limits on form AI.4.
 - Added a limited PTE (tons/year) table to the front of the supporting calculations to show the HAP limits.
- Corrected units in the supporting calculations.
- Switched the degreasing chemical in the EU#8 CS Mn Line Dipping from Bonderite C-AK 907 Alkaline to Bonderite C-AK-305.
 - Updated Att F - SDSs with the change.
- Added two, 60kW Natural Gas Backup Generators
 - Added EE forms and supporting calculations. Updated DD forms.
- Updated N.1 forms with newly calculated emissions.
- Added a Process Flow Diagram for the QC testing equipment building.

Mr. Jonathon Hughes

May 26, 2026

If you have any questions regarding this submission, please feel free to contact us.

Sincerely,



Ryan Gerbitz
Compliance Consultant



Ryan Markland
Senior Technical Manager

Attachment

ATTACHMENT A

DEP7007 Forms

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007AI Administrative Information ___ Section AI.1: Source Information ___ Section AI.2: Applicant Information ___ Section AI.3: Owner Information ___ Section AI.4: Type of Application ___ Section AI.5: Other Required Information ___ Section AI.6: Signature Block ___ Section AI.7: Notes, Comments, and Explanations	Additional Documentation ___ Additional Documentation attached
--	--	--

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: _____

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section AI.1: Source Information					
Physical Location	Street:	<u>1705 Downing Drive</u>			
Address:	City:	County:	<u>Maysville</u>	<u>Mason</u>	Zip Code: <u>41056</u>
Mailing Address:	Street or P.O. Box:	<u>1705 Downing Drive</u>			
	City:	State:	<u>Maysville</u>	<u>Kentucky</u>	Zip Code: <u>41056</u>

Standard Coordinates for Source Physical Location	
Longitude: <u>-83.8335</u> (decimal degrees)	Latitude: <u>38.64819</u> (decimal degrees)

Primary (NAICS) Category: Compressor manufacturing Primary NAICS #: 333912

Classification (SIC) Category:	<u>Air and Gas Compressors</u>	Primary SIC #:	<u>3563</u>
Briefly discuss the type of business conducted at this site:			
Description of Area Surrounding Source:	<input type="checkbox"/> Rural Area <input type="checkbox"/> Industrial Park <input type="checkbox"/> Residential Area <input type="checkbox"/> Urban Area <input type="checkbox"/> Industrial Area <input checked="" type="checkbox"/> Commercial Area	Is any part of the source located on federal land?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Approximate distance to nearest residence or commercial property:	<u>250 feet</u>	Property Area:	<u>1,045,440 sq. ft</u>
		Is this source portable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?			
NPDES/KPDES:	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A
Solid Waste:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
RCRA:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
UST:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
Type of Regulated Waste Activity:	<input type="checkbox"/> Mixed Waste Generator <input type="checkbox"/> Generator <input type="checkbox"/> Recycler <input type="checkbox"/> Other: _____ <input type="checkbox"/> U.S. Importer of Hazardous Waste <input type="checkbox"/> Transporter <input type="checkbox"/> Treatment/Storage/Disposal Facility <input checked="" type="checkbox"/> N/A		

Section AI.2: Applicant Information

Applicant Name: MELCO HVAC US, Inc.

Title: (if individual) _____

Mailing Address: **Street or P.O. Box:** 1705 Downing Drive
City: Maysville **State:** Kentucky **Zip Code:** 41056

Email: (if individual) _____

Phone: 606.759.5760

Technical Contact

Name: Kenny Pitakis

Title: Vice President, Operations

Mailing Address: **Street or P.O. Box:** 1705 Downing Drive
City: Maysville **State:** KY **Zip Code:** 41056

Email: Kenny.Pitakis@mehvac.meus.com

Phone: 606.407.9131

Air Permit Contact for Source

Name: Same as Technical Contact

Title: _____

Mailing Address: **Street or P.O. Box:** _____
City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

Section AI.3: Owner Information

Owner same as applicant

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____
City: _____ **State:** _____ **Zip Code:** _____

Email: _____

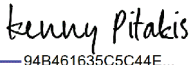
Phone: _____

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

Name	Position
N/A	
_____	_____
_____	_____
_____	_____

Section AI.4: Type of Application																													
Current Status:	<input type="checkbox"/> Title V <input type="checkbox"/> Conditional Major <input type="checkbox"/> State-Origin <input type="checkbox"/> General Permit <input checked="" type="checkbox"/> Registration <input type="checkbox"/> None <input checked="" type="checkbox"/> Name Change <input type="checkbox"/> Initial Registration <input checked="" type="checkbox"/> Significant Revision <input checked="" type="checkbox"/> Administrative Permit Amendment <input type="checkbox"/> Renewal Permit <input type="checkbox"/> Revised Registration <input type="checkbox"/> Minor Revision <input type="checkbox"/> Initial Source-wide Operating Permit Requested Action: <i>(check all that apply)</i> <input type="checkbox"/> 502(b)(10)Change <input type="checkbox"/> Extension Request <input type="checkbox"/> Addition of New Facility <input type="checkbox"/> Portable Plant Relocation Notice <input type="checkbox"/> Revision <input type="checkbox"/> Off Permit Change <input type="checkbox"/> Landfill Alternate Compliance Submittal <input type="checkbox"/> Modification of Existing Facilities <input type="checkbox"/> Ownership Change <input type="checkbox"/> Closure																												
Requested Status:	<input type="checkbox"/> Title V <input checked="" type="checkbox"/> Conditional Major <input type="checkbox"/> State-Origin <input type="checkbox"/> PSD <input type="checkbox"/> NSR <input type="checkbox"/> Other: _____																												
Is the source requesting a limitation of potential emissions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																													
<table style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Pollutant:</th> <th style="text-align: left; border-bottom: 1px solid black;">Requested Limit:</th> </tr> <tr> <td><input type="checkbox"/> Particulate Matter</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Volatile Organic Compounds (VOC)</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Carbon Monoxide</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Nitrogen Oxides</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Sulfur Dioxide</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Lead</td> <td>_____</td> </tr> </table>	Pollutant:	Requested Limit:	<input type="checkbox"/> Particulate Matter	_____	<input type="checkbox"/> Volatile Organic Compounds (VOC)	_____	<input type="checkbox"/> Carbon Monoxide	_____	<input type="checkbox"/> Nitrogen Oxides	_____	<input type="checkbox"/> Sulfur Dioxide	_____	<input type="checkbox"/> Lead	_____	<table style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Pollutant:</th> <th style="text-align: left; border-bottom: 1px solid black;">Requested Limit:</th> </tr> <tr> <td><input checked="" type="checkbox"/> Single HAP</td> <td><u>9.99 tons per 12 month rolling</u></td> </tr> <tr> <td><input checked="" type="checkbox"/> Combined HAPs</td> <td><u>22 tons per 12 month rolling</u></td> </tr> <tr> <td><input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Carbon Dioxide</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Greenhouse Gases (GHG)</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td>_____</td> </tr> </table>	Pollutant:	Requested Limit:	<input checked="" type="checkbox"/> Single HAP	<u>9.99 tons per 12 month rolling</u>	<input checked="" type="checkbox"/> Combined HAPs	<u>22 tons per 12 month rolling</u>	<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____	<input type="checkbox"/> Carbon Dioxide	_____	<input type="checkbox"/> Greenhouse Gases (GHG)	_____	<input type="checkbox"/> Other	_____
Pollutant:	Requested Limit:																												
<input type="checkbox"/> Particulate Matter	_____																												
<input type="checkbox"/> Volatile Organic Compounds (VOC)	_____																												
<input type="checkbox"/> Carbon Monoxide	_____																												
<input type="checkbox"/> Nitrogen Oxides	_____																												
<input type="checkbox"/> Sulfur Dioxide	_____																												
<input type="checkbox"/> Lead	_____																												
Pollutant:	Requested Limit:																												
<input checked="" type="checkbox"/> Single HAP	<u>9.99 tons per 12 month rolling</u>																												
<input checked="" type="checkbox"/> Combined HAPs	<u>22 tons per 12 month rolling</u>																												
<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____																												
<input type="checkbox"/> Carbon Dioxide	_____																												
<input type="checkbox"/> Greenhouse Gases (GHG)	_____																												
<input type="checkbox"/> Other	_____																												
For New Construction:																													
Proposed Start Date of Construction: <i>(MM/YYYY)</i>	Proposed Operation Start-Up Date: <i>(MM/YYYY)</i>																												
_____	_____																												
For Modifications:																													
Proposed Start Date of Modification: <i>(MM/YYYY)</i>	Proposed Operation Start-Up Date: <i>(MM/YYYY)</i>																												
_____ 07/2026	_____ 05/2027																												
Applicant is seeking coverage under a permit shield. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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:	
<input type="checkbox"/> DEP7007A Indirect Heat Exchangers and Turbines <input checked="" type="checkbox"/> DEP7007B Manufacturing or Processing Operations <input type="checkbox"/> DEP7007C Incinerators and Waste Burners <input type="checkbox"/> DEP7007F Episode Standby Plan <input type="checkbox"/> DEP7007J Volatile Liquid Storage <input checked="" type="checkbox"/> DEP7007K Surface Coating or Printing Operations <input type="checkbox"/> DEP7007L Mineral Processes <input checked="" type="checkbox"/> DEP7007M Metal Cleaning Degreasers <input checked="" type="checkbox"/> DEP7007N Source Emissions Profile <input type="checkbox"/> DEP7007P Perchloroethylene Dry Cleaning Systems <input type="checkbox"/> DEP7007R Emission Offset Credit <input type="checkbox"/> DEP7007S Service Stations <input type="checkbox"/> DEP7007T Metal Plating and Surface Treatment Operations <input checked="" type="checkbox"/> DEP7007V Applicable Requirements and Compliance Activities <input type="checkbox"/> DEP7007Y Good Engineering Practice and Stack Height Determination <input type="checkbox"/> DEP7007AA Compliance Schedule for Non-complying Emission Units <input type="checkbox"/> DEP7007BB Certified Progress Report	<input type="checkbox"/> DEP7007CC Compliance Certification <input checked="" type="checkbox"/> DEP7007DD Insignificant Activities <input type="checkbox"/> DEP7007EE Internal Combustion Engines <input type="checkbox"/> DEP7007FF Secondary Aluminum Processing <input checked="" type="checkbox"/> DEP7007GG Control Equipment <input checked="" type="checkbox"/> DEP7007HH Haul Roads <input type="checkbox"/> Confidentiality Claim <input type="checkbox"/> Ownership Change Form <input type="checkbox"/> Secretary of State Certificate <input checked="" type="checkbox"/> Flowcharts or diagrams depicting process <input type="checkbox"/> Digital Line Graphs (DLG) files of buildings, roads, etc. <input checked="" type="checkbox"/> Site Map <input checked="" type="checkbox"/> Map or drawing depicting location of facility <input checked="" type="checkbox"/> Safety Data Sheet (SDS) <input type="checkbox"/> Emergency Response Plan <input type="checkbox"/> Other: _____

Section AI.6: Signature Block	
<p>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.</p>	
Signed by:  _____ 94B461635C5C44E... Authorized Signature _____ Kenny Pitakis _____ Type or Printed Name of Signatory	_____ 5/28/2026 _____ Date _____ VP, Operations _____ Title of Signatory
*Responsible official as defined by 401 KAR 52:001.	

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007B Manufacturing or Processing Operations ___ Section B.1: Process Information ___ Section B.2: Materials and Fuel Information ___ Section B.3: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG. ___ Attach a flow diagram ___ Attach SDS								
Source Name: <u>MELCO HVAC US, Inc.</u>										
KY EIS (AFS) #: <u>21- 161-00038</u>										
Permit #: <u>0</u>										
Agency Interest (AI) ID: <u>35349</u>										
Date: <u>3/13/2026</u>										
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)
EU#1	Degreasing	Aqueous degreasing operation using 6 wash baths and 5 rinse baths.	P001	Assembly Wash Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#2	Rust Prevention	Anti-rust bath	P001	Assembly Wash Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#3	Electric Drying Oven	Parts dryer	P001	Assembly Wash Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#4	Brazing Process	Torch for use on steel parts	P002	Brazing and Welding	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#5	Welding	MIG, TIG, MAG and plasma welding	P002	Brazing and Welding	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#6	Paint Dipping	Dip coating	P003	Paint Dipping	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#7	Wet Machining	Using cutting fluid for machining process	P004	Assembly Area	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#8	C/S Mn Line	Degreasing, manganese phosphate treatment, chemical treatment, and rust inhibitor dipping	P004	C/S Mn Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#9	Two (2) Electric Drying Ovens	Parts Dryers	P004	C/S Mn Line	Unknown	Unknown	07/2026	Batch	N/A	N/A
EU#10	Machining	Buffing process after the C/S Mn line process	P005	Machining	Unknown	Unknown	07/2026	Batch	N/A	N/A

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007DD</h2> <h3 style="margin: 0;">Insignificant Activities</h3> <p style="margin: 0;"> <input type="checkbox"/> Section DD.1: Table of Insignificant Activities <input type="checkbox"/> Section DD.2: Signature Block <input type="checkbox"/> Section DD.3: Notes, Comments, and Explanations </p>
Source Name:	<u>MELCO HVAC US, Inc.</u>
KY EIS (AFS) #:	<u>21- 161-00038</u>
Permit #:	<u>0</u>
Agency Interest (AI) ID:	<u>35349</u>
Date:	<u>3/13/2026</u>

Section DD.1: Table of Insignificant Activities

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

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA#1	12 - QA rooms for testing compressors	N/A	None – no regulated emissions	0
IA#2	Paved Roads	N/A	401 KAR 52:030, general dust control	<5 tpy PM/PM10/PM2.5
IA#3	Aqueous Degreasers	Unknown	401 KAR 52:020 – Insignificant Activities	0
IA#4	2 - N.G. 60 kW Backup Generators	Unknown	40 CFR 60, Subpart JJJJ, 40 CFR 63 Subpart ZZZZ	1.23 tpy NOx

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/ Signed by:)SSIBILITY OF FINE OR IMPRISONMENT.

	_____ 94B461635C5C44E... Authorized Signature	_____ Date
By:	Kenny Pitakis	VP, Operations
	Type/Print Name of Signatory	Title of Signatory

Section EE.6: Notes, Comments, and Explanations

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007HH Haul Roads _____ Section HH.1: Haul Roads _____ Section HH.2: Yard Area _____ Section HH.3: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI, DEP7007N and DEP7007V ___ SDS for dust suppressant
--	---	--

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section HH.1: Haul Roads

HH.1A Unpaved Haul Roads:

Average Number of Days in a Year with 0.01 inches of Precipitation (P): _____ Days

Mean Vehicle Weight (W): _____ Tons

Surface Material Silt Content (s): _____ %

Haul Road Length: _____ Miles

Maximum Vehicle Miles Traveled in a Year: _____ Miles

Describe the dust control method for unpaved haul road(s):
 (If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Wet Suppression

Emission factor: Wet Suppression Value taken from AP-42 11.19.1-5

HH.1B Paved Haul Roads:

Average Number of Days in a Year with 0.01 inches of Precipitation (P): 125 Days

Mean Vehicle Weight (W): 48 Tons

Road Surface Silt Loading (sL): 9.7 (G/M²)

Haul Road Length: 0.13 Miles

Maximum Vehicle Miles Traveled in a Year: 580.7 Miles

Describe the dust control method for paved haul road(s):
 (If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Section HH.2: Yard Area (Aggregate Handling And Storage Piles):

Average Number of Days in a Year with 0.01 inches of Precipitation (P): _____ Days

Mean Wind Speed (U): _____ MPH

Material Moisture Content (M): _____ %

Describe the dust control method for yard area:
 (If dust control suppressants will be utilized, attach the approved Safety Data Sheet(s), as applicable.)

Stockpile fugitive emissions are based on the amount of fugitive particulate emissions created by wind erosion of material storage piles, based on 8,760 hours of use and USEPA's AP 42 (Pre 1983 Edition), Section 11.2.3 emission factor methodology. See Attachment B - Calculations for complete details and methodology.

DEP7007K

Surface Coating or Printing Operations

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

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

Additional Documentation

Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

Attach SDS or Technical Sheets for all Coating/Printing Materials

Attach a flow diagram

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section K.1: Process Information

Emission Unit #: EU#11

Emission Unit Name: Spray Coating Booth

Coating/Printing Line Name: _____

Proposed/Actual Date of Construction: (MM/YYYY) Jul-26

List Applicable Regulations: 401 KAR 59:225

Describe Overall Process: High-volume low-pressure air spray guns for applying coating to metal parts

Describe Coatings/Printing Materials: Defric coating, an additive and a solvent are used

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

Provide detailed description of material coated/printed: Metal parts for HVAC compressors

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

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: _____

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

Describe Final Product: HVAC Compressors

- Check the category that most closely describes this unit:**
- Large Appliance Coating
 - Beverage Can Coating
 - Fabric, Vinyl, or Paper Coating
 - Publication Rotogravure Printing
 - Graphic Arts using Rotogravure and Flexographic Printing
 - Auto or Light-Duty Truck Coating
 - Miscellaneous Metal Parts Coating
 - Boat Manufacturing/ Ship Repair
 - Coating of Plastic Parts for Business Machines
 - Metal Furniture Coating
 - Magnet Wire Insulation Coating
 - Pressure Sensitive Tape and Label Coating
 - Flexible Vinyl and Urethane Coating and Printing
 - Metal Coil Coating
 - Flat Wood Panel Coating
 - Magnet Tape Coating
 - Other: _____

Section K.2: Coating Operations					
K.2A: For Spray Coating					
Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
EU#11	Application of coating	<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input checked="" type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic	1.05 gal/hr	<input type="checkbox"/> Testing <input checked="" type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
If spray guns are used simultaneously, describe:					
K.2B: For Brush Coating					
Describe Function:					
Maximum Coating Application Rate: <i>(gal/hr)</i>					
K.2C: For Roller Coating					
Roller Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

K.2D: For Powder Coating					
Powder Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
If powder coating material is recycled, describe:					
K.2E: For Flow Coating					
Flow Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
K.2F: For Dip Tank/Electrodeposition Coating					
Tank ID	Describe Function	Maximum Make-up Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

11/2018

DEP7007K

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:
Complete Form DEP7007B as applicable

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity <i>(MMBtu/hr)</i>	Fuel	Control Device/Stack ID
	Electric dryer	N/A		N/A

K.3C: For Purge

Type: _____

Daily Usage: _____ gal/day

K.3D: For Clean-up

Type: Manual Automatic

Daily Usage: _____ hrs/day

Operating Hours: _____

K.3E: For Other Equipment

Describe Processes:

Section K.4: Coatings/Printing Materials As Applied

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

Trade Name of Material	Description <i>(Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)</i>	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density <i>(lb/gal)</i>	Solid Content <i>(lb/gal)</i>	VOC Content <i>(lb/gal)</i>	Emission Factor for PM* <i>(lb/SCC)</i>	Transfer Efficiency <i>(%)</i>	Emission Factor for VOC <i>(lb/SCC)</i>	Capture Efficiency <i>(%)</i>	Control Device/ Stack ID
DEFRIC COAT HMB-2M	Coating	EU#11	40200301	gal	9.17	0.736	8.44		65		98	CE#1/ S1
Additive ADX-35	Additive	EU#11	40200301	gal	8.92	2.67	6.25		65		98	CE#1/ S1
Solvent HMB-2	Solvent	EU#11	40200301	gal	8.59	0	8.59		100			

*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
DEFRIC COAT HMB-2M	Xylene	1330-20-7	V	10		CE#1/ S1
DEFRIC COAT HMB-2M	1,4 Dioxane	123-91-1	V	50		CE#1/ S1
DEFRIC COAT HMB-2M	Ethylbenzene	100-41-4	V	10		CE#1/ S1
Additive ADX-35	1,4 Dioxane	123-91-1	V	50		CE#1/ S1
Solvent HMB-2	1,4 Dioxane	123-91-1	V	70		CE#1/ S1

DEP7007K

Surface Coating or Printing Operations

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

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

Additional Documentation

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

Source Name: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section K.1: Process Information

Emission Unit #: EU#6

Emission Unit Name: Paint Dip Coating

Coating/Printing Line Name: _____

Proposed/Actual Date of Construction: (MM/YYYY) Jul-26

List Applicable Regulations: 401 KAR 59:225

Describe Overall Process: Dip coating for applying coating to metal parts

Describe Coatings/Printing Materials: PPG Powercron 10 (P100-491)

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

Provide detailed description of material coated/printed: Metal parts for HVAC compressors

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

Identify the Type of Operation: Continuous Batch Other: _____

Describe Surface Preparation/Pretreatment Steps: None

For Coating Operations: Spray Flow Dip tank Electrodeposition Brush Powder Roller Coat Other: _____

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

Describe Final Product: HVAC Compressors

Check the category that most closely describes this unit:

- Large Appliance Coating
- Beverage Can Coating
- Fabric, Vinyl, or Paper Coating
- Publication Rotogravure Printing
- Graphic Arts using Rotogravure and Flexographic Printing
- Auto or Light-Duty Truck Coating
- Miscellaneous Metal Parts Coating
- Boat Manufacturing/ Ship Repair
- Coating of Plastic Parts for Business Machines
- Metal Furniture Coating
- Magnet Wire Insulation Coating
- Pressure Sensitive Tape and Label Coating
- Flexible Vinyl and Urethane Coating and Printing
- Metal Coil Coating
- Flat Wood Panel Coating
- Magnet Tape Coating
- Other: _____

Section K.2: Coating Operations					
K.2A: For Spray Coating					
Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
If spray guns are used simultaneously, describe:					
K.2B: For Brush Coating					
Describe Function:					
Maximum Coating Application Rate: <i>(gal/hr)</i>					
K.2C: For Roller Coating					
Roller Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

K.2D: For Powder Coating					
Powder Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
If powder coating material is recycled, describe:					
K.2E: For Flow Coating					
Flow Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
K.2F: For Dip Tank/Electrodeposition Coating					
Tank ID	Describe Function	Maximum Make-up Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined		
EU#6	Application of coating by dipping	0.67 lb/hr	<input type="checkbox"/> Testing <input checked="" type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet		

11/2018

DEP7007K

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes:
Complete Form DEP7007B as applicable

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity <i>(MMBtu/hr)</i>	Fuel	Control Device/Stack ID
	Electric dryer	N/A		N/A

K.3C: For Purge

Type: _____

Daily Usage: _____ gal/day

K.3D: For Clean-up

Type: Manual Automatic

Daily Usage: _____ hrs/day

Operating Hours: _____

K.3E: For Other Equipment

Describe Processes:

Section K.4: Coatings/Printing Materials As Applied

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

Trade Name of Material	Description <i>(Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)</i>	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density <i>(lb/gal)</i>	Solid Content <i>(lb/gal)</i>	VOC Content <i>(lb/gal)</i>	Emission Factor for PM* <i>(lb/SCC)</i>	Transfer Efficiency <i>(%)</i>	Emission Factor for VOC <i>(lb/SCC)</i>	Capture Efficiency <i>(%)</i>	Control Device/ Stack ID
PPG Powercron 10X	Coating	EU#6	40200302	lb/yr	8.82	0.08	0.26	0	100	3.46x10-6	N/A	None

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

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007M Metal Cleaning Degreasers ___ Section M.1: Cold Cleaning Degreasers Only ___ Section M.2: Open Top Vapors Degreasers ___ Section M.3: Conveyorized Degreasers ___ Section M.4: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG ___ Attach SDS for solvent
--	--	---

Source: MELCO HVAC US, Inc.

KY EIS (AFS) #: 21- 161-00038

Permit #: 0

Agency Interest (AI) ID: 35349

Date: 3/13/2026

Section M.1: Cold Cleaning Degreasers Only

Emission Unit #: _____

Emission Unit Name: _____

Control Device/Stack #: _____

Manufacturer: _____

Model/Serial Number: _____

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

Type: Dip Tank Spray Sink

Maximum Operating Schedule:

Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: _____

Manufacturer: _____

Maximum Amount Solvent Used: _____ gal/hr _____ gal/yr

Maximum Volatility at 100°F: _____ mmHg

Equipment Design

Inside dimensions of tank: Width (ft): _____ Length (ft): _____ Depth (ft): _____ 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: _____

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.2: Open Top Vapor Degreasers

Emission Unit #: _____
 Emission Unit Name: _____
 Control Device/Stack #: _____
 Manufacturer: _____
 Model/Serial #: _____

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

Maximum Operating Schedule:

Hours/Day

Days/Week

Weeks/Year

Solvent Information

Trade Name: _____
 Manufacturer: _____
 Maximum Amount Solvent Used: _____ gal/hr _____ gal/yr
 Maximum Volatility at 100°F: _____ mmHg

Equipment Design

Inside dimensions of tank: Width (ft): _____ Length (ft): _____ Depth (ft): _____ Freeboard Height (ft): _____
 If sprayed, indicate spray pressure: _____ psi

Type of Safety Switches

Choose all that apply:
 Condenser flow switch and thermostat Spray safety switch Vapor level control thermostat

Type of Vapor Level Controls

Choose all that apply: Chilled Water or Refrigerant Condensing Coil None
 Temperature of cooling liquid: (°F) _____

Method of Heating

Choose all that apply: Gas Steam Electric
 Rating: _____ Btu/hr kW

Type of Cleaning Action (choose all that apply)

Choose all that apply: Sonic Spray Vapor Condensation Immersion in liquid Mechanical Mixing

Other (specify):

Tank Cover (choose all that apply)

Choose all that apply: Automatic Manual None
 Is the tank covered when not in use? Yes No

Describe disposal of waste solvent and sludge:

Control Device

Identify if any are utilized: Enclosed Design Carbon Adsorption Refrigerated Chiller Freeboard Ratio greater than or equal to 0.75

Other (specify):

Air Flow

Are the parts to be degreased moved in and out at a vertical speed of less than 11 ft/min? Yes No

What is the exhaust air flow? _____ cfm

Section M.3: Conveyorized Degreasers

Emission Unit #: EU#1, IA#3
Emission Unit Name: Aqueous Potassium Hydroxide Degreasers
Control Device/Stack #: None
Manufacturer: _____
Model/Serial No.: _____
Proposed/Actual Date of Commencement Construction (MM/YYYY): Jul-26

Type: Cold Solvent Vapor Degreasing

Maximum Operating Schedule:

16	5	50
Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: _____
Manufacturer: _____
Maximum Amount Solvent Used: _____ gal/hr 85176 KOH solution gal/yr
Maximum Volatility at 100°F: 46 mmHg

Equipment Design

Inside dimensions of tank: Width (ft): unknown Length (ft): _____ Depth (ft): _____ Freeboard Height (ft): _____

Is the tank covered when not in use? Yes No

If sprayed, indicate spray pressure: _____ psi

Indicate if any of the following are utilized: Drying Tunnel Tumbling or Rotating Baskets

Describe the work load design specifications:

Type of Safety Switches

Choose all that apply:

Condenser flow switch and thermostat Spray safety switch Vapor level control thermostat

Method of Heating

Choose all that apply: Gas Steam Electric

Rating: _____ Btu/hr _____ kW

Control Device

Identify if any are utilized: Refrigerated Chiller Carbon Adsorption

Other: (specify)

Operating Parameters

Actual conveyor speed: _____ ft/min

Flow rate of exhaust: _____ cfm

Maximum vertical conveyor speed at exit or entrance of the degreaser: _____ ft/min

Temperature of solvent bath: _____ °F _____ °C

Describe disposal of waste solvent, sludge from the still and solvent from the adsorber:

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI
Source Name: <u>MELCO HVAC US, Inc.</u>		
KY EIS (AFS) #: <u>21- 161-00038</u>		
Permit #: <u>0</u>		
Agency Interest (AI) ID: <u>35349</u>		
Date: <u>3/13/2026</u>		

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU#1	Degreasing	Aqueous degreasing operation using 6 wash baths and 5 rinse baths.	P001	None	None	None	52208	None	0	Mass Balance	0.00%	0.00%	0	0	0	0
EU#2	Rust Prevention	Anti-rust bath	P001	None	None	None	70720 11700 11700	VOC Single HAP Total HAPs	4.9x10-6 1.2x10-6 1.2x10-6	Mass Balance	0.00%	0.00%	0.35 0.01 0.01	0.35 0.01 0.01	1.54 0.05 0.05	1.54 0.05 0.05
EU#3	Electric Drying Oven	Parts dryer	P001	None	None	None	None	None	None	None	0.00%	0.00%	0	0	0	0
EU#4	Brazing Process	Torch for use on steel parts	P002	None	None	None	2.76	PM10/2.5 Single HAP Total HAPs	0.0055	AP-42	0.00%	0.00%	0.015 0.001 0.001	0.015 0.001 0.001	0.066 0.006 0.006	0.066 0.006 0.006
EU#5	Welding	MIG, TIG, MAG and plasma welding	P002	None	None	None	7.157	PM10/2.5 Single HAP Total HAPs	0.0055	AP-42	0.00%	0.00%	0.038 0.0034 0.0034	0.038 0.003 0.003	0.166 0.015 0.015	0.166 0.015 0.015
EU#6	Paint Dipping	Dip coating	P003	None	None	None	26000	VOC Single HAP Total HAPs	3.46x10-6 2.63x10-7 2.63x10-7	Mass Balance	0.00%	0.00%	0.09 0.0068 0.0068	0.09 0.0068 0.0068	0.38 0.03 0.03	0.38 0.03 0.03
EU#7	Wet Machining	Using cutting fluid for machining process	P004	None	None	None	0.1	VOC	0.3	Mass Balance	0.00%	0.00%	0.03	0.03	0.13	0.13
EU#8	C/S Mn Line	Degreasing, manganese phosphate treatment, chemical treatment, and rust inhibitor dipping	P004	None	None	None	0.024 0.923 0.142 0.142	PM10/2.5 VOC Single HAP Total HAPs	0.83 1.09 0.86 0.89	Mass Balance	0.00%	0.00%	0.02 1.01 0.12 0.13	0.02 1.01 0.12 0.13	0.09 4.44 0.53 0.55	0.09 4.44 0.53 0.55
EU#9	Two (2) Electric Drying Ovens	Parts Dryers	P004	None	None	None	None	None	None	None	0.00%	0.00%	0	0	0	0

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI														
Source Name: <u>MELCO HVAC US, Inc.</u>																
KY EIS (AFS) #: <u>21-161-00038</u>																
Permit #: <u>0</u>																
Agency Interest (AI) ID: <u>35349</u>																
Date: <u>3/13/2026</u>																
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 (lbSCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU#10	Machining	Buffing process after the C/S Min line process	P005	None	None	None	385.7	PM PM10/2.5 Single HAP Total HAPs	1.19x10-3 1.56x10-4 1.56x10-4 1.56x10-4	AP-42	0.00%	0.00%	0.46 0.06 0.06 0.06	0.46 0.06 0.06 0.06	2.03 0.26 0.26 0.26	2.03 0.26 0.26 0.26
EU#11	Paint Prep and Spray Coating Booth	Mixing, pressurizing and spraying paint	P006	Dry Filters	CE#1	S1	1.05	PM10/2.5 VOC Single HAP Total HAPs	0.163 8.350 4.94 6.21	Mass Balance	100.00%	98.00%	0.171 8.767 5.192 6.516	0.003 8.767 5.192 6.516	0.75 38.40 22.74 28.54	0.015 38.40 22.74 28.54
EU#12	Burnish Brushing	Dry brushing process to adjust the substrate roughness before and after painting.	P006	None	None	None	77.14	PM PM10/2.5	1.3x10-3 2.59x10-4	AP-42	0.00%	0.00%	0.1 0.02	0.1 0.02	0.4 0.06	0.4 0.06
EU#13	Electric Drying Oven	Drying	P006	None	None	None	None	None	None	None	0.00%	0.00%	0	0	0	0
EU#14	Dismantling Room	Cutting and sanding of defective compressors to inspect internal components	P007	None	None	None	38.58	PM PM10/2.5	1.04x10-3 1.56x10-4	AP-42	0.00%	0.00%	0.04 0.006	0.04 0.006	0.2 0.02	0.2 0.02
EU#15	Natal Etching	Etching using ethyl alcohol and nitric acid	P008	None	None	None	500	VOC	1.83x10-5	Mass Balance	0.00%	0.00%	0.009	0.009	0.04	0.04
EU#16	Core Press (Die Maintenance)	Regrinding of dies for maintenance purposes.	P009	None	None	None	500	PM PM10/2.5 Single HAP Total HAPs	1.2x10-3 1.6x10-4 1.6x10-4 1.6x10-4	AP-42	0.00%	0.00%	0.6 0.08 0.08 0.08	0.6 0.08 0.08 0.08	2.63 0.34 0.34 0.34	2.63 0.34 0.34 0.34
EU#17	Four (4) Stamping Presses	Metal stamping using a lubricant	P010	None	None	None	0.965	VOC Single HAP Total HAPs	6.59 0.066 0.066	Mass Balance	0.00%	0.00%	6.36 0.064 0.064	6.36 0.064 0.064	27.87 0.28 0.28	27.87 0.28 0.28
EU#18	Winding Injection Molding	Addition of insulation	P011	None	None	None	12.98	PM10/2.5 VOC CO	5.24x10-5 7.01x10-5 1.77x10-5	Mass Balance	0.00%	0.00%	0.00068 0.00091 0.00023	0.00068 0.00091 0.00023	0.003 0.004 0.001	0.003 0.004 0.001

Section N.4: Notes, Comments, and Explanations

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007V Applicable Requirements and Compliance Activities	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; padding: 2px;">Additional Documentation</th> </tr> <tr> <td style="padding: 2px;"> <input type="checkbox"/> Complete DEP7007AI </td> </tr> </table>	Additional Documentation	<input type="checkbox"/> Complete DEP7007AI			
Additional Documentation							
<input type="checkbox"/> Complete DEP7007AI							
<input type="checkbox"/> Section V.1: Emission and Operating Limitation(s) <input type="checkbox"/> Section V.2: Monitoring Requirements <input type="checkbox"/> Section V.3: Recordkeeping Requirements <input type="checkbox"/> Section V.4: Reporting Requirements <input type="checkbox"/> Section V.5: Testing Requirements <input type="checkbox"/> Section V.6: Notes, Comments, and Explanations							
Source Name: <u>MELCO HVAC US, Inc.</u> KY EIS (AFS) #: <u>21- 161-00038</u> Permit #: <u>0</u> Agency Interest (AI) ID: <u>35349</u> Date: <u>3/13/2026</u>							
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)
EU#11	Paint prep and spray coating booth	401 KAR 59:225	VOC	Meet VOC content limit	N/A	N/A	VOC content limits verified from manufacturer SDS
EU#11	Paint prep and spray coating booth	401 KAR 59:010	Particulates	N/A	N/A	Dry filter condition	Daily logs
EU#11	Paint prep and spray coating booth	401 KAR 59:010	Particulates	N/A	N/A	Overspray observation	Monthly logs

ATTACHMENT B

List of Emission Units

LIST OF EMISSION UNITS

1. The “Wash Line” degreasing operation in the Assembly area, consisting of washing machines and barrel washing, with one turnover per week, as follows:

Machine	Chemical	Size (gallons)	Conc (% vol)
Washing Bath 1	PK-4860	185	5
Washing Bath 2	PK-4860	185	5
Washing Bath 3	PK-4860	185	5
Washing Bath 4	PK-4860	185	5
Rinsing Bath 1	Water	40	100
Rinsing Bath 2	Water	27	100
Rinsing Bath 3	Water	27	100

Machine	Chemical	Size (gallons)	Conc (% vol)
Washing Bath 1	PK-4860	132	5
Washing Bath 2	PK-4860	132	5
Rinsing Bath 1	Water	66	100
Rinsing Bath 2	Water	53	100

2. The “Rust Prevention Line” in the Assembly area, with one turnover per week, as follows:

Machine	Chemical	Size (gallons)	Conc (% vol)
Rust Prevention	MG-RC74/ MB-802	93	2

3. One (1) electric drying oven in the Assembly area.
4. One (1) brazing process in the Assembly area, consisting of a natural gas torch with a brazing steel usage of 13,229 pounds per year, using no controls.
5. One (1) welding operation in the Assembly area, using 33,069 pounds per year of Lincoln Electric SuperArc L-56.
6. One (1) paint dipping operation in the Assembly area, using 13 tons of paint per year. It consists of a tunnel that encloses an overhead conveyor.
7. Wet machining with Castrol Syntilo 9930 cutting fluid. The cutting fluid is changed every six months.
8. The “C/S Mn Line”, consisting of:
 - (a) Degreasing, manganese phosphate treatment, chemical treatment, and rust inhibitor dipping. The chemical names and usage rates are shown below:

Machine	Chemical	Amount
Degreaser 1	Henkel Bonderite C-AK 305 Alkaline	1,507 kg/yr
Degreaser 2		
Mn Phosphate Treatment	Bonderite M-ACM	403 kg/yr
Chemical Treatment		
Tank 1	Bonderite M-MN Lubrite 2	1,238 kg/yr
Tank 2	Bonderite M-AD 10	243 kg/yr
Tank 3	Bonderite M-AD 40	113 kg/yr
Tank 4	Detergent 1000	960 kg/yr
Rust Inhibitor	Ethyl Acetate	3,735 kg/yr
	Moly CS	258 kg/yr

(b) Two electric drying ovens.

9. The “Machining – Buffing” process after the “C/S Mn Line”, processing one (1) million pieces per year, with a weight of 420 grams per piece. Equipped with a dust collector for particulate control.
10. One (1) “Burnish Brushing” process before painting in the Defric area, each weighing 420 grams.
11. One (1) paint preparation room and one (1) coating booth for coating metals pieces in the Defric area, using high volume low pressure (HVLP) paint applicators. The booth is equipped with fabric filters for particulate control.
12. One (1) “Burnish Brushing” process after painting in the Defric area, each weighing 420 grams.
13. One (1) electric drying oven for the Defric area.
14. The “Dismantling Room” for periodic cutting and sanding of defective compressors to inspect internal components. Sharp edges are sanded for safe handling. Processing one (1) thousand units per year, with a weight of 420 grams per unit. Emissions are uncontrolled.
15. One (1) Naital etching process involving a Naital solution (5% Nitric Acid, 95% Ethyl Alcohol) applied to a test sample surface using a cotton swab at room temperature.
16. The “Core Press (Die Maintenance)” area, capable of processing a maximum of two (2) 10,000-pound dies each week. Equipped with a dust collector for particulate emissions control, consisting of:

- (a) Two (2) large surface grinders for regrinding dies.
- (b) One (1) small surface grinder for regrinding dies.

17. The "Press" line consisting of:

- (a) Four (4) stamping presses, using a lubricant.
- (b) Four (4) Hoop TIG welding machine with no controls.

18. The "Winding" line consisting of:

- (a) One (1) core closing TIG welder.
- (b) Insulator plastic injection molding, using a resin and a water-soluble release agent.

19. The "Sheet Metal" line consisting of:

- (a) Plasma welding,
- (b) MAG welding, and;
- (c) Two washing machines (#22 and #24 wash tanks)

20. Fourteen (14) quality assurance test rooms for testing HVAC compressors.

21. One (1) "Final Wash" washing machine (#26 wash tank) consisting of the same degreasing and rust preventative materials used in the Assembly area.

22. Paved and unpaved roadways.

23. Two (2) 60kW natural gas backup generators.

ATTACHMENT C

Supporting Calculations

Emission Summary

Uncontrolled PTE (tons/year)										
Emission Units	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	Total HAP	Highest Single HAP	
Assembly Wash Line	-	-	-	-	-	0.00	-	-	-	-
Rust Prevention Lines	-	-	-	-	-	1.54	-	0.05	0.05	Glycol Ether
Defric Spray Booth	0.75	0.75	0.75	-	-	38.40	-	28.54	22.74	1,4 dioxane
Dip Coating	-	-	-	-	-	0.38	-	0.03	0.03	MIBK
Wet Machining	-	-	-	-	-	0.13	-	-	-	-
C/S Mn Line	0.09	0.09	0.09	-	-	4.44	-	0.55	0.53	Mn
Emergency Generators	0.00	0.00	0.00	0.00	1.23	0.04	0.10	0.02	0.02	Formaldehyde
Welding	0.23	0.23	0.23	-	-	-	-	0.02	0.02	Mn
Machining	5.26	0.68	0.68	-	-	-	-	0.60	0.34	CO
Winding Insulator Molding	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	n-hexane
Press Line Stamping	-	-	-	-	-	27.87	-	0.28	0.28	Xylene
Naital Etching	-	-	-	-	-	0.04	-	-	-	-
Final Wash	-	-	-	-	-	0.00	-	-	-	-
Total:	6.34	1.76	1.76	0.00	1.23	72.83	0.10	30.09	22.74	1,4 dioxane

Limited PTE (tons/year)										
Emission Units	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	Total HAP	Highest Single HAP	
Assembly Wash Line	-	-	-	-	-	0.00	-	-	-	-
Rust Prevention Lines	-	-	-	-	-	1.54	-	0.05	0.05	Glycol Ether
Defric Spray Booth	0.75	0.75	0.75	-	-	38.40	-	22.00	9.99	1,4 dioxane
Dip Coating	-	-	-	-	-	0.38	-	0.03	0.03	MIBK
Wet Machining	-	-	-	-	-	0.13	-	-	-	-
C/S Mn Line	0.09	0.09	0.09	-	-	4.44	-	0.55	0.53	Mn
Emergency Generators	0.00	0.00	0.00	0.00	1.23	0.04	0.10	0.02	0.02	Formaldehyde
Welding	0.23	0.23	0.23	-	-	-	-	0.02	0.02	Mn
Machining	5.26	0.68	0.68	-	-	-	-	0.60	0.34	CO
Winding Insulator Molding	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	n-hexane
Press Line Stamping	-	-	-	-	-	27.87	-	0.28	0.28	Xylene
Naital Etching	-	-	-	-	-	0.04	-	-	-	-
Final Wash	-	-	-	-	-	0.00	-	-	-	-
Total:	6.34	1.76	1.76	0.00	1.23	72.83	0.10	23.54	9.99	1,4 dioxane

**Emissions Calculations
 Assembly Wash Line
 VOC and HAP Emission Calculations
 Degreaser PK-4860**

Emission Unit ID*		Amount (gallons/yr)	Degreaser Used	Conc (% vol)	VOC Content (lb/gal)	VOC Emissions (tons/yr)
Washing Machines						
	Bath 1	Degreasing Parts	9620	PK-4860	5%	0.00
	Bath 2		9620	PK-4860	5%	0.00
	Bath 3		9620	PK-4860	5%	0.00
	Bath 4		9620	PK-4860	5%	0.00
Barrel Washing						
	Bath 1	Degreasing Parts	6864	PK-4860	5%	0.00
	Bath 2		6864	PK-4860	5%	0.00
					Total Emissions	0.00

Potential to Emit

PK-4860 contains 5% by volume potassium hydroxide which contains 0% VOC by weight and no HAPs
 Weight VOC (lb VOC/gal PK-4860) = 1.25 specific gr * 8.34 lb/gal * fraction VOC (0.0) = 0.00 lb VOC/gal

Total Potential VOC (tons/yr) = VOC Content (0.00 lb/gal) * %Vol * Amt gal/yr * 1 ton/2000 lb

**Emissions Calculations
 Assembly & Sheet Metal Lines - Rust Prevention
 VOC and HAP Emission Calculations
 Rust Prevention MG-RC74/ MB-802**

Assembly - Washing Machines Rust Prevention

Emission Unit ID*	Material Used	Amount (gallons/yr)	Density (lb/gal)	Conc (% vol)	VOC Content (%)	VOC Emissions (tons/yr)
Assembly - Washing Machine Rust Prevention Tank	MG-RC74	4836	8.59	2%	46%	0.19
	MB-802	4836	7.92	0.1%	100%	0.02
						0.21

Assembly - Barrel Washing Rust Prevention Tank	MG-RC74	6864	8.59	2%	46%	0.27
	MB-802	6864	7.92	0.1%	100%	0.03
						0.30

Sheet Metal Line - Rust Prevention

Emission Unit ID*	Material Used	Amount (gallons/yr)	Density (lb/gal)	Conc (% vol)	VOC Content (%)	VOC Emissions (tons/yr)
Sheet Metal - Rust Prevention Tank #22	MG-RC74	12376	8.59	2%	46%	0.49
	MB-802	12376	7.92	0.1%	100%	0.05
						0.54

Sheet Metal - Rust Prevention Tank #24	MG-RC74	11284	8.59	2%	46%	0.45
	MB-802	11284	7.92	0.1%	100%	0.04
						0.49

Potential to Emit

Total Potential VOC (tons/yr) = Density (lb/gal) * VOC Content (%) * %Vol * Amt gal/yr * 1 ton/2000 lb

**Emissions Calculations
Wet Machining
VOC and HAP Emission Calculations**

Emission Unit ID*	Density (lbs/gal)	Amount (gallons/yr)	Degreaser Used	Conc (% vol)	VOC Emissions (tons/yr)
Wet Machining					
Machining	8.34	844	Castrol Syntilo 9930	3.70%	0.13
Total Emissions					0.13

Potential to Emit

Total Potential VOC (tons/yr) = VOC Content (%) * Density (lb/gal) * Gal/yr * 1 ton/2000 lb

Emissions Calculations
C/S Mn Line Degreasing, Chemical Treatment, Mos 2 Dipping
VOC and HAP Emission Calculations

Emission Unit ID*	Amount (kg/yr)	Material Used	Conc (% VOC)	Conc (% Mn Comp)	Conc (% Ni Comp)	VOC Emissions (tons/yr)	Mn Emissions (tons/yr)	Ni Emissions (tons/yr)
<i>Degreasing</i>								
	1507	Bonderite C-AK 305	0.139%	0%	0%	0.002308392	0	0
<i>Chemical Treatment</i>								
Bath 1	1238	Bonderite 'M-Mn Lubrite 2	0%	35%	1%	0.00	0.48	0.01
Bath 2	243	M-AD10	5%			0.01	0.00	0.00
Bath 3	113	M-AD40	0%			0.00	0.00	0.00
Bath 4	960	Detergent 1000	5%			0.05	0.00	0.00
<i>Mos 2 Dipping</i>								
Bath 1	258	Moly C-S	91%			0.26	0.00	0.00
Bath 2	3735	Ethyl Acetate	100%			4.12	0.00	0.00
Total Emissions						4.44	0.48	0.014

Potential to Emit

Total Potential VOC/HAP (tons/yr) = VOC Content (%) * Amt kg/yr * 2.204 lbs/kg * 1 ton/2000 lb

**Emissions Calculations
C/S Mn Line Powder Handling
PM and HAP Emission Calculations**

Emission Unit ID*	Amount (kg/yr)	Material Used	PM Emission Factor (%)	Conc (% Mn Compound)	PM Emissions (tons/yr)	Mn Emissions (tons/yr)
Powder Handling	403	Bonderite M-ACM	1%	60%	0.004	0.00
Total Emissions					4.44E-03	2.66E-03

Potential to Emit

Total Potential PM/PM10/PM2.5 (tons/yr) = PM EF (%) * Amt kg/yr * 2.204 lbs/kg * 1 ton/2000 lb

HAP Emissions (tons/yr) = PTE PM (tons/yr) * % HAP (SDS)

Emission factor from AP-42 Table 6.4-1 for particulates.

**Emissions Calculations
C/S Mn Line Phosphating**

Chemical	Bath Size (ft3)	Tank Surface Area (ft2)	Concentration (%)	VOC Content (%)	Mn Content (%)	Required Aeration (cfm/ft2)	Emission Factor (gr/dscf)	Uncontrolled PM/PM10/PM2.5 PTE (tons/yr)	Uncontrolled VOC PTE (tons/yr)	Uncontrolled Mn PTE (tons/yr)	Control Device
Bonderite M-ACM	26.50	16	50%	0	60%	10.00	2.85E-02	0.086	--	0.051	None
								0.086	0.00	0.051	

Methodology:

1. Nonelectrolytic plating PTE calculated using equation 4 from AP-42, Section 12.20: $E = 1.9 \cdot \sigma / R_b \left[\frac{((1-2a+9a^2)^{0.5} + (a-1))}{((1+3a) - (1-2a+9a^2)^{0.5})} \right]^{0.5}$

Where: E = emission factor, gr/dscf

Non Alkaline Solutions: $a = 0.072 \cdot R_b^2 / \sigma = (0.072 \cdot (0.05)^2) / 0.0048 = 0.0375$

Alkaline Solutions: $a = 0.072 \cdot R_b^2 / \sigma = (0.072 \cdot (0.05)^2) / 0.00274 = 0.06569$

R_b = average bubble radius, in. = 0.05 in Nonelectrolytic

σ = surface tension of bath, lbf/ft = 0.00274 lbf/ft alkaline solutions; 0.0048 lbf/ft other solutions

2. Uncontrolled PTE (ton/yr) = Surface area of tank (ft²) * Required aeration (cfm/ft²) * 60 min/hr * Emission factor (gr/dscf) * 1 lb/7000 grains * Chemical % in bath * 8760 hr/yr * 1 ton/2000 lb

**Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Assembly Line Paint Dipping

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Amt of Mat. (lbs/unit)	Maximum (units/year)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
PPG POWERCRON 10X (P100-491)	8.82	64.40%	61.5%	2.9%	65.1%	31.90%	0.02600	1000000.00	0.73	0.26	0.09	2.07	0.38	0.00	0.80	100%
											0.09	2.07	0.38	0.00		

Defric Painting

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Amt of Mat. (lbs/unit)	Maximum Rated Usage (gal/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
DEFRIC COAT HMB-2M	8.17	92.00%	0.0%	92.0%	0.0%	8.00%	0.01122	-	8.44	8.44	-	-	-	-	-	85%
Additive ADX-35	8.92	70.00%	0.0%	70.0%	0.0%	30.00%	0.00072	-	0.25	0.25	-	-	-	-	-	65%
Solvent HMB-2	8.59	100.00%	0.0%	100.0%	0.0%	0.00%	0.00404	-	8.59	8.59	-	-	-	-	-	100%
Mixed As Applied	9.02	93.04%	0.00%	93.04%	0.00%	6.96%	0.01	1.05	8.38	8.38	8.77	210.39	38.40	0.75	120.49	73.86%

Potential Emissions Add worst case coating to all solvents **0.01598** **8.77** **210.39** **38.40** **0.75**

METHODOLOGY

Assembly Line Paint Dipping

Potential VOC Tons per Year = Wt % VOC * Amt of Material (lbs/unit) * Maximum (units/yr) * (1 ton/2000 lbs)
 Particulate Potential Tons per Year = (units/hour) * (lbs/unit) * (lbs/gal) * (1-Weight % Volatiles) * (1-Transfer efficiency) *(1 ton/2000 lbs)
 Total = Worst Coating + Sum of all solvents used

Defric Painting

Maximum Rated Usage of Spray Gun = 66 cc/min or 1.04612 gal/hr as provided from the supplier
 Potential VOC Tons per Year = VOC Content, lbs/gal * Maximum Rated Usage of Spray Gun (gal/hr) * 8760 (hrs/yr) * (1 ton/2000 lbs)
 Particulate Potential Tons per Year = Maximum Rated Usage of Spray Gun (gal/hr) * Density (lbs/gal) * (1-Weight % Volatiles) * (1-Transfer efficiency) * 8760 (hrs/yr) *(1 ton/2000 lbs)
 Total = Worst Coating + Sum of all solvents used

**Emission Calculations
HAP Emission Calculations**

Assembly Line Paint Dipping

Material	Density (Lb/Gal)	Amount of Material (lbs/unit)	Maximum Rated Usage (unit/year)	Weight % Xylene	Weight % 1,4 Dioxane	Weight % Ethylbenzene	Weight % MIBK	Xylene Emissions (ton/yr)	1,4 Dioxane Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	MIBK Emissions (ton/yr)
PPG POWERCRON 10X (P100-491)	8.82	0.0260	1000000.00	0.00%	0.00%	0.00%	0.20%	0.00	0.00	0.00	0.03
Total Potential Emissions								0.00	0.00	0.00	0.03

Defric Painting

Material	Density (Lb/Gal)	Gallons of Material (lbs/unit)	Maximum Rated Usage (gal/hour)	Weight % Xylene	Weight % 1,4 Dioxane	Weight % Ethylbenzene	Weight % MIBK	Xylene Emissions (ton/yr)	1,4 Dioxane Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)	MIBK Emissions (ton/yr)
DEFRIC COAT HMB-2M	9.17	0.011217	-	10.00%	50.00%	10.00%	0.00%				
Additive ADX-35	8.92	0.000716	-	0.00%	50.00%	0.00%	0.00%				
Solvent HMB-2	8.59	0.004043	-	0.00%	70.00%	0.00%	0.00%				
Mixed As Applied	9.02		1.05	7.02%	55.06%	7.02%	0.00%	2.90	22.74	2.90	0.00
Total Potential Emissions								2.90	22.74	2.90	0.00

METHODOLOGY

Assembly Line Paint Dipping

HAPS emission rate (tons/yr) = Amt of Material (lbs/unit) * Maximum (unit/yr) * Weight % HAP * 1 ton/2000 lbs

Defric Painting

HAPS emission rate (tons/yr) = Maximum Rated Usage (gal/hr) * Density (lb/Gal) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

**Emission Calculations
Naital Etching**

Naital Etching

Material	Density (Lb/mL)	Gallons of Material (mL/year)	Weight % Material	Material	VOC Emissions (ton/yr)	HNO3 Emissions (ton/yr)
Naital	0.179	500.00	95.00%	Ethyl Alcohol	0.04	0.00
		25.00	5.00%	Nitric Acid	0.00	0.00

Total Potential Emissions

0.04 0.00

METHODOLOGY

Emission rate (tons/yr) = Amt of Material (mL/yr) * Density (lb/ml) * Weight % VOC * 1 ton/2000 lbs

**Emission Calculations
Press Line Stamping**

Press Line Stamping

Material	Density (Lb/Gal)	Gallons of Material (gals/year)	Weight % VOC	Weight % Xylene	VOC Emissions (ton/yr)	Xylene Emissions (ton/yr)
Sunpress S-162A Lubricant	6.59255	8454.43	100%	1.00%	27.87	0.28
Total Potential Emissions					27.87	0.28

METHODOLOGY

Emission rate (tons/yr) = Amt of Material (gals/yr) * Density (lb/gal) * Weight % VOC * 1 ton/2000 lbs

**Emissions Calculations
Winding - Insulator Injection Molding**

Unit ID	Quantity	Maximum Capacity (lbs/hr)	Emission Factors* (lbs/ton)				Potential Emissions				
			PM/PM10/PM2.5	VOC	CO	HAPs	PM/PM10/PM2.5 (tons/yr)	VOC (tons/yr)	CO (tons/yr)	HAPs (tons/yr)	
PBT Resin	1	11.80	0.1302	0.0614	0.04	0.00	0.003	0.002	0.001	0.00	N/A
Mold Release	1	1.18		1.0		0.05	0.000	0.003	0.000	1.29E-04	n-hexane
Totals							0.003	0.004	0.001	0.000	

Notes:

VOC and PM emission factors are from Fact Sheet #9847 (revised 11/05) from the Michigan EGLE.

There are no emission factors for these types of processes in AP-42 or U.S. EPA WebFIRE.

CO emission factor is based on Patel, S.H and Xanthos, M. (1995) "Volatile Emissions During Thermoplastics Processing - A Review", Advances in Polymer Technology , Vol. 14, pp. 67-77

Assume PM = PM 10 = PM 2.5

Methodology:

PTE (tons/yr) = Max throughput rate (lbs/hr) * Emission Factor (lbs/ton) * 1 ton/2000 lbs * 8760 hrs/yr * 1 ton/2000 lbs

**Emissions Calculations
Facility-Wide Welding**

Process	Number of Stations	Maximum electrode consumption per station (lbs/hr)	Maximum electrode consumption per station (lbs/day)	Emission Factors* (lb pollutant/lb electrode)				Potential to Emit (lbs/hr)				HAPs (lbs/hr)
				PM/PM10/PM2.5	Mn	Ni	Cr	PM/PM10/PM2.5	Mn	Ni	Cr	
Assembly Line - Brazing	1	2.76	44.10	0.0055	0.0005			0.015	1.4E-03	0	0	1.4E-03
Assembly Line - L-56 MIG Welding	1	6.89	110.23	0.0055	0.0005			0.038	3.4E-03	0	0	3.4E-03
Winding - TIG Welding	1	0.01	0.17	0	0			0.000	0.0E+00	0	0	0.0E+00
Hoop TIG Welding	4	0.204	4.896	0	0			0.000	0.0E+00	0	0	0.0E+00
Sheet Metal Line - Plasma Welding	1	0.01	0.17	0	0			0.000	0.0E+00	0	0	0.0E+00
Sheet Metal Line - MAG Welding	1	0.043	0.69	0.0055	0.0005			0.000	2.2E-05	0	0	2.2E-05
Totals												
Potential to Emit (lbs/hr)								0.05	0.00	0.00	0.00	0.00
Potential to Emit (lbs/day)								1.28	0.12	0.00	0.00	0.12
Potential to Emit (tons/year)								0.23	0.02	0.00	0.00	0.02

Methodology:

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

Welding: Potential to Emit (lbs/hr) = (Number of stations) x (Maximum electrode consumption per station, lbs/hr) x (Emission Factor, lb pollutant/lb of electrode used)

Potential to Emit (lbs/day) = Potential to Emit (lbs/hr) x (24 hours/day)

Potential to Emit (tons/year) = Potential to Emit (lbs/hr) x (8,760 hours/year) x (1 ton/2,000 lbs)

**Emissions Calculations
Buffing, Sanding, Cutting and Grinding**

Unit ID	Quantity	Maximum Capacity (lbs/hr)	Emission Factors*		Particulates				HAPs		
			(lbs/ton)		PM		PM10/PM2.5**		(lbs/hr)	(tons/yr)	
			PM	PM10	(lbs/hr)	(tons/yr)	(lbs/hr)	(tons/yr)			
Production Activities											
Burnish Brush Before Painting	1	38.57	2.4	0.3	0.05	0.20	0.01	0.03	0.00	0.00	
Burnish Brush After Painting	1	38.57	2.4	0.3	0.05	0.20	0.01	0.03	0.00	0.00	
Dismantling Room Cutting	1	19.29	2.4	0.3	0.02	0.10	0.00	0.01	0.00	0.00	
Dismantling Room Sanding	1	19.29	2.4	0.3	0.02	0.10	0.00	0.01	0.00	0.00	
Buffing After C/S	1	385.70	2.4	0.3	0.46	2.03	0.06	0.26	0.06	0.26	Mn
Core Press Die Maintenance	1	500.00	2.4	0.3	0.60	2.63	0.08	0.34	0.08	0.34	CO
Totals						5.26		0.68		0.60	

Notes

*The emission factors for PM and PM10 are from AP 42-11.24-2 Metallic Minerals Processing -Dry Grinding (Table 11.24-2, SCC#30302410). In the absence of valid AP 42 emission factors, PM 2.5 emissions are assumed equal to PM10 emissions.

** Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a regulated air pollutant. US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Methodology

Emission Rate for PM and PM₁₀ before controls (lbs/hr) = Maximum capacity (lbs/hr) * (1 ton/2000 lbs) * Emission Factor (lbs/ton)

Emission Rate for PM and PM₁₀ before controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) *(1 ton/2000 lbs)

**Emission Calculations
Fugitive Dust Emissions - Paved Roads**

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	9.0	1.0	9.0	48.0	432.0	700	0.133	1.2	435.5
Vehicle (leaving plant) (one-way trip)	3.0	1.0	3.0	48.0	144.0	700	0.133	0.4	145.2
Totals			12.0		576.0			1.6	580.7

Average Vehicle Weight Per Trip = tons/trip
 Average Miles Per Trip = miles/trip

Unmitigated Emission Factor, Ef = $[k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	48.0	48.0	48.0	tons = average vehicle weight
sL =	9.7	9.7	9.7	g/m ² = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = $E * [1 - (p/4N)]$ (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext = $E_f * [1 - (p/4N)]$
 where p = days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	4.510	0.902	0.2214	lb/mile
Mitigated Emission Factor, Eext =	4.124	0.825	0.2025	lb/mile

Process	Mitigated PTE of PM (Before Control) (tons/yr)	Mitigated PTE of PM10 (Before Control) (tons/yr)	Mitigated PTE of PM2.5 (Before Control) (tons/yr)
Vehicle (entering plant) (one-way trip)	0.90	0.18	0.04
Vehicle (leaving plant) (one-way trip)	0.30	0.06	0.01
Totals	1.20	0.24	0.06

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight of Loaded Vehicle (tons/trip)] * [Maximum trips per day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Mitigated PTE (Before Control) (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Mitigated PTE (After Control) (tons/yr) = [Mitigated PTE (Before Control) (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particle Matter (<2.5 um)
 PTE = Potential to Emit

**Emissions Calculations
Final Wash Line Machining Units
VOC and HAP Emission Calculations
Degreaser PK-4860**

Emission Unit ID*		Amount (gallons/yr)	Degreaser Used	Conc (% vol)	VOC Content (lb/gal)	VOC Emissions (tons/yr)
Final Washing						
Bath 1	Degreasing Parts	32,968.00	PK-4860	5%	0.00	0.00
Total Emissions						0.00

Potential to Emit

PK-4860 contains 5% by volume potassium hydroxide which contains 0% VOC by weight and no HAPs
 Weight VOC (lb VOC/gal PK-4860) = 1.25 specific gr * 8.34 lb/gal * fraction VOC (0.0) = 0.00 lb VOC/gal

Total Potential VOC (tons/yr) = VOC Content (0.00 lb/gal) * %Vol * Amt gal/yr * 1 ton/2000 lb

**Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Lean-Burn (4SLB) Engines**

Two (2) 60 kW Natural Gas-Fired Emergency Generators

Maximum Output Horsepower Rating (hp)	161
Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr)	7500
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	603
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.59

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	7.71E-05	9.99E-03	9.99E-03	5.88E-04	4.08E+00	1.18E-01	3.17E-01
Potential Emissions (tons/yr)	0.0000	0.00	0.00	0.000	1.23	0.04	0.10

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	8.36E-03	0.003
Acrolein	5.14E-03	0.002
Benzene	4.40E-04	0.000
Biphenyl	2.12E-04	0.000
1,3-Butadiene	2.67E-04	0.000
Formaldehyde	5.29E-02	0.016
Methanol	2.50E-03	0.001
Hexane	1.10E-03	0.000
Toluene	4.08E-04	0.000
2,2,4-Trimethylpentane	2.50E-04	0.000
Xylene	1.84E-04	0.000
Total		0.02

HAP pollutants consist of the eleven highest HAPs included in AP-42 Table 3.2-2.

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
 Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]
 Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	2.2
Emission Factor in lb/MMcf**			
Potential Emission in tons/yr	33.17	0.38	0.00
Summed Potential Emissions in tons/yr	33.54		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	42.78		
CO2e Total in tons/yr based on 10/30/2009 federal GWPs	41		

Methodology

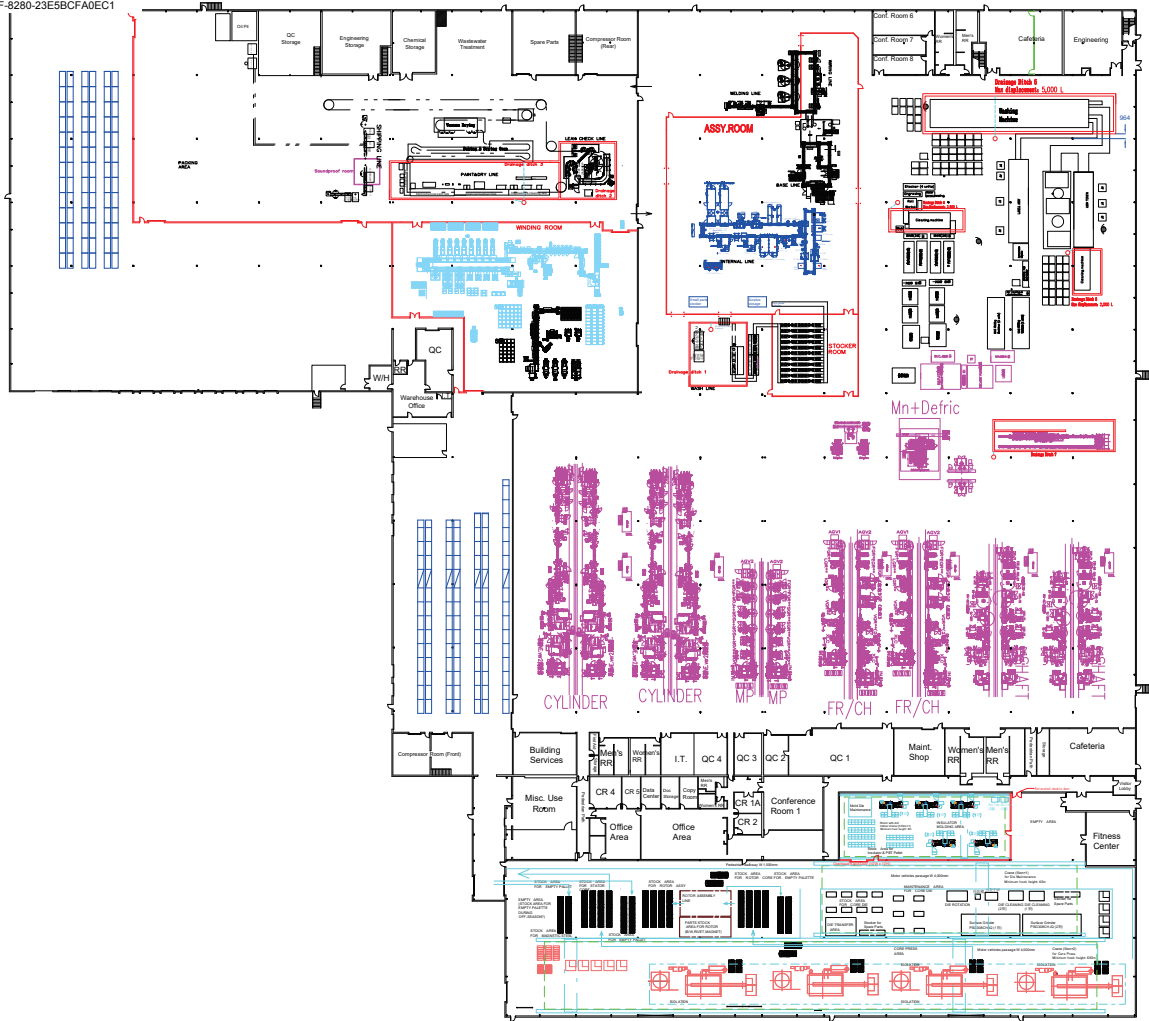
*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
 **The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
 For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
 CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).
 CO2e (tons/yr) based on 10/30/2009 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

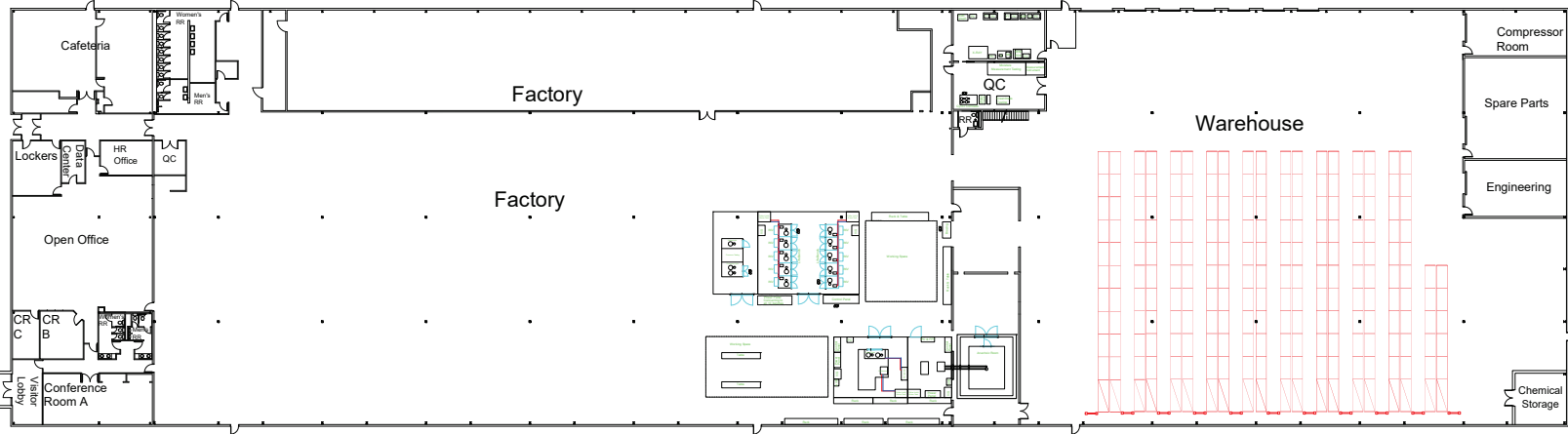
Abbreviations

PM = Particulate Matter	NOx = Nitrous Oxides	CO2 = Carbon Dioxide
PM10 = Particulate Matter (<10 um)	VOC = Volatile Organic Compounds	CH4 = Methane
SO2 = Sulfur Dioxide	CO = Carbon Monoxide	N2O = Nitrous Oxide
		CO2e = CO2 equivalent emissions

ATTACHMENT D

Process Flow Diagram





ATTACHMENT E

Site Map



ATTACHMENT F
Safety Data Sheets

Safety Data Sheet



Revision Number: 007.0

Issue date: 10/22/2025

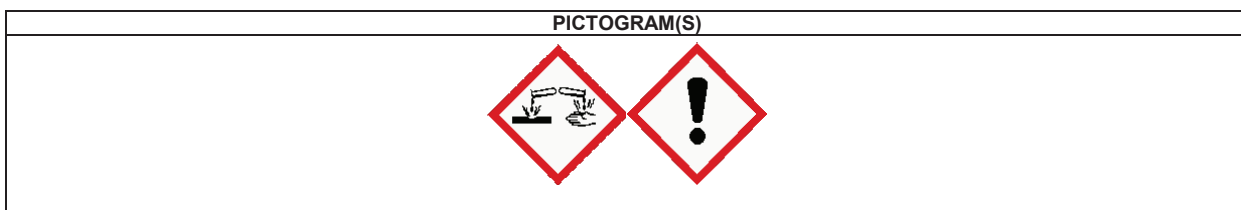
1. IDENTIFICATION

Product name: Product type/ Recommended use: Restriction of Use: Company address:	BONDERITE C-AK 305 ALKALINE CLEANER known as PARCO CLEANER 305 Cleaner None identified Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067	IDH number: Item number: Region: Contact information:	593947 593947 United States Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com
--	--	--	---

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H290 - MAY BE CORROSIVE TO METALS. H302 - HARMFUL IF SWALLOWED. H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
ACUTE TOXICITY ORAL	4
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1



Precautionary Statements

Prevention:	P234 - Keep only in original packaging. P264 - Wash affected area thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves, clothing, eye and face protection.
Response:	P301+P312+P330 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage.
Storage:	P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Tetrapotassium pyrophosphate	7320-34-5	10 - 30
Potassium hydroxide	1310-58-3	10 - 30

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Skin contact:	Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Seek medical advice. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Thermal decomposition can lead to release of irritating gases and vapors.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. For industrial use only. Use good hygiene practices when handling this material, including changing and laundering work clothes after use. Discard contaminated shoes and leather goods. NEVER ADD WATER TO PRODUCT. For dilutions, add product slowly to water while stirring. Use caution; heat may be generated.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Potassium hydroxide	2 mg/m3 Ceiling	None	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Yellow
Odor: Mild
Odor threshold: Not available.
pH: > 13
Vapor pressure: Not available.
Boiling point/range: > 100 °C (> 212°F)calculated
Melting point/ range: Not determined
Density/Relative density: 1.41 - 1.44
Relative vapor density: Not determined
Flash point: Not applicable
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not determined
Flammability: Not applicable
Evaporation rate: Not available.
Solubility: Complete Water
Partition coefficient n-octanol/water (logarithmic value): Not determined
VOC content: 2 g/l EPA Method 24
Dynamic viscosity: Not available.
Kinematic viscosity: Not available.
Particle characteristics: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: Will not occur.

Hazardous decomposition products: Thermal decomposition can lead to release of irritating gases and vapors.

Incompatible materials: Adding water to this product may cause localized overheating and splattering.

Reactivity: This product reacts with acids.

Conditions to avoid: Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. May cause respiratory tract irritation.

Skin contact: Mists, vapors or liquid may cause severe irritation or burns. Causes skin burns.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness. Causes serious eye damage.

Ingestion: Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Hazardous Component(s)	LD50s and LC50s
Tetrapotassium pyrophosphate	Inhalation LC50 (Rat, 4 h) = > 0.58 mg/l Inhalation LC50 (Rat, 4 h) = > 1.1 mg/l
Potassium hydroxide	Oral LD50 (Rat) = 273 mg/kg Oral LD50 (Rat) = 1.23 g/kg

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Tetrapotassium pyrophosphate			
Potassium hydroxide	Corrosive Irritant		

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Tetrapotassium pyrophosphate	No	No	No
Potassium hydroxide	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal. This chemical contains phosphates.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (Potassium hydroxide, Tetrapotassium pyrophosphate)
Hazard class or division: 8
Identification number: UN 3266
Packing group: II
DOT Hazardous Substance(s): Potassium hydroxide

International Air Transportation (ICAO/IATA)

Proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (Potassium hydroxide, Tetrapotassium pyrophosphate)
Hazard class or division: 8
Identification number: UN 3266
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Potassium hydroxide, Tetrapotassium pyrophosphate)
Hazard class or division: 8
Identification number: UN 3266
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis
CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2
CERCLA/SARA Section 313: None above reporting de minimis.
CERCLA Reportable quantity: Potassium hydroxide (CAS# 1310-58-3) 1,000 lbs. (454 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 10/22/2025

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

Safety Data Sheet



Revision Number: 003.5

Issue date: 11/21/2024

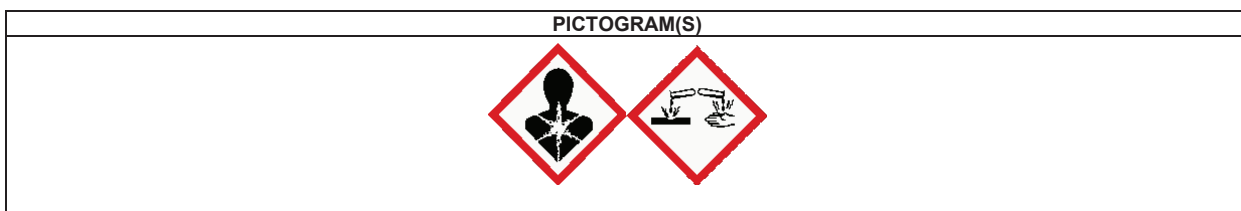
1. IDENTIFICATION

Product name:	BONDERITE M-AC M POWDERED CONDITIONING AGENT known as FIXODINE M	IDH number:	594557
Product type/ Recommended use:	Product for the conversion treatment of metals	Region:	United States
Restriction of Use:	None identified	Contact information:	Telephone: +1 (860) 571-5100
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067		MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. H373 - MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1
SERIOUS EYE DAMAGE	1
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	2



Precautionary Statements

Prevention:	P260 - Do not breathe dust. P264 - Wash affected area thoroughly after handling. P280 - Wear protective gloves, clothing, eye and face protection.
Response:	P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P314 - Get medical attention if you feel unwell. P363 - Wash contaminated clothing before reuse.
Storage:	P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Tetrasodium pyrophosphate	7722-88-5	30 - 60
Manganese hydrogen phosphate	51349-94-1	30 - 60

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

Non hazardous components

Actual concentration or concentration range is withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

- Inhalation:** If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.
- Skin contact:** Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.
- Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. If symptoms develop and persist, get medical attention.
- Ingestion:** Get immediate medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.
- Most important symptoms and effects (acute and delayed):** The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
- Indication of any immediate medical attention / special treatment needed:** Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

- Extinguishing media:** Use media appropriate for surrounding material.
- Improper extinguishing agents:** Not available.
- Special firefighting procedures:** Wear full protective clothing. Wear self-contained breathing apparatus.
- Unusual fire or explosion hazards:** Not a fire hazard. Formation of toxic gases is possible during heating or in fires.
- Hazardous combustion products:** Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

- Environmental precautions:** Wear appropriate personal protective equipment. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
- Clean-up methods:** Sweep up or gather material and place in appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing dust. For industrial use only.

Storage: Keep the container tightly closed and in a cool, well-ventilated place.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Manganese hydrogen phosphate	0.02 mg/m3 TWA (as Mn) Respirable fraction. 0.1 mg/m3 TWA (as Mn) Inhalable fraction.	5 mg/m3 Ceiling (as Mn)	None	None

Engineering controls: Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of dust, appropriate NIOSH/MSHA respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage must be implemented. If concentrations are below the TLV and/or PEL, a NIOSH approved disposable dust/mist respirator may be used for personal comfort. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-facepiece respirator equipped with dust-mist cartridges may be used. For concentrations greater than 10 times these limits, consult the NIOSH respirator decision logic found in Publication No. 87-116 or ANSI Z88.2-1992.

Eye/face protection: Wear chemical goggles.

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Butyl, Neoprene, PVC or Nitrile gloves recommended. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid
Color:	White
Odor:	Odorless
Odor threshold:	Not available.
pH:	9 - 12
Vapor pressure:	< 100 hPa (20 °C (68°F)) < 100 hPa (50 °C (122°F))
Boiling point/range:	> 100 °C (> 212°F)
Melting point/ range:	> 100 °C (> 212°F)
Density/Relative density:	0.925
Relative vapor density:	Not applicable, Product is a solid
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	The product is not flammable.
Evaporation rate:	Not applicable
Solubility:	Partially soluble Water
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	Not applicable
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.

Particle characteristics: < 1,500 µm
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.
Hazardous reactions: Will not occur.
Hazardous decomposition products: None expected.
Incompatible materials: This product reacts with acids.
Reactivity: Not available.
Conditions to avoid: Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: This product is irritating to the respiratory system. Inhalation may result in metal fume fever. Metal fume fever has flu-like symptoms including fever, chills, perspiration, cough, nasal irritation, chest pain, nausea, head ache, vomiting and muscular weakness.
Skin contact: Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.
Eye contact: Causes serious eye damage.
Ingestion: Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Hazardous Component(s)	LD50s and LC50s
Tetrasodium pyrophosphate	Inhalation LC50 (Rat, 4 h) = > 0.58 mg/l
Manganese hydrogen phosphate	Inhalation LC50 (Rat, 4 h) = > 1.1 mg/l None

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Tetrasodium pyrophosphate	Corrosive Irritant		Metabolic
Manganese hydrogen phosphate			

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Tetrasodium pyrophosphate	No	No	No
Manganese hydrogen phosphate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations. This chemical contains phosphates.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2

CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Manganese hydrogen phosphate (CAS# 51349-94-1).

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 11/21/2024

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.



Revision Number: 006.2

Issue date: 05/01/2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: BONDERITE M-AD 10
PRETREATMENT ADDITIVE known as ADDITIVE 10

Product type/use: Additive

Restriction of Use: None identified

Company address:
 Henkel Corporation
 One Henkel Way
 Rocky Hill, Connecticut 06067

IDH number: 594386

Region: United States

Contact information:
 Telephone: +1 (860) 571-5100
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CAUSES SKIN IRRITATION.
 CAUSES SERIOUS EYE IRRITATION.
 MAY CAUSE CANCER.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
CARCINOGENICITY	1A

PICTOGRAM(S)



Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash affected area thoroughly after handling. Wear protective gloves, clothing, eye and face protection.

Response: IF ON SKIN: Wash with plenty of water. 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 attention. If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

IDH number: 594386

Product name: BONDERITE M-AD 10 PRETREATMENT ADDITIVE known as ADDITIVE 10

Page 1 of 6

Hazardous Component(s)	CAS Number	Percentage*
Iron sulphate	7720-78-7	10 - 20
Sulfuric acid	7664-93-9	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Skin contact:	Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting.
Symptoms:	See Section 11.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire. Oxides of sulfur.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. For industrial use only. Provide adequate ventilation. Do not take internally.
Storage:	Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Iron sulphate	1 mg/m3 TWA (as Fe)	None	None	None
Sulfuric acid	0.2 mg/m3 TWA Thoracic fraction.	1 mg/m3 PEL	None	None

Engineering controls:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided. Air purifying respirators must use N, R, or P series filters. The filter must be NIOSH classification 95, 99, or 100. Protection provided by air-purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known; or any other circumstances where air purifying respirators may not provide adequate protection.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended. Recommended gloves include butyl rubber and neoprene.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Light green
Odor:	None
Odor threshold:	Not available.
pH:	1.85 - 2.25
Vapor pressure:	Not determined
Boiling point/range:	> 212 °F (> 100°C)
Melting point/ range:	Not determined
Specific gravity:	1.2 - 1.3
Vapor density:	Not determined
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not determined
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not determined
VOC content:	Not applicable
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Oxides of sulfur.
Incompatible materials:	Keep away from organic, alkaline, and oxidizing materials, metallic powders, chromates, chlorates, nitrates, and carbides. Reaction with reducing agents. Adding water to this product may cause localized overheating and splattering.
Reactivity:	Not available.
Conditions to avoid:	Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation:	May cause respiratory tract irritation.
Skin contact:	This product is severely irritating to the skin.
Eye contact:	This product is severely irritating to the eyes.
Ingestion:	Ingestion of this product may cause nausea, vomiting and diarrhea. May be harmful or fatal if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Iron sulphate	Oral LD50 (Mouse) = 1,520 mg/kg Oral LD50 (Rat) = 319 mg/kg Dermal LD50 (Rat) = 155 mg/kg Dermal LD50 (Mouse) = 60.3 mg/kg	Cardiac, Central nervous system, Corrosive, Gastrointestinal, Irritant, Kidney, Liver, Lung, Metabolic, Mutagen, Vascular
Sulfuric acid	None	Carcinogen, Corrosive, Irritant

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Iron sulphate	No	No	No
Sulfuric acid	Known To Be Human Carcinogen.	Group 1	No

12. ECOLOGICAL INFORMATION

Ecological information: Do not empty into drains / surface water / ground water.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002). Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
DOT Hazardous Substance(s): Ferrous sulfate

International Air Transportation (ICAO/IATA)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Additional information: IMDG-Code: Segregation group 1- Acids

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 313: None above reporting de minimis.
CERCLA Reportable quantity: Iron sulphate (CAS# 7720-78-7) 1,000 lbs. (454 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 3

Prepared by: Cheryl Neason, Regulatory Affairs Specialist
Issue date: 05/01/2019

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

Safety Data Sheet



Revision Number: 004.0

Issue date: 12/11/2024

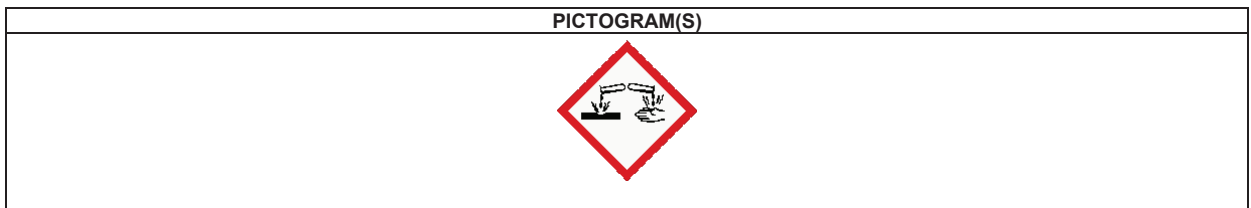
1. IDENTIFICATION

Product name:	BONDERITE M-AD 40 PRETREATMENT ADDITIVE known as PRIMER 40	IDH number:	593868
Product type/ Recommended use:	Cleaner	Region:	United States
Restriction of Use:	None identified	Contact information:	Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067		

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	H290 - MAY BE CORROSIVE TO METALS. H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1



Precautionary Statements

Prevention:	P234 - Keep only in original packaging. P260 - Do not breathe vapors, mist, or spray. P264 - Wash affected area thoroughly after handling.
Response:	P280 - Wear protective gloves, clothing, eye and face protection. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage.
Storage:	P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Sodium hydroxide	1310-73-2	10 - 30
Sodium chlorate	7775-09-9	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

Non hazardous components

Actual concentration or concentration range is withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.
Skin contact:	Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	This product is an aqueous mixture which will not burn.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Wear appropriate protective equipment and clothing during clean-up. Prevent further leakage or spillage if safe to do so. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. NEVER ADD WATER TO PRODUCT. For dilutions, add product slowly to water while stirring. Use caution; heat may be generated.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Manufacturer recommends storing above 4.4 °C (40 °F).

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Sodium hydroxide	2 mg/m3 Ceiling	2 mg/m3 PEL	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Colourless / Colorless
Odor:	Odorless
Odor threshold:	Not available.
pH:	14
Vapor pressure:	Water based.
Boiling point/range:	> 100 °C (> 212°F)
Melting point/ range:	Not applicable, Product is a liquid
Density/Relative density:	1.21 - 1.23 at 60 °F (15.56 °C) Freq 001
Relative vapor density:	Water based., Not applicable
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not applicable
Solubility:	Complete Water
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	0 %
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Particle characteristics:	Not applicable, Product is a liquid
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
Incompatible materials:	This product reacts with acids. Adding water to this product may cause localized overheating and splattering.
Reactivity:	Not available.
Conditions to avoid:	Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Mists, vapors or liquid may cause severe irritation or burns.
Skin contact:	This product is severely irritating to the skin and may cause burns.
Eye contact:	This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion:	This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.

Hazardous Component(s)	LD50s and LC50s
Sodium hydroxide	None
Sodium chlorate	Oral LD50 (Mouse) = 8,350 mg/kg Oral LD50 (Rabbit) = 7,200 mg/kg Oral LD50 (Rat) = 1,200 mg/kg Oral LD50 (Mouse) = 8,350 mg/kg Oral LD50 (Rabbit) = 7,200 mg/kg Oral LD50 (Rat) = 1,200 mg/kg

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Sodium hydroxide	Irritant Corrosive		Eyes
Sodium chlorate	Irritant		Blood Kidney Liver

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Sodium hydroxide	No	No	No
Sodium chlorate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Sodium hydroxide solution
Hazard class or division: 8
Identification number: UN 1824
Packing group: II
DOT Hazardous Substance(s): Sodium hydroxide

International Air Transportation (ICAO/IATA)

Proper shipping name: Sodium hydroxide solution
Hazard class or division: 8
Identification number: UN 1824
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: SODIUM HYDROXIDE SOLUTION
Hazard class or division: 8
Identification number: UN 1824
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2

CERCLA/SARA Section 313: None above reporting de minimis.

CERCLA Reportable quantity: Sodium hydroxide (CAS# 1310-73-2) 1,000 lbs. (454 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: This Safety Data Sheet contains changes from the previous version in Section(s): 9

Prepared by: Regulatory Affairs

Issue date: 12/11/2024

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

Safety Data Sheet



Revision Number: 008.0

Issue date: 02/24/2025

1. IDENTIFICATION

Product name: BONDERITE M-MN LUBRITE 2
MANGANESE PHOSPHATE known as PARCO LUBRITE 2
 Phosphating Products for Metals

IDH number: 1029786

Product type/ Recommended use:
Restriction of Use: None identified

Company address:
 Henkel Corporation
 One Henkel Way
 Rocky Hill, Connecticut 06067

Region: United States

Contact information:
 Telephone: +1 (860) 571-5100
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: H290 - MAY BE CORROSIVE TO METALS.
 H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
 H317 - MAY CAUSE AN ALLERGIC SKIN REACTION.
 H334 - MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.
 H350 - MAY CAUSE CANCER.
 H360 - MAY DAMAGE FERTILITY OR THE UNBORN CHILD.
 H372 - CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	1
SKIN CORROSION	1
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
CARCINOGENICITY	1A
REPRODUCTIVE TOXICITY	1B
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	1

PICTOGRAM(S)



Precautionary Statements

Prevention: P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P234 - Keep only in original packaging.
 P260 - Do not breathe vapors, mist, or spray.
 P264 - Wash affected area thoroughly after handling.

IDH number: 1029786

Product name: BONDERITE M-MN LUBRITE 2 MANGANESE PHOSPHATE known as PARCO LUBRITE 2

Response: P270 - Do not eat, drink or smoke when using this product.
 P272 - Contaminated work clothing should not be allowed out of the workplace.
 P280 - Wear protective gloves, clothing, eye and face protection.
 P284 - [In case of inadequate ventilation] wear respiratory protection.
 P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing.
 P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+P313 - IF exposed or concerned: Get medical attention.
 P333+P313 - If skin irritation or rash occurs: Get medical attention.
 P342+P311 - If experiencing respiratory symptoms: Call a poison center or physician.
 P362+P364 - Take off contaminated clothing and wash it before reuse.
 P390 - Absorb spillage to prevent material damage.
Storage: P405 - Store locked up.
Disposal: P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Manganese dihydrogen phosphate	18718-07-5	10 - 30
Phosphoric acid	7664-38-2	5 - 10
Manganese nitrate	10377-66-9	1 - 5
Nickel nitrate	13138-45-9	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. Do not induce vomiting.

Most important symptoms and effects (acute and delayed): The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.

Indication of any immediate medical attention / special treatment needed: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media: Use media appropriate for surrounding material.

Improper extinguishing agents: Not available.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: This product is an aqueous mixture which will not burn.

Hazardous combustion products: Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not take internally. Wash thoroughly after handling. Avoid breathing mists or aerosols of this product. For industrial use only. Do not mix this product with material which contain AMINES. NITROSAMINE may be formed.

Storage: For safe storage, store at or above 40 °F (4.4 °C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Manganese dihydrogen phosphate	0.02 mg/m ³ TWA (as Mn) Respirable fraction. 0.1 mg/m ³ TWA (as Mn) Inhalable fraction.	5 mg/m ³ Ceiling (as Mn)	None	None
Phosphoric acid	3 mg/m ³ STEL 1 mg/m ³ TWA	1 mg/m ³ PEL	None	None
Manganese nitrate	0.02 mg/m ³ TWA (as Mn) Respirable fraction. 0.1 mg/m ³ TWA (as Mn) Inhalable fraction.	5 mg/m ³ Ceiling (as Mn)	None	None
Nickel nitrate	0.1 mg/m ³ TWA (as Ni) Inhalable fraction.	1 mg/m ³ PEL (as Ni)	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1901.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit-testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage, must be implemented. If concentrations are below the TLV and/or PEL, a NIOSH approved disposable dust/mist respirator may be used for personal comfort. For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-face piece respirator equipped with dust-mist cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in Publication No.87-116 or ANSI Z88.2-1992. Note: ANSI Z88.2-1992 requires the use of a HEPA filter if the particle size distribution of the contaminant is unknown. **WARNING!** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Chemical resistant, impermeable gloves. Use of impervious apron and boots are recommended. Gloves should be tested to determine suitability for prolonged contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Green
Odor:	Bland
Odor threshold:	Not available.
pH:	< 1.0
Vapor pressure:	Not determined
Boiling point/range:	> 210 °F (> 98.9 °C)calculated
Melting point/ range:	Not determined
Density/Relative density:	1.29 - 1.37 at 15.6 °C (60.08 °F)
Relative vapor density:	Not determined
Flash point:	160 °C (320°F) HST-US 027F
Flammable/Explosive limits - lower:	Not applicable
Flammable/Explosive limits - upper:	Not applicable
Autoignition temperature:	Not available.
Flammability:	Not applicable
Evaporation rate:	Not applicable
Solubility:	Complete Water
Partition coefficient n-octanol/water (logarithmic value):	Not determined
VOC content:	Not applicable
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Particle characteristics:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Decomposes with heat to produce oxides of nitrogen.
Incompatible materials:	This product may react with strong alkalis.
Reactivity:	Not available.
Conditions to avoid:	None expected.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Mists, vapors or liquid may cause severe irritation or burns.
Skin contact: Contact with liquid may produce severe skin irritation including redness, inflammation and chemical burns. Product contains a nickel compound, which may cause an allergic skin sensitization reaction.
Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.

Hazardous Component(s)	LD50s and LC50s
Manganese dihydrogen phosphate	None
Phosphoric acid	Oral LD50 (Rat) = 1,530 mg/kg Dermal LD50 (Rabbit) = 2,740 mg/kg
Manganese nitrate	None
Nickel nitrate	None

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Manganese dihydrogen phosphate	Irritant		Behavioral Blood Developmental Kidney Lung Mutagen Nervous System Reproductive Respiratory
Phosphoric acid	Irritant Corrosive		
Manganese nitrate	Irritant		Behavioral Blood Cardiac Developmental Kidney Liver Lung Mutagen Nervous System Reproductive Respiratory Vascular
Nickel nitrate	Corrosive Irritant	Allergen	Blood Cardiac Central nervous system Developmental Immune system Kidney Liver Lung Mutagen Reproductive Respiratory Sensory Some evidence of carcinogenicity Vascular

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Manganese dihydrogen phosphate	No	No	No
Phosphoric acid	No	No	No
Manganese nitrate	No	No	No
Nickel nitrate	Known To Be Human Carcinogen.	Group 1	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Phosphoric acid solution
Hazard class or division: 8
Identification number: UN 1805
Packing group: III
DOT Hazardous Substance(s): Nickel nitrate

International Air Transportation (ICAO/IATA)

Proper shipping name: Phosphoric acid, solution
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: PHOSPHORIC ACID SOLUTION
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2

CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Nickel nitrate (CAS# 13138-45-9). Manganese nitrate (CAS# 10377-66-9).

CERCLA Reportable quantity: Manganese dihydrogen phosphate (CAS# 18718-07-5).

Nickel nitrate (CAS# 13138-45-9) 100 lbs. (45.4 kg)

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 02/24/2025

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This Safety Data Sheet has been generated based on OSHA Hazard Communication Standard (29 CFR 1910.1200) and provides information in accordance with U.S. federal law only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.

DETERGENT 1000

Version No:1.0
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name: DETERGENT 1000

Synonyms:

Cleaning preparations

Recommended use of the chemical and restrictions on use

Relevant identified uses:

Cleaning preparations (Do not use it except for industrial applications)

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	NEOS COMPANY LIMITED (Manufacturer)
Address	6-2-1,Kano-cho,Chuo-ku,Kobe,650-0001, Japan
Telephone	+81-78-331-9381

Emergency phone number

Association / Organisation	NEOS COMPANY LIMITED
Emergency telephone numbers	+81-78-331-9381

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Sensitisation (Skin) Category 1
----------------	---------------------------------

Label elements

Hazard pictogram(s)



Signal word: Warning

Hazard statement(s)

H317: May cause an allergic skin reaction.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

- P280: Wear protective gloves and protective clothing.
- P261: Avoid breathing mist/vapours/spray.
- P272: Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

- P302+P352: IF ON SKIN: Wash with plenty of water.
- P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
- P362+P364: Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

Store locked up.

Precautionary statement(s) Disposal

P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
102-71-6	1-5	2,2',2''-Nitrilotri(ethan-1-ol)
Trade secret	<3	Surfactant
Trade secret	<1	Antifoaming agents
	>90	Water and non-hazardous substances

SECTION 4 First-aid measures**Description of first aid measures****Eye Contact**

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

Ingestion

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

SECTION 5 Fire-fighting measures**Extinguishing media**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture**Fire Incompatibility**

None known.

Special protective equipment and precautions for fire-fighters**Fire Fighting**

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- **DO NOT** approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.

Fire/Explosion Hazard

- Non combustible.
 - Not considered a significant fire risk, however containers may burn.
- May emit corrosive fumes.

SECTION 6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up**Minor Spills**

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

Major Spills

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage**Precautions for safe handling****Safe handling**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- **DO NOT** allow material to contact humans, exposed food or food utensils.
- **DO NOT** allow clothing wet with material to stay in contact with skin

Other information**SECTION 8 Exposure controls / personal protection****Control parameters****Occupational Exposure Limits (OEL)****INGREDIENT DATA**

Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
2,2',2"-Nitrilotri(ethan-1-ol)	E	≤ 0.1 ppm
Notes:	<i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i>	

Exposure controls**Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and 'removes' air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Individual protection measures, such as personal protective equipment**Eye and face protection**

- Safety glasses with side shields.
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

Hands/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

Body protection

See Other protection below

Other protection

- Overalls.
- P.V.C apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

:

Light yellow

Physical state	Liquid	Relative density (Water = 1)	1.045
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	8.0	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (mm²/s)	1.8
Initial boiling point and boiling range (°C)	≥100		
Flash point (°C)	None		
Evaporation rate	Not Available		
Flammability	Not Available		
Upper Explosive Limit (%)	Not Available		
Lower Explosive Limit (%)	Not Available		
Vapour pressure (kPa)	Not Available		
Solubility in water	Miscible		
Vapour density (Air = 1)	Not Available		

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability:

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous reactions:

See section 7

Conditions to avoid:

See section 7

Incompatible materials:

See section 7

Hazardous decomposition products:

See section 5

SECTION 11 Toxicological information

Information on toxicological effects

DETERGENT 1000

DETERGENT 1000	TOXICITY	IRRITATION
	Not Available	Not Available
2,2',2''-Nitrilotri(ethan-1-ol)	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >20000 mg/kg ^[2]	Eye (rabbit): 0.1 ml -
	Dermal (rabbit) LD50: 16 ml/kg ^{+[2]}	Eye (rabbit): 10 mg - mild
	dermal (rat) LD50: >16000 mg/kg ^[2]	Eye (rabbit): 5.62 mg - SEVERE
	Intraperitoneal (mouse) LD50: 1450 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Intraperitoneal (rat) LD50: 1510 mg/kg ^[2]	Skin (human): 15 mg/3d (int)-mild
	Oral (g.pig) LD50: 2200 mg/kg ^[2]	Skin (rabbit): 4 h occluded no irritation *
	Oral (Guinea) LD50; 2200 mg/kg ^[2]	Skin (rabbit): 560 mg/24 hr- mild minor iritis, minor conjunctival irritation with significant discharge; no corneal injury *
Oral (Mouse) LD50; 5846 mg/kg ^[2]	Skin: no adverse effect observed (not irritating) ^[1]	

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

DETERGENT 1000	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
2,2',2''-Nitrilotri(ethan-1-ol)	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	<0.4	7
	LC50	96h	Fish	11800mg/l	2
	EC50	72h	Algae or other aquatic plants	>107<260mg/l	2
	NOEC(ECx)	Not Available	Fish	>1mg/l	2
	EC50	48h	Crustacea	565.2-658.3mg/l	4
	EC50	96h	Algae or other aquatic plants	169mg/l	1

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
2,2',2''-Nitrilotri(ethan-1-ol)	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
2,2',2''-Nitrilotri(ethan-1-ol)	LOW (BCF = 3.9)

Mobility in soil

Ingredient	Mobility
2,2',2''-Nitrilotri(ethan-1-ol)	LOW (Log KOC = 10)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse

- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 Transport information

Labels Required

Marine Pollutant

NO

	Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
UN number: NA			
UN proper shipping name: Not Applicable			
Transport hazard class(es): Not Applicable			
Subsidiary Hazard: Not Applicable			
Packing group: Not Applicable			

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

OSHA: Hazardous chemical

TSCA inventory:

All ingredients in this product are listed.

TSCA SNUR:

Not Applicable

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No

In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations**US. California Proposition 65**

None Reported

Additional State Regulatory Information

Not Applicable

SECTION 16 Other information**Revision Date:** 30/08/2024

(Made in Japan)

Initial Date: 30/08/2024**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the company Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC - TWA: Permissible Concentration-Time Weighted Average
- PC - STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit,
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECL: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

SAFETY DATA SHEET

SDS reference number: 1-00002-494020

Issue Date: 2023/2/14

1. IDENTIFICATION

PRODUCT NAME

(Chemical, Brand name etc.) : 酢酸エチル

Supplier	DAISHIN CHEMICAL CO., LTD.	
Address	〒105-0012 1-9-9 Shibadaimon Minato-Ward Tokyo-Metropolis.	
Telephone/Fax	03(3432)4786/03(3433)3618	
Name of section	Koshigaya Factory Technological section	Hyogo Factory Technological section
Address	〒343-0851 Shichiza-cho 4-316, Koshigaya-City,Saitama-Pref.	〒679-2215 Saiji Haio 860-26,Fukusaki-Town, Kanzaki-County,Hyogo-Pref.
Telephone/Fax	048(988)6921/048(985)6288	0790(23)0900/0790(23)1062
Recommended use	For manufacturing, cleaning, and testing of paints and printing inks, limited to uses stipulated by the Special Taxation Measures Law.	
Restrictions on use	Seek expert judgment when using for purposes other than those recommended.	

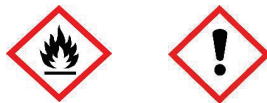
2. HAZARDS IDENTIFICATION

GHS Classification of the substance

Physical Hazards	Explosives	Not classified
	Flammable gases	Not classified
	Aerosols	Not classified
	Oxidizing gases	Not classified
	Gases under pressure	Not classified
	Flammable liquids	Category 2
	Flammable solids	Not classified
	Self-reactive substances and mixtures	Not classified
	Pyrophoric liquids	Not classified
	Pyrophoric solids	Not classified
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures which, in contact with water, emit flammable gases	Not classified
	Oxidizing liquids	Not classified
	Oxidizing solids	Not classified
Health Hazards	Organic peroxides	Not classified
	Corrosive to metals	Classification not possible
	Desensitized explosives	Not classified
	Acute toxicity (oral)	Not classified
	Acute toxicity (Dermal)	Not classified
	Acute toxicity (Gases)	Not classified
	Acute toxicity (Vapours)	Category 4
	Acute toxicity (Dust and Mists)	Classification not possible
	Skin corrosion/Irritation	Not classified
	Serious eye damage/Eye irritation	Category 2
	Respiratory sensitization	Classification not possible
	Skin sensitization	Not classified
	Germ cell mutagenicity	Not classified
	Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible	
Environmental Hazards	Specific target organ toxicity Single exposure	Category 3 (respiratory tract irritation, narcotic effects)
	Specific target organ toxicity Repeated exposure	Not classified
	Aspiration hazard	Classification not possible
	Hazardous to the aquatic environment	
	Acute aquatic toxicity	Not classified
	Chronic aquatic toxicity	Not classified
	Hazardous to the Ozone layer	Not classified

GHS Label elements

Picture display or Symbol:



Signal Word: Danger

Hazard statement:

Highly flammable liquid and vapour
Harmful if inhaled (Vapours)
Causes serious eye irritation
May cause respiratory irritation or May cause drowsiness or dizziness

Instructions: 【Safety measures】

Do not handle it till I read and understand all security attention.
Do not eat, drink or smoke when using this product.
Never use it at Place with fire, the one to generate spark and static electricity,

the vicinity of high temperature heat source etc.
 Moreover, an electric installation and an electric equipment must be assumed to be an explosion-proof construction, and equipment must take all earths.
 Take precautionary measures against static discharges, wear the electrification prevention uniform and an electrostatic safety shoes, etc.
 The sealing up equipment or the local exhaust device is installed and ventilate it enough in the handling work place.
 Wear suitable protective glove, protective spectacles, face shield, protection tool.
 Do not inhale a mist, steam, spray.
 Note no spill in surroundings enough when you put contents in and out from the container.
 Wash and gargle after handling.
 Avoid release to the environment, keep container tightly closed.
 Do not use it except the specified usage (Sniffing paint thinner etc.).

【For emergency】 Take an appropriate fire extinguishing method in the case of the fire.
 (Powder, Carbon dioxide, foam, etc.)
 Collect it by the proper procedure promptly at the leakage.
 If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing.
 If exposed or concerned, you feel unwell: Get medical advice / attention.
 If in eyes: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do.
 If eye irritation persists, get medical advice / attention.
 If on skin (or hair): Remove / take off immediately all contaminated clothing,
 Wash with plenty of soap and water.
 Wash / Decontaminate removed protective clothing before reuse.
 If skin irritation occurs, get medical advice / attention.
 If swallowed: Do not induce vomiting.
 Get medical advice / attention.

【Storage】 Store container tightly closed in well-ventilated place and locked up.
 Keep out of reach of children.

【The disposal】 Duties entrust the specialized waste disposal treatment supplier who took the permission of the Governor metropolis and districts with contents and a container

3. COMPOSITION / INFORMATION ON INGREDIENTS

•Product distinction: Substance (Ethyl acetate)

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Content [w t %]	Chemical formula	MITI No.	CAS No.	PRTR Law Control No.	ISHL Enforcement Order Attached table 9 No.
1	Ethyl acetate	100	CH3COOCH2CH3	2-726	141-78-6	Not identified	177

4. FIRST-AID MEASURES

If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing.
 Get medical advice / attention.
 If you feel unwell, get medical advice / attention.

If on skin: Remove contaminated clothing.
 Flush exposed area with water
 Wash with plenty of soap and water.
 If skin irritation occurs, get medical advice / attention.
 Get medical advice / attention.
 Wash / Decontaminate removed protective clothing before reuse.

If in Eyes: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do.
 Continue rinsing.
 If eye irritation persists, get medical advice / attention.
 Get medical advice / attention.

If swallowed: Rinse mouth.
 Do not induce vomiting as this may increase the risk of aspiration of the liquid into the lungs causing chemical pneumonitis.
 Get medical advice / attention.
 If you feel unwell, get medical advice / attention.

An expected acute symptom and a tardive symptom:
 Inhalation: Cough, Dizziness, Drowsiness, Headache.
 Skin contact: Dry skin, Redness.
 Eye Contact: Redness, Pain, Blurred vision.
 Ingestion: Cough, Dizziness, Drowsiness, Headache.

The most important sign and a symptom: No further details were available.

Protection of the person who takes measures emergency:
 The fire is noted. It is worn if there is a hazard mask for an organic solvent.

5. FIRE-FIGHTING MEASURES

Extinguishing media A small fire: Carbon dioxide, Powder, Watering, Alcohol-resistant-related fire foam
 An inferno: Watering, Water spray, Alcohol-resistant-related fire foam
 Do not use to extinction medicine: Cylinder shape pouring water.

Special danger hazardous property: A fire might extend oppositely by watering, use appropriate extinction medicines other than watering among the extinction medicines shown in the above-mentioned. Highly flammable. It ignites easily by heat, the spark, and the flame. The container might explode by heating. There is a threat that it occurs with pungency, the toxicity or corrosive gas by a fire. Highly flammable liquid and vapour.

A special fire extinguishing method: The flash point is extremely low. It waters it for a big fire in which extinction is not effective in the extinction medicines other than watering. If it is not dangerous, the container is moved from the fire district. It waters the container and surroundings when it is not possible to move and it cools. The fire extinguishing back cools a container with a large quantity of water enough, too.

Protection of the person who extinguishes fire.: On the occasion of fire extinguishing work, wear protection clothes for appropriate air respiratory organs, chemistry

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Protective equipment and emergency procedures: Do not touch the leak thing and do not walk the inside. Immediately, all the appropriate distance from the direction of isolation as the leakage area. Evacuate non essential personnel. The worker wears a tool for appropriate protection ("8. Exposure control/Personal protection" in reference.), and avoids eyes, contact to the skin and inhalation of the gas. When do not put on appropriate protection clothes, do not must touch a damaged container or the leak thing. When a fire does not occur even if leak out, wear protection clothes of sealing up-related loud impermeability. It stays in the windward. It leaves the low ground. It ventilates it before it enters the place sealed up.

Instructions for the environment: Rivers in emissions, environmental impact to avoid attention. Do not let this chemical enter the environment.

Collection, neutralization
 In case of a small quantity: It collects it to the empty container that can be sealed up by absorbing by a dry soil, sand, and a nonflammable material or covering. When absorbed to collect, clean tool to use antistatic.
 In case of in large quantities: A wall prevents an outflow by laying earth on the ground and I lead it to the safe place and collect it. Watering decreases the density of steam. However, it is not likely to be able to inhibit combustion in the place sealed up.

Containment and purification method・machine parts: If it is not dangerous, the leakage is stopped. All the equipment used when the leakage thing is handled is grounded. Because the evaporation density is decreased, the steam control bubble is used.

Prevention plan of secondary disaster : Shut off all sources of ignition (Smoking in neighborhood, spark, and prohibition of flame). The inflow to the drain ditch, the drainage ditch, the basement or the close place is prevented.

7. HANDLING AND STORAGE

Handling Technical measures: "8. Exposure control/Personal protection" to the facilities mentioned measures and to wear protective equipment.
 Limited part exhaust / total ventilation: "8. Exposure control/Personal protection" section of local exhaust, making the entire ventilation.
 Handling safety precautions: Do not handle it till I read and understand all security attention. Prohibit the high temperature thing at the outskirts, spark, use of the fire. Do not make the container fall, do not drop, and do not handle the addition of the impact or drag, etc. Do not come in contact, do not inhale or do not swallow. Avoid contact with eyes. Wash hands thoroughly after handling. Use it only in the outdoors or a good area of the ventilation. Do not eat, drink or smoke when using this product. Do not let this chemical enter the environment.
 Contact evasion: "10. Stability and reactivity" in reference.

Storage Technical measures: Assume the wall, the pillar, and the floor to be a fire-resisting construction, and build the beam with a nonflammable material in the inventory location. Storage space is to create a roof be noncombustible and other lightweight metal plate to be noncombustible cleaner, and it set no ceiling. Do the floor of the safekeeping place with structure water invades in a floor aspect or do not seep. It is assumed the structure that dangerous articles do not infiltrate, and the floor in the inventory location must apply an appropriate inclination, and install appropriate. The equipment of a lighting, and ventilation necessary to store or to handle dangerous articles is installed in the inventory location.
 Storage conditions: Keep it away from heat, a spark, a naked light, the firing source such as the thing of the high temperature.-Prohibition of smoking. Keep away from oxidants. Container must avoid direct sunshine and the fire. Keep it in the cold place where the container is sealed up and ventilation is good.

Lock and keep it.

Incompatible materials: "10. Stability and reactivity" in reference.

Container wrapping material: The container provided for by Fire Defense Law and the United Nations transportation regulations is used.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	JPISHL OEL [ppm]	Allowable concentration [ppm]	
			JP JSOH	ACGIH(TWA)
1	Ethyl acetate	200	200	400

Engineering measures: The work area of the steam source and handling, providing a closed system such as equipment or local exhaust ventilation.
Use appropriately electricity, ventilation, and the lighting of the explosion-proof.
Lecture on preventive measures to the static discharge.
Make available emergency shower and eye wash in where this material is stored or is handled.

Protective equipment
Respiratory protection: Wear suitable respiratory protection (Gas masks, air-supplied masks, air respirators, etc.).
Hand protection: Wear suitable glove (Impermeable).
Eye protection: Wear suitable eye protection. [Safety spectacles, Safety glasses, Safety goggles]
Skin and a tool for physical protection: Wear suitable protective clothing (Impermeable industrial hygiene protective clothing) and protection for appropriate faces.

Sanitary measures: Wash hands after handling it well.
When using do not eat or drink, smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state, colour: Colorless transparent liquid
 Odour: Solvent smell
 pH: Neutrality
 Melting point/freezing point: ≤-82°C (Melting point)
 Initial boiling point and boiling range: 77°C (Boiling point)
 Flash point: -4.0°C (Tag closed cup)
 Explosive limits: Lower limit 2.2 vol.%, Upper limit 11.4 vol.%
 Vapour pressure: 10,000Pa (20°C)
 Vapour density (air=1): 3.0
 Specific gravity(Density): 0.901 g/cm3 (20°C)
 Solubility: Insoluble (Water)
 Melttable in the Organic Solvent.
 Auto-ignition temperature: over 427°C

10. STABILITY AND REACTIVITY

Stability: This material is stable in the normal handling.
Heating may cause ignition.
As a result of flow, agitation, etc., electrostatic charges can be generated.

Dangerous, harmful, reactive possibility:
Reacts with strong oxidising agents, causing fire and explosion hazard.

Conditions to avoid: Heating. High temperature
 Incompatible materials: Strong oxidants, Strong acids, Strong alkali.
 Harmful resolution decomposition products.:
The carbon monoxide and the carbon dioxide are generated by the heating resolution.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (oral) Not classified
 Acute toxicity (Dermal) Not classified
 Acute toxicity (Gases) Not classified
 Acute toxicity (Vapours) Category 4 Harmful if inhaled
 Acute toxicity (Dust and Mists) Classification not possible
 Skin corrosion/Irritation Not classified
 Serious eye damage/Eye irritation Category 2 Causes serious eye irritation
 Respiratory sensitization Classification not possible
 Skin sensitization Not classified
 Germ cell mutagenicity Not classified
 Carcinogenicity Classification not possible
 Reproductive toxicity Classification not possible
 Specific target organ toxicity Single exposure Category 3 May cause respiratory irritation or May cause drowsiness or dizziness
 Specific target organ toxicity Repeated exposure Not classified
 Aspiration hazard Classification not possible

○Health Hazards of Ingredients

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Acute toxicity			
		oral	Dermal	Vapours	Dust/Mist
1	Ethyl acetate	Not classified	Not classified	Category 4	Classification not possible
INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Skin corrosion/ irritation	Serious eye damage/ irritation	Respiratory	Skin sensitization
1	Ethyl acetate	Not classified	Category 2B	Classification not possible	Not classified

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Germ cell mutagenicity	Carcinogenicity	Reproductive toxicity
1	Ethyl acetate	Not classified	Classification not possible	Classification not possible
INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Specific target organ systemic toxicity		Aspiration hazard
		Single exposure	Repeated exposure	
1	Ethyl acetate	Category 3(respiratory tract irritation, narcotic effects)	Not classified	Classification not possible

12. ECOLOGICAL INFORMATION

Hazardous to the aquatic environment:
 Acute aquatic toxicity Not classified
 Chronic aquatic toxicity Not classified
 Hazardous to the Ozone layer Not classified

○Environmental Hazards of Ingredients

INGREDIENTS No.	INGREDIENTS (Chemical name or common name)	Hazardous to the aquatic environment		Hazardous to the Ozone layer
		(Acute hazard)	(Chronic hazard)	
1	Ethyl acetate	Not classified	Not classified	Not classified

13. DISPOSAL CONSIDERATIONS

Material Disposal: Obey the law concerned and the standard of the local government.
 When the person who took the permission such as the Governor metropolis and districts of waste industry or local public entity works to the, I entrust there and process it.
 When I entrust you with disposal of waste, I entrust processing suppliers with processing in announcing danger, hazardous property enough.

A pollution container and packing: I perform appropriate disposal according to the law concerned and the standard of the local government whether the container cleans it and recycles it.
 When I dispose of an empty container, completely remove contents.

14. TRANSPORT INFORMATION

International Regulation

Sea regulation information It applies to regulations of IMO
 UN No.: 1173
 Proper Shipping Name: ETHYL ACETATE
 Class: 3
 Packing Group: II
 Marine Pollutant: Not applicable

Aviation regulation information It applies to regulations of ICAO/IATA
 UN No.: 1173
 Proper Shipping Name: ETHYL ACETATE
 Class: 3
 Packing Group: II

Domestic Regulation

Land regulation information It applies to regulations of Fire Service Law, Road law.
 Sea regulation information It applies to regulations of Ship Safety Law
 UN No.: 1173
 Proper Shipping Name: ETHYL ACETATE
 Class: 3
 Packing Group: II

Aviation regulation information It applies to regulations of Aviation law
 UN No.: 1173
 Proper Shipping Name: ETHYL ACETATE
 Class: 3
 Packing Group: II

Special safety measures

A transportation container the dangerous materials concerned fall to the dangerous materials or received dangerous materials drops, and load it I fall down or not to be damaged.
 Carry it dangerous materials or the container which received dangerous materials is remarkable, and not to raise friction or unrest.
 When there is a threat that dangerous materials leak remarkably, and a disaster occurs during the transportation of dangerous materials, I take an emergency step to prevent a disaster, and report it to the relations engine of the most much coming near firefighting engine others.
 Of avoid direct rays of the sun on the occasion of the transportation, and leaking it the damage of the container, corrosion load it so that there is not it, and perform prevention of the collapse of cargo surely.
 Do not transport it with food and feed.
 Do not do increase of heavy goods.
 The maintenance of the Yellow card is necessary at the time of transportation.

15. REGULATORY INFORMATION

- Fire Service Law: Dangerous Substances Class 4 Flammable Liquids Type 1 petroleum
- ISHL(Industrial Safety and Health Law):
 Enforcement Order, Article 18 Dangerous or Harmful Substances Subject to Be Indicated their Names, etc.
 Enforcement Order, Article 18-2 Dangerous or Harmful Substances Subject to Be Notified their Names, etc.
 Enforcement Order, Attached table 1 Dangerous Substances (Inflammable Substances)
 Ordinance on Prevention of Organic Solvent Poisoning : Second-class organic solvents

- Poisonous & Deleterious Substance Control Law: Deleterious Substances
 - Ship Safety Law: Flammable Liquids
 - Aviation law: Flammable Liquids
 - Odor control law: Enforcement Order, Article1 Bad smell substance (Ethyl acetate)
 - PRTR (Pollutant Release and Transfer) Law: Not identified
- ※ Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. OTHER INFORMATION

- References: Japan Industrial Safety and Health Association (JISHA)
National Institute of Technology and Evaluation (NITE)
Manufacturers SDS, etc.
- Other: The content of this book might revise regulations, and be revised by a new finding, the access to information, and the examination, etc.
- It is not the one to do any guarantee for data and the evaluation of the description though the content of the description is made based on the material that was able to be acquired now and information in the document etc. Close attention is necessary for handling because in all chemical products, there can be unknown danger and a hazardous property.
- It cannot be guaranteed that neither danger nor the hazardous properties other than can be unknown danger the content of the description exist though usual danger and the hazardous property are described in this book. The description matter is the one intended for usual handling, and it wishes handling after the safety plan that is appropriate for the usage and the usage is newly executed when special handling is done.
-

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

SAFETY DATA SHEET(SDS)

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name : Moly C-S
 Company Name : SUMICO LUBRICANT CO., LTD.
 Address : Shimbashi Sumitomo Bldg., 11-3, Shimbashi 5-chome Minato-ku, Tokyo 105-0004, Japan
 Phone Number : +81-3-5401-8515
 Fax Number : +81-3-5401-0471
 Mail Address : Lub_SUMICO@smm-g.com

2 HAZARDS IDENTIFICATION

Hazards Category

Flammable Liquids : Category 2
 Acute Toxicity(Inhalation) : Category 4
 Serious Eye Damage/Eye Irritation : Category 2B
 Reproductive Toxicity : Category 2
 Specific Target Organ Systemic Toxicity(Single Exposure) : Category 3

The one without the description cannot be classified.

Allocation of Label Elements

Pictogram

Flame
 Exclamation mark
 Health Hazard



Signal Word

Danger

Hazard Statement

Highly flammable liquid and vapour
 Harmful if inhaled
 Cause eye irritation
 Suspected of damaging fertility or the unborn child
 May cause harm to breast-fed children
 May cause respiratory irritation; or May cause drowsiness or dizziness

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients and Contents

Component name	CAS number	wt%
Molybdenum disulfide	1317-33-5	5~15
Ethyl acetate	141-78-6	80~90
Cellulose, nitrate	9004-70-0	1~5
2-Propanol	67-63-0	<1

4 FIRST-AID MEASURES

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 Call a physician if you feel unwell.

Skin

Wash with plenty of soap and water.
 Call a physician if you feel unwell.

Eye

Immediately flush eyes with plenty of water for at least 15 minutes.

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

Call a physician.

Ingestion

Rinse mouth. Do not induce vomiting.

Call a physician.

5 FIRE-FIGHTING MEASURES

Extinguishing Media

Dry chemical, carbon dioxide(CO2), and foam

Specific Fire Fighting

Must not use water to extinguish fires.

Quickly removed from the surrounding flammable.

The use of extinguishing agents specified.

Fire fighting is done from the windward.

On small fires use carbon dioxide (CO2) or dry chemical.

On large fires use dry chemical or foam.

Sealed containers that are exposed to high temperatures over the water to cool.

Protection for Fire-fighter

Wear full body protective clothing with breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear protective equipments in case of operation.

Environmental Precautions

Avoid release to the environment.

Methods for Cleaning Up

Remove potential ignition source in vicinity as soon as possible.

Prepare extinguishing agent.

Prevent leakage by enclosing with nonflammables and collect into empty container by scoop or the like.

Absorbed to non-flammable dry sand, if a large amount of spill to prevent enclosed in embankment.

Spilled material is collected in a container that can be sealed, then remove to safe place.

Deposits, waste treatment is based on the local regulations.

Working from the windward, to evacuate people downwind.

7 HANDLING AND STORAGE

Handling

Use in a well ventilated area.

Keep away from heat, spark and flames.

Use spark-proof tools and explosion-proof equipment.

After handling, wash well hands and face and rinse your mouth.

Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower.

Leakage, overflow, to prevent scattering, we do not generate steam in vain.

In the handling area and deny unnecessary entry.

Resting place shall not bring contaminated protective equipment such as gloves.

Wear protective equipments when risk of exposure occurs.

To work in an enclosed area that you work with appropriate protective equipment with a local exhaust ventilation sufficient.

Precautions

Do not breathe vapor or mist.

Handling of the outdoors, as much as possible to work from the windward.

Note is flammable at higher temperatures.

Handling Precautions for Safety

Avoid physical damage to containers.

Keep containers securely sealed when not in use.

To avoid sudden release of pressure, loosen closure cautiously before opening.

Storage

Fire prohibited strictly.

Keep away from sources of ignition.

Store in a cool, dry, well-ventilated area away from incompatible substances.

Separate from oxidizing materials.

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

Store in a tightly closed container.
 Safe containers and packaging materials
 None in particular.

8 EXPOSURE/PERSONAL PROTECTION

Engineering Controls

Handling equipment is used explosion-proof.
 Attach an exhaust device to prevent vapor from staying.
 That the equipment and shall become hot, and the source of ignition in the vicinity of the location, such as handling not been placed.
 Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limit Values

Chemical name	ACGIH
Molybdenum disulfide	TWA 3mg/m3
Ethyl acetate	TWA 400ppm
2-Propanol	TWA 200ppm, STEL 400ppm

Personal Protective Equipment

Respiratory Protection

Wear an organic gas mask or positive pressure air respirator if necessary.

Skin Protection

Solvent-resistant gloves

Eye Protection

Wear chemical worker's goggles.

Skin and body protection

Such as long-sleeved work clothes

Hygiene measures

Do not eat, drink or smoke during work.

Replacement of the adsorbent, such as the mask is performed each time or use plans.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Liquid
Color	:	Dark gray
Odor	:	Solvent odor
pH	:	Not available
Boiling Point(°C)	:	Not available
Melting Point(°C)	:	Not available
Flammability	:	Not available
Flash point(°C)	:	-4
Auto-ignition Temperature(°C)	:	Not available
Flammability or Explosive Limits		
Lower	:	Not available
Upper	:	Not available
Vapour Pressure (KPa)	:	Not available
Vapour Density	:	Not available
Relative density(g/cm3)	:	0.98
Solubility	:	Insoluble in water
Partition Coefficient: n-octanol/water	:	Not available
Decomposition Temperature(°C)	:	Not available
Dynamic viscosity rate	:	Not available
Relative gas density	:	Not available
Particle properties	:	Not available

10 STABILITY AND REACTIVITY

Stability

Stable under normal temperatures and pressures.

Reactivity

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

No self-reactive
 Conditions to Avoid
 Heat, flames, ignition sources and incompatibles.
 Hazardous Decomposition Products
 Carbon monoxide, carbon dioxide and other oxidized substances.

1.1 TOXICOLOGICAL INFORMATION

Chemical name	Acute toxicity (oral)	Acute toxicity (dermal)	Acute toxicity (inhalation: gas)	Acute toxicity (inhalation: vapour)	Acute toxicity (inhalation: dust, mist)	Skin corrosion / irritation	Serious eye damage / eye irritation
Molybdenum disulfide	Not applicable to category	Not applicable to category	Not applicable to category	Not applicable to category	Classification not possible	Classification not possible	Classification not possible
Ethyl acetate	Not applicable to category	Not applicable to category	Not applicable to category	Category 4	Classification not possible	Not applicable to category	Category 2B
Cellulose, nitrate	Not applicable to category	Classification not possible	Not applicable to category	Classification not possible	Classification not possible	Classification not possible	Classification not possible
2-Propanol	Not applicable to category	Not applicable to category	Not applicable to category	Not applicable to category	Classification not possible	Not applicable to category	Category 2A

Chemical name	Respiratory/skin sensitizer	Germ cell mutagenicity	Carcinogenicity	Toxic to reproduction	Specific target organs/systemic toxicity following single exposure	Specific target organs/systemic toxicity following repeated exposure	Aspiration hazard
Molybdenum disulfide	Respiratory sensitizer: Classification not possible; Skin sensitizer: Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Ethyl acetate	Respiratory sensitizer: Classification not possible; Skin sensitizer: Not applicable to category	Not applicable to category	Classification not possible	Classification not possible	Category 3 (narcotic effects, respiratory tract irritation)	Classification not possible	Classification not possible
Cellulose, nitrate	Respiratory sensitizer: Classification not possible; Skin sensitizer: Classification not possible	Classification not possible	Classification not possible	Classification not possible	Category 3 (narcotic effects)	Classification not possible	Classification not possible
2-Propanol	Respiratory sensitizer: Classification not possible; Skin sensitizer: Classification not possible	Classification not possible	Classification not possible	Category 2	Category 1 (central nervous system, systemic toxicity); Category 3 (respiratory tract irritation)	Category 1 (blood system), Category 2 (respiratory organs, liver, spleen)	Category 2

1.2 ECOLOGICAL INFORMATION

Chemical name	Hazardous to the aquatic environment (Acute)	Hazardous to the aquatic environment (Chronic)	Hazard to the ozone layer	Residuality and decomposition	Ecological accumulation	Mobility in soil

Moly C-S	SDS No.	1100
SUMICO LUBRICANT CO., LTD.	Revision Date	Apr. 15, 2025

Molybdenum disulfide	Classification not possible	Classification not possible	Classification not possible	No data	No data	No data
Ethyl acetate	Not applicable to category	Not applicable to category	Classification not possible	No data	No data	No data
Cellulose, nitrate	Not applicable to category	Not applicable to category	Classification not possible	No data	No data	No data
2-Propanol	Not applicable to category	Not applicable to category	Classification not possible	No data	No data	No data

13 DISPOSAL CONSIDERATIONS

Dispose of contents /container in accordance with local/regional/national/international regulations.

14 TRANSPORT INFORMATION

UN Class
 Flammable liquid, Class 3
 UN No.
 UN1263
 Packing Group
 II

15 REGULATORY INFORMATION

Follow all regulations in your country.

16 OTHER INFORMATION

References
 JIS Z 7253 (2019)
 GHS data-base (NITE)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

PPG Industries, Inc.
Environmental Data Sheet
 Tuesday, April 29, 2025

Product: CR100 PPG POWERCRON® 10X

PRODUCT PHYSICAL CHARACTERISTICS:

WEIGHT PER GALLON:		8.82 lb/gal
DENSITY OF ORGANIC SOLVENT BLEND:		8.52 lb/gal
	<u>Weight</u>	<u>Volume</u>
NON-VOLATILE:	35.6%	31.9%
VOLATILE:	64.4%	68.1%
PERCENT OF WATER:	61.5%	65.1%
PERCENT OF EXEMPTS:	0.0%	0.0%

VOC INFORMATION:

VOC/GAL LESS WATER (LESS EXEMPTS):	0.73 lb/gal	87 g/L
ACTUAL VOC/GAL (WITH WATER WITH EXEMPTS):	0.25 lb/gal	31 g/L
VOC PER GALLON OF SOLIDS:	0.80 lb/gal	96 g/L
VOC PER POUND OF SOLIDS:	0.08 lb/lb	

VOLATILE COMPOSITION: PERCENT OF TOTAL FORMULA:

<u>Component</u>	<u>Name</u>	<u>Weight</u>	<u>Volume</u>
7732-18-5	WATER	61.5	65.1
770-35-4	2-Propanol, 1-phenoxy-	2.2	2.2
111-76-2	2-Butoxyethanol	0.3	0.3
108-10-1	Methyl isobutyl ketone	0.2	0.2
107-98-2	Propylene glycol monomethyl ether	0.1	0.1
	TOTAL OF REMAINING VOLATILES < 0.1%	0.0	0.0

REGULATORY INFORMATION BASED ON 100 GALLONS DEFAULT

<u>Component</u>	<u>Name</u>	<u>lb</u>	<u>kg</u>	<u>HAPS</u>	<u>SARA</u>
108-10-1	Methyl isobutyl ketone	1.57	0.71	Yes	No

POUND OF ORGANIC HAPS PER POUND OF SOLIDS: 0.00
 POUND OF ORGANIC HAPS PER GALLON OF SOLIDS: 0.06
 POUND OF ORGANIC HAPS PER GALLON OF PRODUCT: 0.02
 PERCENT OF ORGANIC HAPS (VHAP): 0.2%

DISCLAIMER

This Environmental Data Sheet is not intended to replace the product's Material Safety Data Sheet.

The data contained in this Environmental Data Sheet is based on information provided to PPG by its suppliers and PPG's knowledge of PPG product formulations. PPG makes no representation or warranty regarding the accuracy of supplier furnished information or that this information or data will not change.

The information in this Environmental Data Sheet is not intended to and does not create legal rights or obligations. This information is provided for the sole use of PPG customers and is not for disclosure to competitors of PPG. PPG customers have an independent obligation to determine proper use of the information and that their use of the information is consistent with federal, state and local laws, rules and regulations.

Trace constituents present at levels less than 0.01 lb or kg are not included in the Regulatory Information section of this Environmental Data Sheet. Volatile HAPS present at levels less than 0.1% by weight for carcinogens and 1.0% for non-carcinogens will not be shown or will be indicated by a "No" in the Regulatory Section (under HAPS) of this Environmental Data Sheet.

Trace volatiles present at levels less than 0.1% are not listed individually in the volatile section of this EDS. Total trace volatiles is reported as "Total of remaining volatiles < 0.1%".

Chemical compounds generated as a result of the curing process of this coating are not included on this Environmental Data Sheet.

The USEPA listing of VOC exempt compounds [40CFR51.000(s)] is used in calculating VOC values.

SAFETY DATA SHEET

SECTION 1 - Products and company identification	
Product Name or Number	DEFRIC COAT HMB-2 SOLVENT
Manufacture' s Name	KAWAMURA RESEARCH LABORATORIES, INC.
Address	1-5-6, Meguro, Meguro-Ku, TOKYO 153-0063 JAPAN
Emergency Telephone Number	+81-3-3491-6896
Telephone Number	+81-3-3495-2121
Date Prepared	May 21, 2025 (ver.2)
Prepared by	H. Shindo
Recommended use	Thinner for paint
Restrictions on use	Industrial

SECTION 2 - Hazard identification

Hazards symbol and signal word :  DANGER

Physical hazards: Flammable liquids Category 2

Health hazards:	
Acute toxicity-Oral	Category 5
Acute toxicity-Dermal	Category 5
Acute toxicity-Inhalation	Category 4
Skin corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2
Sensitization-Respiratory	-
Sensitization-Skin	-
Germ cell mutagenicity	-
Carcinogenicity	Category 1
Toxic to reproduction	Category 1
Specific target organ systemic toxicity (Single exposure) :	Category 1 (central nervous system) Category 3 (narcotic effects, respiratory tract irritation)
Specific target organ systemic toxicity (Repeated exposure) :	Category 1 (central nervous system, liver, kidney) Category 2 (respiratory organ, nervous system, bone marrow, lung)
Aspiration toxicity	-
Environmental hazards:	
Acute aquatic toxicity	-
Chronic aquatic toxicity	-
Hazardous to the ozone layer	-

Hazard statement:

Highly flammable liquid and vapor.
May be harmful if swallowed.
May be harmful in contact skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to central nervous system.
May cause respiratory irritation.
May cause drowsiness and dizziness.
Causes damage to central nervous system, liver, kidney through prolonged or repeated exposure.
May cause damage to respiratory organ, nervous system, bone marrow, lung through prolonged or repeated exposure.

Prevention:

Keep container tightly closed.
Keep away from ignition sources such as heat, sparks and open flame– No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Do not get in eyes, on skin, or on clothing.
Wear protective gloves/clothing/glass.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Avoid release to the environment.

Response:

For a fire: Extinguish fire by using a powdery fire extinguisher, the fire foam, and carbon dioxide.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Get medical attention/advice.
Wash hands after handling.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs, get medical advice/attention.
Take off contaminated clothing and wash before re-use.
Collect spillage.

Storage/Disposal:

Provide and store a fixed place of 40°C or less where ventilation is good.
Store locked up.
Contents and the container must consign the business to a special waste management trader who obtains the administrative divisions governor's permission.

SECTION 3 - Composition / Information on ingredients

Chemical Name and Condition: Thinner , Mixture

Hazardous Components	CAS RN	Concentration (%)
1,4-dioxane	123-91-1	70
N-methyl-2-pyrrolidone	872-50-4	30

SECTION 4 – First aid measure

Inhalation	Keep the victim warm and quiet. Remove the victim from the contamination immediately to fresh air.
Eye	Immediately flush with water for at least 15 minutes. Get medical attention if eye irritation persists.
Skin	Remove excess with cloth or paper and wash area thoroughly with soap and water.
Ingestion	Consult a physician. Do not induce vomiting.
Note to physicians	Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – Firefighting measures

Suitable extinguishing media	Carbon dioxide, Foam, Water fog, Dry Chemical or Sand.
For safety reasons unsuitable extinguishing media	Water, Water full jet
Firefighting instructions	Dense smoke. Fire fighters wear an approved self-contained breathing apparatus.

SECTION 6 – Accidental release measures

Person-related safety precautions :

Wear protective equipment.
Keep unprotected person away.

Measures for environmental protection :

Prevent seepage into sewage system, work pits and cellars.
Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/ collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Dispose contaminated material as waste according to item 13.
 Ensure adequate ventilation.
 Do not flush with water or aqueous cleansing agents.

Additional information:

Clean contaminated surface thoroughly.

SECTION 7 – Handling and Storage

Handling:

Contact with eyes may cause irritation.
 Use protective glasses or other devices to avoid contact with eyes.
 Contact with skin may cause irritation.
 Use protective gloves to avoid skin contact.
 Do not swallow.
 Wear gloves to avoid injury on hands when opening the container.
 Keep out reach of children.

Storage:

Storage away from fire source or sunlight and in cool dry area.

SECTION 8 – Exposure controls / Personal protection

Hazardous Components	ACGIH TLV	Others
N-methyl-2-pyrrolidone	–	Not applicable
1,4-dioxane	20 ppm	IARC 2B

Engineering controls:

When handling indoors, to provide a local exhaust ventilation in the work area.

Personal protective measures

Eye protection : Chemical goggles with side shields or face recommended.

Skin protection: Protective clothing (long-sleeved, impervious, conductive), conductive shoes, front cover (solvent resistant)
 Protective gloves (impervious, chemical resistant, etc.), etc.

Respiratory protection : A respirator is generally not necessary when using this product outdoors or in large open areas. In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hygienic protection : Wash thoroughly after handling.

SECTION 9 – Physical and Chemical Properties

Physical state	Liquid
Color	Clear
Odor	Characteristic
Melting point / Freezing point	No data
Boiling point	101 °C
Flammability	Yes
Explosive limited	Lower limit 0.99 vol% Upper limit 22 vol%
Flash point	18 °C
Auto ignition temperature	180 °C
Decomposition temperature	No data
pH	No data
Kinematic viscosity	No data
Solubility	No data
Partition coefficient n-octanol/water	No data
Vapor pressure	3.9 kPa (20°C)
Relative density (water=1)	1.03 (20°C)
Relative gas density (gas=1)	No data
water solubility	None
Particle Properties	Not applicable

SECTION 10 – Stability and Reactivity**Thermal decomposition / conditions to be avoided:**

Product is stable under normal condition. Avoid overheating.

Dangerous reactions:

Strong oxidizers such as hydrogen peroxide.

Dangerous decomposition products:

Carbon monoxide and dioxide from burning.

Hazardous polymerization:

Not applicable

Reactivity with water:

No reaction

SECTION 11 – Toxicological information

Acute toxicity	Oral (LD50)	Dermal (LD50)	Inhalation (LC50/4h)
N-methyl-2-pyrrolidone	5 (3500 mg/kg)	Not classified (6000 mg/kg)	Not classified
1,4-dioxane	Not classified (5170 mg/kg)	5 (2100 mg/kg)	4 (9158ppm)

	Category	Material
Skin corrosion/irritation	2	N-methyl-2-pyrrolidone 1,4-dioxane
Eye damage/irritation	2A	N-methyl-2-pyrrolidone, 1,4-dioxane
Sensitization-Respiratory	-	Not applicable
Sensitization-Skin	-	Not applicable
Germ cell mutagenicity	-	Not applicable
Carcinogenicity	1B	1,4-dioxane
Toxic to reproduction	1B	N-methyl-2-pyrrolidone
Specific target organ systemic toxicity (Single exposure)	1	1,4-dioxane (central nervous system)
	3	Respiratory tract irritation: N-methyl-2-pyrrolidone, 1,4-dioxane Narcotic effects: 1,4-dioxane
Specific target organ systemic toxicity (Repeated exposure)	1	1,4-dioxane (central nervous system, liver, kidney)
	2	1,4-dioxane (respiratory organ) N-methyl-2-pyrrolidone (liver, bone marrow, lung, nervous system)
Aspiration toxicity	-	Not applicable

SECTION 12 – Ecological information

	Category	Material
Hazardous to the aquatic environment-Acute hazard:	-	Not applicable
Hazardous to the aquatic environment-Chronic hazard:	-	Not applicable
Hazardous to the ozone layer:	-	Not applicable

SECTION 13 – Disposal consideration

Product Recommendation:

Must not be disposed together with household garbage.

Do not allow product to reach sewage system.

Uncleaned packaging Recommendation:

Disposal must be made according to official regulations.

SECTION 14 – Transport information

UN No. : 1263

Description of goods: Thinner (for PAINT)

Hazard class: 3, Flammable liquids

Packaging group: II

SECTION 15 – Regulatory information**International Inventories:**

TSCA (USA): All ingredients listed

EINECS (EUROPE): All ingredients listed

ENCS (Japan): All ingredients listed

IECSC (China): All ingredients listed

KECL (Korea): All ingredients listed

Taiwan: All ingredients listed

DSL (Canada): All ingredients listed

AICS (Australia): All ingredients listed

ERMA (New Zealand): All ingredients listed

SECTION 16 – Other information

This SDS is an addition and complementary document besides the technical data sheet.

This information is based upon our knowledge about the product at the date of edition.

Since we cannot anticipate or control the different conditions under which this information or our product may be used, we make no guarantee that recommendations will be adequate for all individuals and situations.

SAFETY DATA SHEET

SECTION 1 - Products and company identification

Product Name or Number	DEFRIC COAT HMB-2M
Manufacture' s Name	KAWAMURA RESEARCH LABORATORIES, INC.
Address	1-5-6, Meguro, Meguro-Ku, TOKYO 153-0063 JAPAN
Emergency Telephone Number	+81-3-3491-6896
Telephone Number	+81-3-3495-2121
Date Prepared	July 24, 2024 (ver.2)
Prepared by	H. Shindo
Recommended use	Lubricant (solid lubricant paint)
Restrictions on use	Industrial

SECTION 2 - Hazard identification

Hazards symbol and signal word :  **DANGER**

Physical hazards: Flammable liquids Category 2

Health hazards:

Acute toxicity-Oral	-
Acute toxicity-Dermal	Category 5
Acute toxicity-Inhalation	Category 4
Skin corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2
Sensitization-Respiratory	-
Sensitization-Skin	-
Germ cell mutagenicity	-
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B

Specific target organ systemic toxicity (Single exposure) :

- Category 1 (central nervous system, liver)
- Category 2 (respiratory organ, kidney)
- Category 3 (narcotic effects)

Specific target organ systemic toxicity (Repeated exposure) :

- Category 1 (respiratory organ, central nervous system, liver, kidney)
- Category 2 (nervous system, bone marrow, auditory organ, lung)

Aspiration toxicity -

Environmental hazards:

Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3
Hazardous to the ozone layer	-

Hazard statement:

Highly flammable liquid and vapor.
May be harmful in contact skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to central nervous system, liver.
May cause damage to respiratory organ, kidney.
May cause drowsiness and dizziness.
Causes damage to respiratory organ, central nervous system, liver, kidney through prolonged or repeated exposure.
May cause damage to nervous system, bone marrow, auditory organ, lung through prolonged or repeated exposure.
Harmful to aquatic life.
Harmful to aquatic life with long lasting effects.

Prevention:

Keep container tightly closed.
Keep away from ignition sources such as heat, sparks and open flame— No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Do not get in eyes, on skin, or on clothing.
Wear protective gloves/clothing/glass.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Avoid release to the environment.

Response:

For a fire: Extinguish fire by using a powdery fire extinguisher, the fire foam, and carbon dioxide.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Get medical attention/advice.
Wash hands after handling.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs, get medical advice/attention.
Take off contaminated clothing and wash before re-use.
Collect spillage.

Storage/Disposal:

Provide and store a fixed place of 40°C or less where ventilation is good.
Store locked up.
Contents and the container must consign the business to a special waste management trader who obtains the administrative divisions governor's permission.

SECTION 3 - Composition / Information on ingredients

Chemical Name and Condition: Paint of Solid lubricant, Mixture

Hazardous Components	CAS RN	Concentration (%)
Synthetic resin	Trade secret	5-15
Molybdenum disulfide	1317-33-5	1-10
Graphite	7782-42-5	1-10
Diantimony trioxide	1309-64-4	1-10
1,4-dioxane	123-91-1	40-50
N,N-dimethylacetamide	127-19-5	10-20
N-methyl-2-pyrrolidone	872-50-4	10-20
Xylene	1330-20-7	1-10
Ethylbenzene	100-41-4	1-10

SECTION 4 – First aid measure

Inhalation	Keep the victim warm and quiet. Remove the victim from the contamination immediately to fresh air.
Eye	Immediately flush with water for at least 15 minutes. Get medical attention if eye irritation persists.
Skin	Remove excess with cloth or paper and wash area thoroughly with soap and water.
Ingestion	Consult a physician. Do not induce vomiting.
Note to physicians	Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – Firefighting measures

Suitable extinguishing media	Carbon dioxide, Foam, Water fog, Dry Chemical or Sand.
For safety reasons unsuitable extinguishing media	Water, Water full jet
Firefighting instructions	Dense smoke. Fire fighters wear an approved self-contained breathing apparatus.

SECTION 6 – Accidental release measures

Person-related safety precautions :

Wear protective equipment.
Keep unprotected person away.

Measures for environmental protection :

Prevent seepage into sewage system, work pits and cellars.
Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/ collecting :

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents.

Additional information :

Clean contaminated surface thoroughly.

SECTION 7 – Handling and Storage

Handling :

Contact with eyes may cause irritation.
Use protective glasses or other devices to avoid contact with eyes.
Contact with skin may cause irritation.
Use protective gloves to avoid skin contact.
Do not swallow.
Wear gloves to avoid injury on hands when opening the container.
Keep out reach of children.

Storage :

Storage away from fire source or sunlight and in cool dry area.

SECTION 8 – Exposure controls / Personal protection

Hazardous Components	ACGIH TLV	Others
Molybdenum disulfide	3 mg/m ³ (Mo)	Not applicable
Diantimony trioxide	0.5mg/m ³ (Sb)	IARC 2B
1,4-dioxane	20 ppm	IARC 2B
N,N-dimethylacetamide	10 ppm	Teratogenicity Liver trouble
N-methyl-2-pyrrolidone	–	Not applicable
Xylene	100 ppm	Not applicable

Ethyl benzene	20 ppm	IARC 2B
---------------	--------	---------

Engineering controls :

When handling indoors, to provide a local exhaust ventilation in the work area.

Personal protective measures

Eye protection : Chemical goggles with side shields or face recommended.

Skin protection: Protective clothing (long-sleeved, impervious, conductive), conductive shoes, front cover (solvent resistant)
Protective gloves (impervious, chemical resistant, etc.), etc.

Respiratory protection : A respirator is generally not necessary when using this product outdoors or in large open areas. In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hygienic protection : Wash thoroughly after handling.

SECTION 9 – Physical and Chemical Properties

Physical state	Liquid
Color	Dark gray
Odor	Characteristic
Melting point / Freezing point	No data
Boiling point	101 °C
Flammability	Yes
Explosive limited	Lower limit 0.99 vol% Upper limit 22 vol%
Flash point	14.5 °C
Auto ignition temperature	180 °C
Decomposition temperature	No data
pH	No data
Kinematic viscosity	No data
Solubility	No data
Partition coefficient n-octanol/water	No data
Vapor pressure	3.9 kPa (20°C)
Relative density (water=1)	1.1 (21 °C)
Relative gas density (gas=1)	No data
water solubility	None
Particle Properties	Not applicable

SECTION 10 – Stability and Reactivity

Thermal decomposition / conditions to be avoided:

Product is stable under normal condition. Avoid overheating.

Dangerous reactions:

Strong oxidizers such as hydrogen peroxide.

Dangerous decomposition products:

Carbon monoxide and dioxide from burning.

Hazardous polymerization:

Not applicable

Reactivity with water:

No reaction

SECTION 11 – Toxicological information

Acute toxicity	Oral (LD50)	Dermal (LD50)	Inhalation (LC50/4h)
Molybdenum disulfide	Not classified (>2000 mg/kg)	Not classified (>2000 mg/kg)	Not classified
Diantimony trioxide	Not classified	Not classified	Not classified
1,4-dioxane	Not classified (5170 mg/kg)	5 (2100 mg/kg)	4 (9158ppm)
N,N-dimethylacetamide	Not classified (>5000 mg/kg)	5 (2100 mg/kg)	3 (1100 ppm)
N-methyl-2-pyrrolidone	5 (3500 mg/kg)	Not classified (6000 mg/kg)	Not classified
Xylene	5 (3500 mg/kg)	4 (1700 mg/kg)	4 (6350ppm)
Ethyl benzene	5 (3500 mg/kg)	Not classified (15400 mg/kg)	4 (4000ppm)

	Category	Material
Skin corrosion/irritation	2	N-methyl-2-pyrrolidone, Xylene, 1,4-dioxane
Eye damage/irritation	2	Xylene, N,N-dimethylacetamide
	2A	N-methyl-2-pyrrolidone, 1,4-dioxane
	2B	Ethylbenzene
Sensitization-Respiratory	-	Not applicable
Sensitization-Skin	-	Not applicable
Germ cell mutagenicity	-	Not applicable

Carcinogenicity	1B	Antimony trioxide, 1,4-dioxane, N,N-dimethylacetamide
	2	Ethyl benzene
Toxic to reproduction	1B	N-methyl-2-pyrrolidone, Ethylbenzene, Xylene, N,N-dimethylacetamide
Specific target organ systemic toxicity (Single exposure)	1	1,4-dioxane (central nervous system) N,N-dimethylacetamide (central nervous system, liver) Xylene (respiratory organ, liver, kidney, central nervous system)
	2	Antimony trioxide (respiratory organ)
	3	Respiratory tract irritation: N-methyl-2-pyrrolidone, Ethylbenzene, 1,4-dioxane Narcotic effects: Xylene, 1,4-dioxane, Ethylbenzene, N,N-dimethylacetamide
Specific target organ systemic toxicity (Repeated exposure)	1	Antimony trioxide (respiratory organ) 1,4-dioxane (central nervous system, liver, kidney) N,N-dimethylacetamide (liver, respiratory organ) Xylene (respiratory organ, nervous system) Ethyl benzene (nervous system, auditory organ)
	2	1,4-dioxane (respiratory organ) N-methyl-2-pyrrolidone (liver, bone marrow, lung, nervous system)
Aspiration toxicity	1	Xylene, Ethylbenzene

SECTION 12 – Ecological information

	Category	Material
Hazardous to the aquatic environment-Acute hazard:	1	Ethylbenzene
	2	Xylene
Hazardous to the aquatic environment-Chronic hazard:	2	Xylene, Ethyl benzene
Hazardous to the ozone layer:	-	Not applicable

SECTION 13 – Disposal consideration

Product Recommendation:

Must not be disposed together with household garbage.
Do not allow product to reach sewage system.

Uncleaned packaging Recommendation:

Disposal must be made according to official regulations.

SECTION 14 – Transport information

UN No. : 1263

Description of goods: PAINT

Hazard class: 3, Flammable liquids

Packaging group: II

SECTION 15 – Regulatory information

International Inventories:

TSCA (USA): All ingredients listed
EINECS (EUROPE): All ingredients listed
ENCS (Japan): All ingredients listed
IECSC (China): All ingredients listed
KECL (Korea): All ingredients listed
Taiwan: All ingredients listed
DSL (Canada): All ingredients listed
AICS (Australia): All ingredients listed
ERMA (New Zealand): All ingredients listed

SECTION 16 – Other information

This SDS is an addition and complementary document besides the technical data sheet.
This information is based upon our knowledge about the product at the date of edition.
Since we cannot anticipate or control the different conditions under which this information or our product may be used, we make no guarantee that recommendations will be adequate for all individuals and situations.

SAFETY DATA SHEET

SECTION 1 - Products and company identification	
Product Name or Number	DEFRIC COAT ADX-35 (HMB-2M ADDITIVE)
Manufacture' s Name	KAWAMURA RESEARCH LABORATORIES, INC.
Address	1-5-6, Meguro, Meguro-Ku, TOKYO 153-0063 JAPAN
Emergency Telephone Number	+81-3-3491-6896
Telephone Number	+81-3-3495-2121
Date Prepared	July 1, 2024 (ver.12)
Prepared by	H. Shindo
Recommended use	Lubricant (Additive for solid lubricant paint)
Restrictions on use	Industrial

SECTION 2 - Hazard identification

Hazards symbol and signal word :  **DANGER**

Physical hazards: Flammable liquids Category 2

Health hazards:

Acute toxicity-Oral	-
Acute toxicity-Dermal	Category 5
Acute toxicity-Inhalation	Category 4
Skin corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2
Sensitization-Respiratory	-
Sensitization-Skin	-
Germ cell mutagenicity	-
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B

Specific target organ systemic toxicity (Single exposure) :

- Category 1 (central nervous system, liver)
- Category 3 (narcotic effects, respiratory tract irritation)

Specific target organ systemic toxicity (Repeated exposure) :

- Category 1 (central nervous system, liver, kidney, respiratory organ)

Aspiration toxicity	-
----------------------------	---

Environmental hazards:

Acute aquatic toxicity	-
Chronic aquatic toxicity	-
Hazardous to the ozone layer	-

Hazard statement:

Highly flammable liquid and vapor.
May be harmful in contact skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to central nervous system, liver.
May cause respiratory irritation.
May cause drowsiness and dizziness.
Causes damage to central nervous system, liver, kidney, respiratory organ through prolonged or repeated exposure.

Prevention:

Keep container tightly closed.
Keep away from ignition sources such as heat, sparks and open flame– No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust/mist/vapors/spray.
In case of inadequate ventilation wear respiratory protection.
Do not get in eyes, on skin, or on clothing.
Wear protective gloves/clothing/glass.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Avoid release to the environment.

Response:

For a fire: Extinguish fire by using a powdery fire extinguisher, the fire foam, and carbon dioxide.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Get medical attention/advice.
Wash hands after handling.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs, get medical advice/attention.
Take of contaminated clothing and wash before re-use.
Collect spillage.

Storage/Disposal:

Provide and store a fixed place of 40°C or less where ventilation is good.
Store locked up.
Contents and the container must consign the business to a special waste management trader who obtains the administrative divisions governor's permission.

SECTION 3 - Composition / Information on ingredients

Chemical Name and Condition: Paint of Solid lubricant, Mixture

Hazardous Components	CAS RN	Concentration (%)
Synthetic resin	Trade secret	30-40
1,4-dioxane	123-91-1	40-50
N,N-dimethyl acetamide	127-19-5	10-20

SECTION 4 – First aid measure

Inhalation	Keep the victim warm and quiet. Remove the victim from the contamination immediately to fresh air.
Eye	Immediately flush with water for at least 15 minutes. Get medical attention if eye irritation persists.
Skin	Remove excess with cloth or paper and wash area thoroughly with soap and water.
Ingestion	Consult a physician. Do not induce vomiting.
Note to physicians	Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – Firefighting measures

Suitable extinguishing media	Carbon dioxide, Foam, Water fog, Dry Chemical or Sand.
For safety reasons unsuitable extinguishing media	Water, Water full jet
Firefighting instructions	Dense smoke. Fire fighters wear an approved self-contained breathing apparatus.

SECTION 6 – Accidental release measures

Person-related safety precautions :

Wear protective equipment.
Keep unprotected person away.

Measures for environmental protection :

Prevent seepage into sewage system, work pits and cellars.
Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/ collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Dispose contaminated material as waste according to item 13.
 Ensure adequate ventilation.
 Do not flush with water or aqueous cleansing agents.

Additional information:

Clean contaminated surface thoroughly.

SECTION 7 – Handling and Storage

Handling:

Contact with eyes may cause irritation.
 Use protective glasses or other devices to avoid contact with eyes.
 Contact with skin may cause irritation.
 Use protective gloves to avoid skin contact.
 Do not swallow.
 Wear gloves to avoid injury on hands when opening the container.
 Keep out reach of children.

Storage:

Storage away from fire source or sunlight and in cool dry area.

SECTION 8 – Exposure controls / Personal protection

Hazardous Components	ACGIH TLV	Others
1,4-dioxane	20 ppm	IARC 2B
N,N-dimethylacetamide	10 ppm	Teratogenicity Liver trouble

Engineering controls:

When handling indoors, to provide a local exhaust ventilation in the work area.

Personal protective measures

Eye protection : Chemical goggles with side shields or face recommended.

Skin protection: Protective clothing (long-sleeved, impervious, conductive), conductive shoes, front cover (solvent resistant)
 Protective gloves (impervious, chemical resistant, etc.), etc.

Respiratory protection : A respirator is generally not necessary when using this product outdoors or in large open areas. In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hygienic protection : Wash thoroughly after handling.

SECTION 9 – Physical and Chemical Properties

Physical state	Liquid
Color	Clear yellow
Odor	Characteristic
Melting point / Freezing point	No data
Boiling point	101 °C
Flammability	Yes
Explosive limited	Lower limit 1.8 vol% Upper limit 22 vol%
Flash point	18.2 °C
Auto ignition temperature	180 °C
Decomposition temperature	No data
pH	No data
Kinematic viscosity	No data
Solubility	No data
Partition coefficient n-octanol/water	No data
Vapor pressure	3.9 kPa (20°C)
Relative density (water=1)	1.07 (°C)
Relative gas density (gas=1)	No data
water solubility	None
Particle Properties	Not applicable

SECTION 10 – Stability and Reactivity**Thermal decomposition / conditions to be avoided:**

Product is stable under normal condition. Avoid overheating.

Dangerous reactions:

Strong oxidizers such as hydrogen peroxide.

Dangerous decomposition products:

Carbon monoxide and dioxide from burning.

Hazardous polymerization:

Not applicable

Reactivity with water:

No reaction

SECTION 11 – Toxicological information

Acute toxicity	Oral (LD50)	Dermal (LD50)	Inhalation (LC50/4h)
1,4-dioxane	Not classified (5170 mg/kg)	5 (2100 mg/kg)	4 (9158ppm)
N,N-dimethylacetamide	Not classified (>5000 mg/kg)	5 (2100 mg/kg)	3 (1100 ppm)

	Category	Material
Skin corrosion/irritation	2	1,4-dioxane
Eye damage/irritation	2A	1,4-dioxane
	2B	N,N-dimethyl acetamide
Sensitization-Respiratory	-	Not applicable
Sensitization-Skin	-	Not applicable
Germ cell mutagenicity	-	Not applicable
Carcinogenicity	1B	1,4-dioxane, N,N-dimethyl acetamide
Toxic to reproduction	1B	N,N-dimethyl acetamide
Specific target organ systemic toxicity (Single exposure)	1	1,4-dioxane (central nervous system) N,N-dimethyl acetamide (central nervous system, liver)
	3	Respiratory tract irritation: 1,4-dioxane Narcotic effects: 1,4-dioxane, N,N-dimethyl acetamide
Specific target organ systemic toxicity (Repeated exposure)	1	1,4-dioxane (central nervous system, liver, kidney) N,N-dimethyl acetamide (liver, respiratory organ)
	2	1,4-dioxane (respiratory organ)
Aspiration toxicity	-	Not applicable

SECTION 12 – Ecological information

	Category	Material
Hazardous to the aquatic environment-Acute hazard:	-	Not applicable
Hazardous to the aquatic environment-Chronic hazard:	-	Not applicable
Hazardous to the ozone layer:	-	Not applicable

SECTION 13 – Disposal consideration

Product Recommendation:

Must not be disposed together with household garbage.
Do not allow product to reach sewage system.

Uncleaned packaging Recommendation:

Disposal must be made according to official regulations.

SECTION 14 – Transport information

UN No. : 1263

Description of goods: PAINT

Hazard class: 3, Flammable liquids

Packaging group: II

SECTION 15 – Regulatory information**International Inventories:**

TSCA (USA): All ingredients listed

EINECS (EUROPE): All ingredients listed

ENCS (Japan): All ingredients listed

IECSC (China): All ingredients listed

KECL (Korea): All ingredients listed

Taiwan: All ingredients listed

DSL (Canada): All ingredients listed

AICS (Australia): All ingredients listed

ERMA (New Zealand): All ingredients listed

SECTION 16 – Other information

This SDS is an addition and complementary document besides the technical data sheet.

This information is based upon our knowledge about the product at the date of edition.

Since we cannot anticipate or control the different conditions under which this information or our product may be used, we make no guarantee that recommendations will be adequate for all individuals and situations.

Product Safety Data Sheet

1. Product and Company Information

- **Product Name:** PK-4860
- **Company Name:** Parker Corporation Co., Ltd.
- **Address:** 2-22-1 Nihonbashi Ningyocho, Chuo-ku, Tokyo
- **Department in Charge:** Technical Headquarters, Technical Management Section
- **Phone Number:** 03-5634-8491
- **Fax Number:** 03-5634-8495

2. Summary of Hazards

GHS Classification:

- **Physical and Chemical Hazards:**
 - Self-heating chemicals: Not classified
 - Water-reactive flammable chemicals: Not classified
- **Health Hazards:**
 - Acute toxicity (oral): Category 4
 - Skin corrosion/irritation: Category 1B
 - Serious eye damage/eye irritation: Category 1
 - Respiratory sensitization: Not classified
 - Skin sensitization: Not classified
 - Germ cell mutagenicity: Not classified
 - Carcinogenicity: Not classified
 - Reproductive toxicity: Not classified
 - Specific target organ toxicity (single exposure): Category 1 (respiratory system)
 - Aspiration hazard: Not classified
- **Environmental Hazards:**
 - Acute aquatic toxicity: Category 3
 - Chronic aquatic toxicity: Not classified

GHS Label Elements

- **Signal Word:** Danger

- **Hazard Statements:**

- Harmful if swallowed
- Causes severe skin burns and eye damage
- May cause respiratory damage
- Harmful to aquatic life

- **Precautionary Statements:**

- **Prevention:**

- Do not inhale mist, vapor, or spray.
- Avoid release to the environment.
- Do not eat, drink, or smoke while using this product.
- Wash hands thoroughly after handling.
- Wear protective gloves, goggles, face shield, and protective clothing.

- **Response:**

- **If inhaled:** Move to fresh air and rest in a comfortable position.
- **If swallowed:** Rinse mouth. Do not induce vomiting. Contact a physician if feeling unwell.
- **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses if easy to do. Continue rinsing.
- **If on skin or hair:** Immediately remove contaminated clothing and rinse skin with water or shower. Wash contaminated clothing before reuse.

- **Storage:** Store locked up.

- **Disposal:** Dispose of contents and containers through a licensed waste disposal contractor.

3. Composition and Ingredients

- **Classification:** Mixture
- **Type:** Industrial water-based cleaning agent

Notified Components:

- **Potassium Hydroxide (KOH):**

- Content: 1–5%
- Chemical Formula: KOH
- CAS No.: 1310-58-3

Other Components: Silicates, phosphates, chelating agents, surfactants, water

4. First Aid Measures

- **If inhaled:** Move to fresh air and rest. Seek medical attention if feeling unwell.
- **If on skin:** Remove contaminated clothing and wash affected area with water or lukewarm water, then soap. Seek medical attention.
- **If in eyes:** Rinse with clean water for at least 15 minutes, including under eyelids. Seek immediate medical attention.
- **If swallowed:** Drink 1–2 glasses of water and rest. Seek immediate medical attention. Do not give anything orally to an unconscious person.

5. Firefighting Measures

- **Extinguishing Media:** Carbon dioxide, foam, powder, dry sand, water spray (for surrounding fires).
- **Specific Firefighting Methods:** Fight fire from upwind. Move containers to a safe location if possible. Evacuate non-essential personnel.
- **Protective Equipment:** Wear appropriate protective gear (gloves, goggles, mask, etc.).

6. Measures for Accidental Release

- **Precautions for Personnel:** Wear appropriate protective gear (gloves, mask, apron, goggles, etc.).
- **Environmental Precautions:** Prevent product from entering rivers or other water sources.
- **Containment and Cleanup:**
 - For small spills: Absorb with dry sand or cloth and collect in a sealed container.
 - For large spills: Surround with soil to prevent spreading and guide to a safe location for treatment.
- **Secondary Disaster Prevention:** Rope off the area and restrict access.

7. Handling and Storage

- **Handling:**
 - Wear appropriate protective gear to avoid contact with skin, mucous membranes, or eyes.
 - Ensure good ventilation.
 - Wash hands, face, and rinse mouth after handling.
- **Storage:**
 - Avoid direct sunlight and store in a well-ventilated area.
 - Use containers suitable for the product.

8. Exposure Controls and Personal Protection

- **Equipment Measures:** Install local exhaust systems if mist or vapor is generated. Provide facilities for eye and body washing near the handling area.
- **Permissible Concentrations:**
 - Japan Society for Occupational Health: 2 mg/m³ (Potassium Hydroxide)
 - ACGIH: TLV-TWA 2 mg/m³ (Potassium Hydroxide)
- **Protective Equipment:**
 - Respiratory protection: Protective mask
 - Hand protection: Protective gloves
 - Eye protection: Protective goggles
 - Skin/body protection: Protective clothing (long sleeves, apron, boots)

9. Physical and Chemical Properties

- **Appearance:** Liquid
- **Color:** Pale yellow to pale brown
- **Odor:** Slight characteristic odor
- **pH:** Approx. 11.7 (1% aqueous solution, 25°C)
- **Specific Gravity:** Approx. 1.25 (original solution, 25°C)
- **Solubility:** Soluble in water

10. Stability and Reactivity

- **Stability:** Stable under normal handling conditions.
- **Hazardous Reactions:** Reacts with acids, generating neutralization heat.
- **Avoidable Conditions:** Contact with incompatible substances.
- **Incompatible Materials:** Acidic substances.

11. Toxicological Information

- **Acute Toxicity (Oral):** Harmful if swallowed (Category 4).
- **Skin Corrosion/Irritation:** Causes severe skin burns (Category 1).
- **Serious Eye Damage/Irritation:** Causes severe eye damage (Category 1).

12. Environmental Impact Information

- **Acute Aquatic Toxicity:** Harmful

Safety Data Sheet (SDS) - Sumimold F1

1. Product and Company Information

Product Name: Sumimold F1

Reference Number: 5706

Company: Sumico Lubricants Co., Ltd.

Address: 5-11-3 Shimbashi, Minato-ku, Tokyo 105-0004, Japan

Phone: 0120-954-528

Fax: 03-5401-0471

Email: Lub_SUMICO@smm-g.com

Recommended Use: Mold release and sliding agent

Restrictions: Consult a chemical specialist for non-recommended uses.

2. Hazard Summary

GHS Classification:

- Aerosol: Category 1
- Flammable Liquid: Category 2
- Skin Corrosion/Irritation: Category 2
- Reproductive Toxicity: Category 2
- Specific Target Organ Toxicity (Single Exposure): Category 3
- Specific Target Organ Toxicity (Repeated Exposure): Category 1

Label Elements:

- Pictograms: Flame, Exclamation Mark, Health Hazard
- Signal Word: Danger
- Hazard Statements:
 - Extremely flammable aerosol
 - Pressurized container may burst when heated

- May cause skin irritation
- Suspected of damaging fertility or the unborn child
- May harm breastfed children
- May cause respiratory irritation, drowsiness, or dizziness
- May cause organ damage through prolonged or repeated exposure

3. Composition / Ingredients

Type: Mixture

Main Ingredients:

- Butane (CAS 106-97-8): 55–65%
- Propane (CAS 74-98-6): 10–20%
- Isohexane (CAS 101316-67-0): 20–30%
- n-Hexane (CAS 110-54-3): 1–5%

4. First Aid Measures

Inhalation: Move to fresh air, keep warm and at rest, seek medical attention if needed.

Skin Contact: Wash with plenty of water and soap. Seek medical attention if irritation occurs.

Eye Contact: Rinse thoroughly with clean water for at least 15 minutes. Seek medical attention.

Ingestion: Do not induce vomiting. Rinse mouth and seek medical attention.

5. Firefighting Measures

Extinguishing Media: Powder, CO₂, foam, dry sand

Do Not Use: Water

Firefighting Instructions: Remove flammable materials, use extinguishing agents from upwind, cool sealed containers with water.

6. Accidental Release Measures

Wear protective gear (gloves, mask, apron, goggles).

Prevent environmental contamination.

Remove ignition sources.

Use non-sparking tools.

Absorb with dry sand or non-combustible material.

Collect in sealed containers and dispose according to regulations.

7. Handling and Storage

Handling:

- Use in well-ventilated areas.
- Avoid fire, sparks, and high temperatures.
- Ground equipment to prevent static.
- Wash hands and face after handling.
- Use protective equipment.
- Do not use continuously for more than 30 seconds.

Storage:

- Avoid direct sunlight and temperatures above 40°C.
- Store in a cool, dry, ventilated place.
- Avoid moisture to prevent container corrosion.

8. Exposure Controls / Personal Protection

Engineering Controls: Use explosion-proof equipment and local exhaust ventilation.

Protective Equipment:

- Respirator: Organic vapor mask
- Gloves: Solvent-resistant
- Eye Protection: Safety glasses or goggles
- Clothing: Long-sleeved workwear

Hygiene: No eating, drinking, or smoking during use.

9. Physical and Chemical Properties

Appearance: Colorless to pale yellow transparent liquid

Odor: Solvent-like

Flash Point: -30°C

Density: 0.67 g/cm³

Water Solubility: Poor

Other data: Not available

10. Stability and Reactivity

Stability: Stable under normal conditions

Reactivity: No self-reactivity

Avoid: Fire, oxidizers, alkali metals

Hazardous Decomposition: CO, HF, COF₃

11–12. Toxicological and Environmental Information

Various ingredients show potential for:

- Narcotic effects
- Respiratory irritation
- Reproductive toxicity
- Organ damage from repeated exposure

n-Hexane is identified as a priority chemical with potential environmental impact.

13. Disposal Considerations

Dispose of waste through licensed industrial waste contractors.

Do not discharge into soil or drains.

Follow laws for incineration and special waste handling.

14. Transport Information

Domestic Regulations: Comply with Fire Service Act, Industrial Safety and Health Act

International Regulations:

- UN Number: 1950
- Class: 2.1 (Flammable Gas – Aerosol)

15. Regulatory Information

Subject to various Japanese laws including:

- Fire Service Act

- Industrial Safety and Health Act
- PRTR Law
- Waste Disposal Law

16. Other Information

Based on available data as of the revision date.

Subject to updates with new information.

Safety precautions are for standard handling; special uses may require additional measures.

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : MB-802
 SUPPLIER
 NAME : Sanyo Chemical Industries, Ltd.
 ADDRESS : 11-1, Ikkyo Nomoto-cho, Higashiyama-ku, Kyoto 605-0995, Japan
 DEPARTMENT : Products Evaluation Dept.
 TELEPHONE NUMBER (INFORMATION) : +81-(0)3-3500-3413(Tokyo office)
 FAX NUMBER (INFORMATION) : +81-(0)3-3500-3415(Tokyo office)
 EMERGENCY TELEPHONE NUMBER : +81-(0)75-541-4330
 SDS No. : 057360206-1

2. HAZARD IDENTIFICATION (Follow all regulation in your country.)

GHS CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

PHYSICAL HAZARDS

FLAMMABLE LIQUID : Category 4

HEALTH HAZARDS

ACUTE TOXICITY (ORAL) : Classification not possible

ACUTE TOXICITY (SKIN) : Classification not possible

ACUTE TOXICITY (INHALATION: GAS) : No classification

ACUTE TOXICITY (INHALATION: VAPOR) : Classification not possible

ACUTE TOXICITY (INHALATION: DUST, MIST) : Classification not possible

SKIN CORROSION / IRRITATION : Classification not possible

SERIOUS EYE DAMAGES / EYE IRRITATION : Classification not possible

RESPIRATORY SENSITIZATION : Classification not possible

SKIN SENSITIZATION : Classification not possible

GERM CELL MUTAGENICITY : Classification not possible

CARCINOGENICITY : Classification not possible

REPRODUCTIVE TOXICITY : Classification not possible

SPECIFIC TARGET ORGAN TOXICITY; : Classification not possible

 SINGLE EXPOSURE

SPECIFIC TARGET ORGAN TOXICITY; : Classification not possible

 REPEATED EXPOSURE

ASPIRATION HAZARD : Classification not possible

ENVIRONMENTAL HAZARDS

SHORT-TERM (ACUTE) AQUATIC HAZARDS : Classification not possible

LONG-TERM (CHRONIC) AQUATIC HAZARDS : Classification not possible

HAZARDOUS TO THE OZONE LAYER : Classification not possible

GHS LABEL ELEMENTS INCLUDING PRECAUTIONARY STATEMENTS

SYMBOL	-
SIGNAL WORD	Warning
HAZARD STATEMENT	: ·Combustible liquid.
PRECAUTIONARY STATEMENTS	
[PREVENTION]	·Do not handle until "SAFETY DATA SHEETS" has been read and understood well. ·Keep away from flames and heat. ·Avoid inhaling, swallowing, contact with eyes and skin. Wear safety glasses, gloves and face protection. ·Wash hands and face thoroughly and rinse mouth after handling.
[RESPONSE]	·IN CASE OF FIRE : Use carbon dioxide, dry chemical powder and foam for extinction. ·IN CASE OF MAJOR FIRE : Use foam and a large amount of water fog to extinguish. ·IF SWALLOWED : Rinse mouth. Do NOT induce vomiting. ·IF INHALED : Remove to fresh air and keep at rest in a position comfortable for breathing. ·IF ON SKIN : Wash with plenty of soap and water. ·IF IN EYES : Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. ·IF EXPOSED OR CONCERNED : Get medical advice/attention.
[STORAGE]	·Keep container tightly closed and store in a well-ventilated place.
[DISPOSAL]	·Dispose of contents/container in accordance with national and regional regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS (The contents are representative values.)

SUBSTANCE/MIXTURE : Substance

COMMON NAME(S),SYNONYM(S) OF THE SUBSTANCE

: Polyether

UNIQUE IDENTIFIERS FOR THE SUBSTANCE

: Proprietary

COMPONENTS AND CONTENTS

: -

COMPONENTS WHICH CONTRIBUTE TO THE CLASSIFICATION OF THE SUBSTANCE AND HAZARDOUS INGREDIENT (S) - JAPANESE REGULATION-

Wt.%

: -

4. FIRST AID MEASURES

IF INHALED	: ·Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention, if you are experiencing respiratory symptoms.
IF ON SKIN	: ·Wipe with the soft paper or the cloth, etc. Wash with plenty of soap and water. Get medical advice/attention, if necessary.
IF IN EYES	: ·Rinse cautiously for 15 minutes or more. Get medical advice/attention immediately.

MB-802, Sanyo Chemical Industries, Ltd., SDS No.057360206-1

Date revised : August 30, 2024

IF SWALLOWED : ·After rinsing mouth immediately, give ca. 250ml of milk or water. Get medical advice/attention immediately. Do not induce vomiting.
·Do not give anything by mouth to the victim when not conscious.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water fog

UNSUITABLE EXTINGUISHING MEDIA : Water jet

SPECIFIC EXTINCTION METHOD

- : ·Eliminate all ignition sources, and use suitable extinguishing media.
- Spray water on the surrounding equipment for cooling.

SPECIAL PROTECTIVE ACTION FOR FIRE- FIGHTERS

- : ·Extinguish from the windward to prevent poisonous gas from being inhaled.
- Appropriate protective equipment (gloves, glasses, and mask) must be worn.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

- : ·Wear appropriate protective equipment (gloves, safety goggle, etc.).
- The spilled area is slippery.

ENVIRONMENTAL PRECAUTIONS

- : ·Do not allow spillage out into the environment causing pollution e.g., rivers, waterways.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

- : ·Keep away from ignition sources.
- Contain spillage by making on embankment of earth, sand, etc., and collect into container(s) by shoveling or vacuuming.
- In case of small spillage, absorb with sand, sawdust, etc.
- In case of very small spillage, wipe clean with the rag, etc.

7. HANDLING AND STORAGE

HANDLING

TECHNICAL MEASURES

- : ·Handle in a well-ventilated area. Wear safety glasses, gloves and face protection, etc. Avoid direct contact.
- Set local exhaust or general ventilation of as described in chapter "8. EXPOSURE CONTROLS/PERSONAL PROTECTION".

PRECAUTIONS FOR SAFE HANDLING

- : ·Wash hands and face thoroughly and rinse mouth after handling.
- In case to wash work clothes, gloves, shoes, etc. contaminated with the product, avoid contact with clothes.

CONTACT AVOIDANCE

- : ·Avoid contact with strong oxidizing agents, etc.
- Keep fire away.

STORAGE

CONDITIONS FOR SAFE STORAGE

- : ·Keep container tightly closed and store in a well-ventilated place.
- Set up a Keep Fire Away-No Visitors sign.

PACKAGING MATERIAL

: ·Store in original containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

ACGIH : Not established

(1)

APPROPRIATE ENGINEERING CONTROLS

- : ·Establish the adequate local exhauster if vapor, dust or mist occurs.
- : ·Establish eye washing and body washing facilities near the work areas.

PERSONAL PROTECTIVE EQUIPMENT

- RESPIRATORY PROTECTION : ·Not required under normal conditions.
- HAND PROTECTION : ·Impervious gloves
- EYE/FACE PROTECTION : ·Safety glasses with side-guard (Wear safety goggle or face protection, if necessary)
- SKIN AND BODY PROTECTION : ·Appropriate protective equipment (e.g. impermeable gloves, protective boots, etc.)

9. PHYSICAL AND CHEMICAL PROPERTIES (representative values)

APPEARANCE (at 20°C)

- PHYSICAL STATE : Liquid
- COLOR : Pale yellow
- ODOR : Slightly specific odor

MELTING POINT/FREEZING POINT

: (Pour point)Below -10°C (14°F)

BOILING POINT OR INITIAL BOILING POINT AND BOILING RANGE

: No data

FLAMMABILITY : No data

LOWER AND UPPER EXPLOSION LIMIT /FLAMMABILITY LIMIT

: No data

FLASH POINT : 80°C (176°F) (Tag C.C.)

AUTO-IGNITION TEMPERATURE

: No data

DECOMPOSITION TEMPERATURE

: No data

pH : 7.0 (14% water/isopropyl alcohol solution)

KINEMATIC VISCOSITY : 5mm²/s(at 25°C)

SOLUBILITY

- WATER SOLUBILITY : Soluble
- SOLUBLE SOLVENT : Methanol, Isopropyl alcohol, Acetone, Toluene···Soluble

PARTITION COEFFICIENT N-OCTANOL/WATER (LOG VALUE)

: No data

VAPOUR PRESSURE : No data

DENSITY AND/OR RELATIVE DENSITY

: 0.95(at 20°C)(Specific gravity)

RELATIVE VAPOUR DENSITY

: No data

PARTICLE CHARACTERISTICS

: No data

10. STABILITY AND REACTIVITY

REACTIVITY	: No data
CHEMICAL STABILITY	: Stable under normal conditions.
POSSIBILITY OF HAZARDOUS REACTIONS	: Reacts with strong oxidizing agents, etc.
CONDITION TO AVOID	: No data
INCOMPATIBLE MATERIALS	: Strong oxidizing agents, etc.
HAZARDOUS DECOMPOSITION PRODUCTS	: No data
OTHERS	: No data

11. TOXICOLOGICAL INFORMATION (DATA for this product or similar product.)

ACUTE TOXICITY [ORAL]	: Classification not possible
No data	
ACUTE TOXICITY [SKIN]	: Classification not possible
No data	
ACUTE TOXICITY [INHALATION: GAS]	: No classification
Not classified by the GHS definition of gas.	
ACUTE TOXICITY [INHALATION: VAPOR]	: Classification not possible
No data	
ACUTE TOXICITY [INHALATION: DUST, MIST]	: Classification not possible
No data	
SKIN CORROSION / IRRITATION	: Classification not possible
(reference) May cause skin irritation. Repeated skin contact may cause irritation.	
SERIOUS EYE DAMAGE/EYE IRRITATION	: Classification not possible
(reference) May cause eye irritation.	
RESPIRATORY SENSITIZATION	: Classification not possible
No data	
SKIN SENSITIZATION	: Classification not possible
No data	
GERM CELL MUTAGENICITY	: Classification not possible
No data	
CARCINOGENICITY	: Classification not possible
No data	
REPRODUCTIVE TOXICITY	: Classification not possible
No data	
SPECIFIC TARGET ORGAN TOXICITY -SINGLE EXPOSURE	: Classification not possible
No data	
SPECIFIC TARGET ORGAN TOXICITY -REPEATED EXPOSURE	: Classification not possible
No data	
ASPIRATION HAZARD	: Classification not possible
No data	

12. ECOLOGICAL INFORMATION (DATA for this product or similar product.)

SHORT-TERM (ACUTE) AQUATIC HAZARDS	: Classification not possible
ECOTOXICITY	: No data

MB-802, Sanyo Chemical Industries, Ltd., SDS No.057360206-1

Date revised : August 30, 2024

LONT-TERM (CHRONIC) AQUATIC HAZARDS : Classification not possible
 PERSISTENCE AND DEGRADABILITY : No data
 BIOACCUMULATION POTENTIAL : No data
 MOBILITY IN SOIL : No data
 OTHER DATA : No data
 HAZARDOUS TO THE OZONE LAYER : Classification not possible
 No data

13. DISPOSAL CONSIDERATIONS

·Dispose of contents/container in accordance with national and regional regulations.

14. TRANSPORT INFORMATION

UN NUMBER : Not applicable
 PROPER SHIPPING NAME : Not applicable
 UN CLASS : Not applicable
 PACKING GROUP : -
 ENVIRONMENTAL HAZARDS : Not applicable
 INTERNATIONAL REGULATIONS
 LAND : Transport in accordance with national and regional regulations (RID, ADR, DOT, etc.)
 SEA : Transport in accordance with IMDG Code.
 AIR : Transport in accordance with ICAO-TI/IATA-DGR.
 EMERGENCY RESPONSE GUIDELINE NUMBER : 171

15. REGULATORY INFORMATION

INTERNATIONAL REGULATIONS

UNITED STATES INVENTORY (TSCA 8B) : All components are listed or authorized to exempt from registration.
 CANADA INVENTORY (DSL) : All components are listed or authorized to exempt from registration.
 AUSTRALIA INVENTORY (AIIC) : All components are listed or authorized to exempt from registration.
 CHINA INVENTORY (IEGSC) : All components are listed or authorized to exempt from registration.
 JAPAN INVENTORY (ENCS) : All components are listed or authorized to exempt from registration.
 PHILIPPINES INVENTORY (PICCS) : All components are listed or authorized to exempt from registration.
 KOREA INVENTORY (ECL) : All components are listed or authorized to exempt from registration.

16. OTHER INFORMATION

REFERENCES

- (1) TLVs and BEIs, ACGIH, 2023

* All specifications which were created based on the information which was available at the time and may be revised at anytime according to new information.

* To the best of our knowledge, the information contained herein is accurate. However, Sanyo Chemical Industries, Ltd. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown health hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

CONTACT

COMPANY : Sanyo Chemical Industries, Ltd.

DEPARTMENT : Sales Department

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

1. Identification of the substance/mixture and of the company/undertaking

Product name: MG-RC74
 Company name: PARKER CORPORATION
 Address: 2-22-1, Nihonbashi-ningyocho, Chuo-ku, Tokyo, Japan
 Charge section: Technology Administration Dept.
 (TEL:+81-3-5634-8491,FAX:+81-3-5634-8495)

2. Hazards identification

Hazard category	[Category]
Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	Category 3
Acute toxicity (vapour)	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ systemic toxicity following single exposure	Category 1
Specific target organ systemic toxicity following repeated exposure	Category 1
Acute hazards to the aquatic environment	Category 3

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:
 Harmful if swallowed.
 Toxic in contact with skin.
 Toxic if inhaled.
 Causes severe skin burns and eye damage.
 Causes serious eye damage.
 Causes damage to organs (respiratory apparatus).
 Causes damage to organs (respiratory apparatus) through prolonged or repeated exposure.
 Harmful to aquatic life

Precautionary statements:

Prevention Avoid release to the environment.
 Do not breathe in dust, fumes, gas, mist, vapours and spray.
 Wash hands and face well after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Wear protective gloves/protective clothing/eye protection/face protection.
Wear protective gloves.
Wear protective glasses.
Wear protective clothing.

Response IF SWALLOWED: Call a doctor. If you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty water.
IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a doctor.
Special treatment is required.
Rinse mouth.
Take off immediately all contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.

Storage Store in a well ventilated place. Keep container tightly closed.
Store locked up.

Disposal Dispose of contents/containers through a disposal agent licensed by a prefectural governor.

3. Composition/information on ingredients

3.1. Substances Not Applicable

3.2. Mixtures

Ingredients and Concentration

Ingredient Name	Content wt. %	CAS RN
Morpholine	36	110-91-8
1-(2-Methoxy-2-methylethoxy)-2-propanole	1-10	34590-94-8
Organic alkali	Confidential	Confidential
Chelating agent	Confidential	Confidential
Pure water	Confidential	7732-18-5

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

4. First-aid measures

Inhalation:	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, loosen clothing, keep airway open, and perform artificial respiration. If the victim is vomiting, turn the head to the side so that the vomit is not ingested. Do not leave the victim alone.</p> <p>Immediately call a doctor. May irritate the throat. Do not induce vomiting.</p>
Skin contact:	<p>Immediately call a doctor.</p> <p>Do not use soap as the product is alkaline. Wash the affected area under plenty of running water, lukewarm water or dilute acetic acid (0.5–2%) until the skin irritation or soapy feeling disappears. IF ON SKIN or hair, take off immediately all contaminated clothing. Rinse skin with water or shower. Wash skin with running water or shower. Take off immediately all contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse.</p>
Eye contact:	<p>Rinse carefully with water for several minutes. Remove contact lenses, if easy to do so. Continue rinsing. Immediately call a doctor.</p>
Ingestion:	<p>Immediately call a doctor. IF SWALLOWED: Call a doctor. If you feel unwell. Rinse mouth.</p>
Protection for first aid person:	<p>Wear protective gear listed in Section 8 'Exposure control and personal protection'.</p> <p>Ventilate if there are gas, vapours, mist or dust present.</p>

5. Fire-fighting measures

Suitable extinguishing media:	This product is not combustible.
Extinguishing media to avoid:	No information.
Specific hazards arising from the chemical:	No information.
Precautions for fire-fighters:	No information.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	During operation, wear protective equipment described in Section 8 : Exposure control/Personal protection, avoid contact with eyes and skin, and avoid breathing gas, dust and fumes.
--	---

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Environmental precautions:	<p>Prevent a secondary disaster by prohibiting entry to the area and preventing people from entering unnecessarily.</p> <p>If indoors, ensure good ventilation, and avoid breathing gas, vapors, mist and dust. If outdoors, work upwind and move away people who are downwind.</p> <p>Wear protective gear and take measures in accordance with 'Standards for Emergency Measures in Case of Accident in Transport of Poisonous and Deleterious Substances'</p> <p>If it leaks outside the place of business and may cause harm to the general public, immediately inform Health Centers, police and the Fire Brigade.</p> <p>Do not release into the environment unless unavoidable.</p> <p>If waste water treatment equipment is installed, contact the person responsible for waste water treatment and take measures to prevent release into the environment of waste water containing a large amount of the leaked product.</p>
Methods and materials for containment and cleaning up:	<p>May cause harmful effects to aquatic life. Retrieve leaked substances to prevent them flowing into sewage and waterways.</p> <p>Retrieve leaked substances and put in a sealable container, and transfer to a safe place. Handle adhering substances and waste material in accordance with relevant regulations.</p> <p>In case of a small spill, retrieve spilled material using absorbent such as sawdust, soil, sand, waste cotton, and wipe off remaining product with waste cotton/rag.</p>
Prevention of second accident:	<p>In case of a large spill, use sand/dirt to stop it from flowing away, retrieve using a spade or vacuum cleaner and put in an empty container.</p> <p>Put the retrieved product in a container that can be sealed.</p> <p>The product is alkaline. Neutralize with an acid (acetic acid, dilute hydrochloric acid).</p> <p>Prevent a secondary disaster by prohibiting entry to the area and preventing people from entering unnecessarily.</p> <p>Contact the relevant divisions (safety, sanitation, environment, disaster prevention) and take appropriate measures.</p>

7. Handling and storage

Handling

Technical measures:	<p>Wash hands and face well after handling.</p> <p>Use only outdoors or in a well-ventilated area.</p> <p>Do not get in eyes, on skin, or on clothing.</p> <p>Install eye and body washing equipment for emergency use in the vicinity.</p> <p>Avoid rough handling, such as tipping over, dropping, subjecting to shock and dragging containers.</p> <p>Wear protective gear when handling and take necessary steps (exhaust/ventilation equipment) to avoid exposure as specified in Section 8. Exposure Control and Personal Protection. Ensure that the workplace is well-ventilated.</p>
Ventilation requirements:	<p>Install ventilation equipment specified in Section 8. Exposure Control and Personal Protection when handling.</p>

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Precautions for safe handling:

Use this Safety Data Sheet (SDS) to assess risk, and based on the results, decide and observe appropriate handling methods.
Install equipment to prevent contact with skin, clothing, mucous membrane and eyes, or wear protective equipment to prevent exposure.
Wash face and hands after handling. Do not bring a contaminated protective equipment into the resting or eating area.

Do not breathe in dust, fumes, gas, mist, vapours and spray.
Wash hands and face well after handling.
Do not eat, drink or smoke when using this product.

Contact avoidance:

Refer to mixed dangerous substances on section 10. Stability and reactivity.

Storage

Storage conditions:

Store in a well ventilated place. Keep container tightly closed.
Store locked up.

The product is alkaline. Do not store together with acidic substances.

Safety adequate container materials:

Do not transfer to a food/beverage container.

If transferring to a different container, the new container must be labeled in accordance with the law.

Use a container that meets the standards specified in 'Standards for Transport Containers for Poisonous and Deleterious Substances'

Use the product container or a container with the equivalent strength.

8. Exposure controls/personal protection

Appropriate engineering controls:

Contains an ingredient with specified permissible concentration. Install exhaust equipment and ensure proper ventilation to keep below the permissible concentration.

Install hand wash and face wash facilities near the workplace, and wash hands and face after handling.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Occupational Exposure Limits

Ingredient Name	Japan Society for Occupational Health	ACGIH	
	Occupational Exposure Limits	TWA	STEL/C
Morpholine	---	20ppmSkin,	---
1-(2-Methoxy-2-methylethoxy)-2-propanole	---	100ppmSkin,	150ppmSkin,
Organic alkali	---	---	---
Chelating agent	---	---	---
Pure water	---	---	---

Personal protective equipment

- Respiratory protection: Wear an appropriate respirator mask.
- Hand protection: Wear protective gloves/protective clothing/eye protection/face protection.
Wear protective gloves made of appropriate materials to prevent permeation/penetration of chemical.
Contains an ingredient that may be absorbed through skin. Wear chemical-resistant protective gloves.
- Eye/face protection: Wear protective gloves/protective clothing/eye protection/face protection.
Wear appropriate protective goggles. Wear goggles or a face shield as necessary.
- Skin/body protection: Wear protective gloves/protective clothing/eye protection/face protection.
Wear proper protective clothing to avoid direct skin contact. Wear chemical-resistant protective clothing.
Wear appropriate protective equipment.

9. Physical and chemical properties

Product

- Physical state: Liquid
- Color: Colorless – pale yellow
- Odor: Present
- Melting point/freezing point: No data.
- Initial boiling point and boiling range: No data
- Flammability (solid, gas): No data
- Upper/lower flammability or explosive limits: No data.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Flash point:	None
Auto-ignition temperature:	No data.
Decomposition temperature:	No data
pH:	Approx.11.8 (Undiluted solution, 25°C)
Kinematic viscosity:	No data
Solubility:	water: Soluble.
Partition coefficient: n-octanol/water:	No data.
Vapour pressure:	No data.
Specific Gravity (Density g/cm ³):	Approx.1.03(25°C)
Vapour density:	No data.
Particle characteristics:	No data

10. Stability and reactivity

Reactivity:	No information.
Chemical stability:	Stable under ordinary handling conditions.
Possibility of hazardous reactions:	This product reacts with acidic substances to generate heat of neutralization.
Conditions to avoid:	Contact with an incompatible materials.
Incompatible materials:	Acidic substance
Hazardous decomposition products:	No information.

11. Toxicological information

Product

Acute toxicity (oral):	Category 4
Acute toxicity (dermal):	Category 3
Acute toxicity (inhalation):	Classification not possible (Gas) Category 3 (Vapour) Classification not possible (Dust/Mist)
Skin corrosion/irritation:	Category 1
Serious eye damage/irritation:	Category 1
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Category 1(respiratory apparatus)
Target organ effect/Multi exposure:	Category 1(respiratory apparatus)
Respiratory toxic:	Classification not possible

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Other information:	No data
Ingredient	
Morpholine	
Acute toxicity (oral):	Category 4 LD50: 1050–1900 mg/kg[rat]
Acute toxicity (dermal):	Category 3 LD50: 310–810 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Category 3 (Vapour) LC50: 7.8–8.2 mg/L[rat], LC50:> 8000 ppm[rat] Classification not possible (Dust/Mist)
Skin corrosion/irritation:	Category 1 Effect on person: No relevant information found, Effect on animals: No relevant information found
Serious eye damage/irritation:	Category 1 Effect on person: No relevant information found, Effect on animals: No relevant information found
Respiratory sensitization:	Classification not possible Effect on person: No relevant information found
Skin sensitization:	Classification not possible Effect on animals: No relevant information found
Mutagenicity:	Classification not possible symptoms: Not classified.
Carcinogenicity:	Classification not possible IARC: 3, ACGIH: A4
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Category 1(respiratory apparatus)
Target organ effect/Multi exposure:	Category 1(respiratory apparatus)
Respiratory toxic:	Classification not possible Effect on person: No relevant information found
1-(2-Methoxy-2-methylethoxy)-2-propanole	
Acute toxicity (oral):	No Classification LD50: 5180–5400 mg/kg[rat], LD50: 5.35 g/kg[rat]
Acute toxicity (dermal):	No Classification LD50:>= 9500 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Classification not possible (Vapour) LC50:>= 4.1 mg/L[rat] Classification not possible (Dust/Mist)
Skin corrosion/irritation:	No Classification Effect on person: No relevant information found, Effect on animals: No relevant information found
Serious eye damage/irritation:	Category 2B Effect on animals: No relevant information found

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Respiratory sensitization:	Classification not possible Effect on person : No relevant information found
Skin sensitization:	No Classification Effect on person : No relevant information found
Mutagenicity:	Classification not possible symptoms: Not classified.
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Category 3 (anesthetic action, respiratory tract irritation)
Target organ effect/Multi exposure:	No Classification
Respiratory toxic:	Classification not possible Effect on person : No relevant information found
Organic alkali	
No data	
Chelating agent	
Acute toxicity (oral):	No Classification LD50: > 2000 mg/kg [rat]
Acute toxicity (dermal):	Classification not possible Effect on animals : No relevant information found
Acute toxicity (inhalation):	Exempt classification (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist) Effect on animals : No relevant information found
Skin corrosion/irritation:	No Classification Mild [rabbit] Effect on animals : No relevant information found
Serious eye damage/irritation:	Category 2B Mild [rabbit] Effect on animals : No relevant information found
Respiratory sensitization:	Classification not possible Effect on person : No relevant information found
Skin sensitization:	Classification not possible Effect on person : No relevant information found
Mutagenicity:	No Classification symptoms: Negative
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Category 2
Target organ effect/Single exposure:	Classification not possible
Target organ effect/Multi exposure:	Category 1 (kidney)
Respiratory toxic:	Classification not possible Effect on person : No relevant information found
Pure water	
Acute toxicity (oral):	No Classification
Acute toxicity (dermal):	No Classification
Acute toxicity (inhalation):	No Classification (Gas) No Classification (Vapour) No Classification (Dust/Mist)
Skin corrosion/irritation:	Classification not possible

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
 Date Prepared: 2008/06/05
 Date Revised: 2022/06/01

Product Name: **MG-RC74**

Serious eye damage/irritation:	Classification not possible
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible
Target organ effect/Single exposure:	Classification not possible
Target organ effect/Multi exposure:	Classification not possible
Respiratory toxic:	Classification not possible

12. Ecological information

Product

Ecotoxicity	
Acute toxicity:	Category 3
Chronic toxicity:	Classification not possible
Persistence and degradability:	No information.
Bioaccumulative potential:	No information.
Mobility in soil:	No information.
Hazardous to the ozone layer:	Classification not possible
Other impact:	1%-COD: 1000ppm / BOD: 150ppm

Ingredient

Morpholine

Ecotoxicity	
Acute toxicity:	Category 3
Fish:	96hrLC50:> 100 mg/L[Oryzias latipes], 96hLC50: 375-460 mg/L[Oncorhynchus mykiss], 96hLC50: 350 mg/L[Lepomis macrochirus], 96hLC50:> 1000 mg/L[Brachydanio rerio]
Daphnia:	48hrEC50: 45 mg/L[Daphnia magna]
Algae:	No data, 96hEC50: 28 mg/L[Pseudokirchneriella subcapitata]
Chronic toxicity:	No Classification
Fish:	No data
Daphnia:	21dayNOEC: 5.0 mg/L[Daphnia magna]
Algae:	72hrNOEC: 30.9 mg/L[Pseudokirchneriella subcapitata]
Persistence and degradability:	Not rapidly biodegradable
Bioaccumulative potential:	Low bioconcentration
Hazardous to the ozone layer:	Classification not possible

1-(2-Methoxy-2-methylethoxy)-2-propanole

Ecotoxicity	
Acute toxicity:	No Classification
Fish:	LC50:> 100 mg/L, 96hLC50:> 10000 mg/L[Pimephales promelas]
Daphnia:	EC50:> 100 mg/L, 48hLC50: 1919 mg/L[Daphnia magna]

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Algae:	EC50:> 100 mg/L
Chronic toxicity:	No Classification
Fish:	No data
Daphnia:	No data
Algae:	No data
Persistence and degradability:	No data
Bioaccumulative potential:	No data
Hazardous to the ozone layer:	Classification not possible
Organic alkali	
Ecotoxicity	
Acute toxicity:	No data
Chronic toxicity:	No data
Chelating agent	
Ecotoxicity	
Acute toxicity:	Category 3
Fish:	96hrLC50: 41 mg/L[Lepomis macrochirus], 96hLC50: 44.2-76.5 mg/L[Pimephales promelas], 96hLC50: 34-62 mg/L[Lepomis macrochirus]
Daphnia:	No data, 48hEC50: 113 mg/L[Daphnia magna]
Algae:	No data, 72hEC50: 1.01 mg/L[Desmodesmus]
Chronic toxicity:	Category 3
Fish:	96hrNOEC: 74 mg/L[Oryzias latipes]
Daphnia:	21dayNOEC: 5.5 mg/L[Daphnia magna]
Algae:	72hrNOEC: 0.32 mg/L[Selenastrum capricornutum], 72hrNOEC: 0.10 mg/L[Selenastrum capricornutum]
Persistence and degradability:	Not rapidly biodegradable
Bioaccumulative potential:	Low bioconcentration
Hazardous to the ozone layer:	Classification not possible
Pure water	
Ecotoxicity	
Acute toxicity:	Classification not possible
Chronic toxicity:	Classification not possible
Hazardous to the ozone layer:	Classification not possible

13. Disposal considerations

Disposal methods: Dispose of contents/container through a licensed disposal agent.

The residues generated in waste water treatment or incineration must also be disposed of in accordance with relevant laws and regulations on waste disposal and cleaning, or their disposal subcontracted.

If disposal is to be subcontracted, conclude an agreement with a licensed disposal agent and attach a manifest with each request.

Do not put anything inside containers to be recycled. Seal and return empty.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

Dispose of poisonous substances after neutralizing, hydrolyzing, oxidizing, reducing or diluting them to render them non-poisonous.

14. Transport information

United Nations Recommendations on the Transport of Dangerous Goods :

UN classification: Class8(6.1)
UN number: 2922
Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Morpholine)
Packing group: III
Marine pollutant: Not applicable
Domestic restriction: Check that there are no leaks in the containers. Load carefully to prevent falling, dropping, damage, and load shifting.
Observe the cautions in Section 7. Handling and Storage Cautions.
Observe the methods specified in respective laws and regulations as applicable, including the Fire Services Act, Poisonous and Deleterious Substances Control Act, Explosives Control Act, and High Pressure Gas Safety Act.
In principle this product is for sale in Japan, and transport by ship or air is not anticipated.
Contact our sales office if it is necessary to transport the product by ship or air.

Specific security precaution and condition of transportation: Land transport: Observe provisions in connection with transport prohibitions and restrictions under the Road Act and other regulations.

Sea transport: Observe the Ship Safety Act.
Air transport: Observe the Civil Aeronautics Act.

Emergency Response Guide (ERG) Numbers: 154

15. Regulatory information

This SDS is prepared in accordance with Japanese laws and regulations, and is not intended for use outside of Japan.
Users are responsible for confirming the relevant laws and regulations in connection with the use of this product in their country or region.

SAFETY DATA SHEET (SDS)

SDS No: 20005410E
Date Prepared: 2008/06/05
Date Revised: 2022/06/01

Product Name: **MG-RC74**

16. Other information

Disclaimer: This data sheet is prepared based on the knowledge of our company at the time of preparation, and does not guarantee the completeness or accuracy of the physical and chemical property values and danger and toxicity.
The handling cautions are applicable to ordinary handling. Take separate safety measures in accordance with the circumstances if handling in an extra-ordinary manner or mixing with other substances.
There are unknown dangers and toxicity in all chemical products, therefore pay special attention when handling and establish your own conditions for safe use upon your own liability.
This Data Sheet has been prepared in accordance with JIS and Japan Chemical Industry Association SDS guidelines.
GHS classifications (dangerous toxicity) not listed in Section 2 shall fall under "outside scope of classification" or "not able to be classified".

Reference: GHS Classification Results Database, National Institute of Technology and Evaluation website
GHS Model SDS Information, Japan Industrial Health and Safety Association website
J-GLOBAL HP
SDS issued by raw materials manufacturer

Section 1. Identification

Product name Syntilo 9930
SDS # 450867
Code 450867-US03

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

Product use Metalworking fluid - soluble.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Supplier BP Lubricants USA Inc.
1500 Valley Road
Wayne, NJ 07470
Telephone: +1-888-CASTROL

EMERGENCY HEALTH INFORMATION: +1-800-447-8735

EMERGENCY SPILL INFORMATION: +1-800-424-9300 (CHEMTREC USA)
+1-703-527-3887 (CHEMTREC outside the US)

Section 2. Hazards identification

OSHA/HCS status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms



Signal word Warning

Hazard statements Causes skin irritation.
Causes serious eye irritation.

Precautionary statements

Prevention Wear protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.

Response Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage Not applicable.

Disposal Not applicable.

Hazards not otherwise classified Defatting to the skin.
This product contains complex ionic mixtures within the fluid matrix which are an intrinsic part of the product and cannot be separated from the fluid matrix. Toxicology testing has shown the ionic-mixture containing products exhibit skin and eye irritation properties that are notably attenuated when compared to the individual acid and base components.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Corrosion inhibitors and additives in aqueous solution.

Ingredient name	%	CAS number
2,2',2''-nitrilotriethanol	≥10 - ≤25	102-71-6
octanoic acid	≤5	124-07-2
2-aminoethanol	≤5	141-43-5
disodium tetraborate pentahydrate	≤3	12179-04-3
3,5,5-trimethylhexanoic acid	≤2.9	3302-10-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Wash out mouth with water if person is conscious. Get medical attention if adverse health effects persist or are severe.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed

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

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Product name Syntilo 9930	Product code 450867-US03	Page: 2/11
Version 11.02 Date of issue 03/05/2025.	Format US	Language ENGLISH

Section 5. Fire-fighting measures

Hazardous combustion products

Combustion products may include the following:
metal oxide/oxides
carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide)
nitrogen oxides (NO, NO₂ etc.)

Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilled product. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilled material and runoff with soil and surface waterways. Avoid prolonged or repeated contact with skin. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid and as a result may induce allergic skin reactions. Evaporation of water from soluble cutting fluids during use may lead to an increase in concentration which may result in the development of skin conditions due to irritation and defatting. It is important to monitor fluid strength on a regular basis with a refractometer and maintain it at the recommended concentration. Lubricants from other sources and other contaminants should be minimized. Swarf and other debris should be removed. To maintain optimum performance and minimize bacterial spoilage, machine tool coolant systems should be cleaned on a regular basis.

Section 7. Handling and storage

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. DO NOT ADD NITRITES TO THIS FLUID.

Not suitable

Prolonged exposure to elevated temperature

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2,2',2''-nitrilotriethanol	ACGIH TLV (United States). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 9/1994
octanoic acid	None.
2-aminoethanol	ACGIH TLV (United States). TWA: 3 ppm 8 hours. Issued/Revised: 9/1994 TWA: 7.5 mg/m ³ 8 hours. Issued/Revised: 9/1994 STEL: 6 ppm 15 minutes. Issued/Revised: 9/1994 STEL: 15 mg/m ³ 15 minutes. Issued/Revised: 9/1994 OSHA PEL (United States). TWA: 3 ppm 8 hours. Issued/Revised: 6/1993 TWA: 6 mg/m ³ 8 hours. Issued/Revised: 6/1993
disodium tetraborate pentahydrate	ACGIH TLV (United States). [Borate compounds, Inorganic] TWA: 2 mg/m ³ 8 hours. Issued/Revised: 1/2005 Form: Inhalable fraction STEL: 6 mg/m ³ 15 minutes. Issued/Revised: 1/2005 Form: Inhalable fraction
3,5,5-trimethylhexanoic acid	None.

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Section 8. Exposure controls/personal protection

Environmental exposure controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

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

Eye/face protection

Undiluted fluid: Chemical goggles.

Diluted fluid: Safety glasses with side shields.

Skin protection

Hand protection

Wear suitable gloves. Undiluted fluid: Wear chemical resistant gloves. Recommended: nitrile gloves.

Diluted fluid: Wear protective gloves if prolonged or repeated contact is likely.

Recommended: nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Body protection

Use of protective clothing is good industrial practice.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Other skin protection

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

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

For protection against metal working fluids, respiratory protection that is classified as "resistant to oil" (class R) or oil proof (class P) should be selected where appropriate. Depending on the level of airborne contaminants, an air-purifying, half-mask respirator (with HEPA filter) including disposable (P- or R-series) (for oil mists less than 50mg/m³), or any powered, air-purifying respirator equipped with hood or helmet and HEPA filter (for oil mists less than 125 mg/m³).

Where organic vapours are a potential hazard during metalworking operations, a combination particulate and organic vapour filter may be necessary.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Color	Yellow. [Light]
Odor	Not available.
Odor threshold	Not available.
pH	9.15 [Conc. (% w/w): 5%]
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	Not available.
Flash point	Closed cup: >100°C (>212°F) [Estimated. Water content interferes with flash point determination.]
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosion limit/flammability limit	Not available.
Vapor pressure	

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Water	17.5	2.3				
2,2',2"-nitrilotriethanol	<0.0075	<0.001				
octanoic acid	0	0				
2-aminoethanol	0.4	0.053				
3,5,5-trimethylhexanoic acid	0.00345	0.00046				

Relative vapor density	Not available.
Density	>1000 kg/m ³ (>1 g/cm ³) at 15°C
Solubility(ies)	

Media	Result
water	Soluble

Partition coefficient: n-octanol/water	Not applicable.
--	-----------------

Auto-ignition temperature

Ingredient name	°C	°F	Method
2,2',2"-nitrilotriethanol	324	615.2	
octanoic acid	>300	>572	
2-aminoethanol	410	770	

Decomposition temperature	Not available.
---------------------------	----------------

Viscosity	Not available.
-----------	----------------

VOC	37 g/l
-----	--------

Particle characteristics

Median particle size	Not applicable.
----------------------	-----------------

Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid excessive heat.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials. Slightly reactive or incompatible with the following materials: acids.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Classification

Product/ingredient name	OSHA	IARC	NTP
2,2',2"-nitrilotriethanol	-	3	-

<i>Descriptors:</i>	<i>OSHA:</i> + - Potential occupational carcinogen	<i>IARC:</i> 1 - Carcinogenic to human. 2A - Probable human carcinogen. 2B - Possible carcinogen to human. 3 - Not classifiable as a human carcinogen. 4 - Probably not a human carcinogen.	<i>NTP:</i> Proven - Known to be human carcinogens. Possible - Reasonably anticipated to be human carcinogens.
---------------------	---	--	--

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
2-aminoethanol	Category 3	-	Respiratory tract irritation

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Skin contact	Adverse symptoms may include the following: irritation redness dryness cracking

Section 11. Toxicological information

Inhalation	No specific data.
Ingestion	No specific data.

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

Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

General	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	8710.8 mg/kg
Dermal	31073.45 mg/kg
Inhalation (vapors)	310.73 mg/l

Additional information

Alkanolamine: This product contains an alkanolamine. In all metalworking fluids containing amines, there is a potential for forming nitrosamines which are animal carcinogens. Therefore, no nitrites or related nitrosating agents should be added to such compositions.

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc})	Not available.
Mobility	Liquid. Soluble in water.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Diluted Fluid The spent diluted fluid comprises a relatively stable emulsion. Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques (e.g. emulsion splitting, coagulation and filtration) approved by the local authority. Spent fluid should never be disposed of down the drain. The aqueous phase should not be discharged into sewage systems unless provided for by local regulations; the non-aqueous phase should be disposed of as undiluted fluid. Note that separated aqueous solutions or effluents may contain metal salts as well as traces of oil and must be checked for conformity in these respects against consents given by the authorities before disposal. Further treatment may be required.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Section 14. Transport information

Special precautions for user Not available.

Transport in bulk according to IMO instruments Not available.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are active or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

SARA 313

Form R - Reporting requirements This product does not contain any hazardous ingredients at or above regulated thresholds.

Supplier notification This product does not contain any hazardous ingredients at or above regulated thresholds.

State regulations

Massachusetts The following components are listed: TRIETHANOLAMINE; ETHANOLAMINE; BORATES, TETRA, SODIUM SALTS

New Jersey The following components are listed: TRIETHANOLAMINE; ETHANOLAMINE; BORATE COMPOUNDS, Inorganic

Pennsylvania The following components are listed: ETHANOL, 2,2',2"-NITRILOTRIS-; ETHANOL, 2-AMINO-

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Ethylene oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Diethanolamine, Diethanolamine, Propylene oxide and 1,4-Dioxane, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Other regulations

Australia inventory (AIC) At least one component is not listed.

Canada inventory At least one component is not listed.

China inventory (IECSC) All components are listed or exempted.

Japan inventory (CSCL) All components are listed or exempted.

Korea inventory (KECI) All components are listed or exempted.

Philippines inventory (PICCS) At least one component is not listed.

Taiwan Chemical Substances Inventory (TCSI) Not determined.

REACH Status For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

National Fire Protection Association (U.S.A.)



History

Date of issue/Date of revision	03/05/2025.
Date of previous issue	03/05/2025.
Prepared by	Product Stewardship Group
Key to abbreviations	<p>ACGIH = American Conference of Industrial Hygienists ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS Number = Chemical Abstracts Service Registry Number GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) OEL = Occupational Exposure Limit SDS = Safety Data Sheet STEL = Short term exposure limit TWA = Time weighted average UN = United Nations UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1</p>

▣ Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

Safety Data Sheet

Revision Date Apr 1, 2024

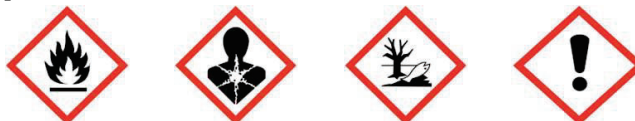
1. PRODUCT AND COMPANY IDENTIFICATION

Product Trade name: SUNPRESS S-162A
 Company name: SUGIMURA Chemical Industrial Co., Ltd
 Address: 12-4, 1-Chome, Marunouchi, Nakaku, Nagoya, 460, Japan
 TEL: +81-52-211-6000
 Emergency call: +81-52-777-6100
 FAX: +81-52-777-7701
 E-mail: skk-ls@sugimura-chem.co.jp
 Recommended use of the chemical: Lubricant for metal working

2. Hazards identification

GHS classification
 Physical hazards: Flammable liquids Category 3
 Health hazards: Specific target organ toxicity (single exposure) Category 3(narcotic effects, respiratory tract irritation)

Environment hazards: Aspiration hazard Category 1
 Hazardous to the aquatic environment - short-term (acute) Category 2
 Hazardous to the aquatic environment - long-term (chronic) Category 2
 *Hazards not listed above are either not classified or classification not possible.



GHS label elements
 Pictogram and Symbol:
 Signal words :
 Hazard statement:

Danger
 Flammable liquid and vapour
 May cause respiratory irritation or drowsiness or dizziness
 May be fatal if swallowed and enters airways
 Toxic to aquatic life
 Toxic to aquatic life with long lasting effects

Precaution:

【Prevention】
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use non-sparking tools.
 Take action to prevent static discharges.
 Wear protective gloves/protective clothing/eye protection/face protection.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

【Response】

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

In case of fire: Use appropriate media to extinguish.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor if you feel unwell.

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

DO NOT INDUCE VOMITING.

Collect spillage.

【Storage】

Store in a well-ventilated place.

Keep cool.

Keep container tightly closed.

Store locked up.

【Disposal】

Dispose of contents/container to local/regional/national/international

Country/area information : No information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance or Mixture: Mixture

Ingredients and composition:

INGREDIENTS	CAS RN	Wt%
Mineral Sprits	Trade secret	90~100%
*Trimethyl benzene	25551-13-7	5.3%
*Nonan	111-84-2	2.2%
*Xylene	1330-20-7	0.3≥1%<

*Ingredients contained in Mineral Sprits

4. FIRST AID MEASURES

Inhalation: Remove exposed person to fresh air if adverse effects are observed. If irritation persists or if toxic symptoms are observed, get medical attention.

Skin: Wash with soap and water. Get medical attention if irritation develops.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, get medical attention.

Ingestion: DO NOT INDUCE VOMITING.
Get immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray(fog), dry chemical, carbon dioxide, or foam.

Unsuitable extinguishing media: The use of water jets can cause the fire to spread and can be dangerous.

Protection for fire-fighters: When extinguishing a fire, wear appropriate respiratory protection and chemical protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency Procedures: Methods for containment and cleaning up:	In case of spill, evacuate area and secure sources of ignition and clean up spill immediately. Avoid contamination of sewers and waterways. Wear approved respiratory equipment during clean up if area is not ventilated adequately. Soak up with sand, earth or other inert material. Put into approved containers to be stored outside until disposal in accordance with local and federal regulations.
---	--

7. HANDLING AND STORAGE

HANDLING

Technical countermeasures : Partial exhaust•full ventilation : Notes :	No fires. Avoid creating ignition sources such as static electricity and sparks. Install a partial exhaust system or perform general ventilation. Avoid contact with eyes and skin and avoid inhalation of mist/vapors by wearing appropriate protective equipment such as safety glasses, impermeable protective clothing, protective gloves or coverings. After handling Wash hands thoroughly.
--	---

STORAGE

Storage conditions :	Store away from sources of ignition such as high temperatures, sparks, and open flames. Close the container tightly after use to prevent dirt and moisture from entering. Store locked in a cool, well-ventilated place, avoiding direct sunlight and rain.
----------------------	---

Container packaging materials	Conforms to the container used for the product.
-------------------------------	---

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

【Xylene】

Administrative levels: Control parameters, eg, occupational JSOH: ACGIH:	50ppm exposure limit values or biological limit values 50ppm 217mg/m ³ TLV-TWA 100ppm TLV-STEL 150ppm
---	--

【Trimethyl benzene】

Administrative levels: Control parameters, eg, occupational JSOH: ACGIH:	Not applicable exposure limit values or biological limit values 25ppm 120mg/m ³ TLV-TWA 25ppm
---	---

【Nonan】

Administrative levels: Control parameters, eg, occupational JSOH: ACGIH:	Not applicable exposure limit values or biological limit values 200ppm 1050mg/m ³ TLV-TWA 200ppm
---	--

【Mineral Sprits】

Administrative levels:	Not applicable
Control parameters, eg, occupational exposure limit values or biological limit values	
JSOH:	Not applicable
ACGIH:	TLV-TWA 100ppm
Engineering measures:	Provide eye wash and body shower facilities near the workplace.
Respiratory protection:	If necessary, wear appropriate respirator.
Protective gloves:	Wear protective gloves of rubber or plastic materials as required to avoid skin contact.
Eye protection:	Wear safety goggles in case of splash risk.
Protective equipment:	Wear protective clothing as required to avoid skin contact.
Hygienic practices:	Wash hand thoroughly after handling. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state/Color:	Clear and Transparent Liquid
Odor:	N/D
Melting /Freezing point:	N/D
Boiling point or first distillation point and boiling range:	N/D
Flammability:	Applicable
Lower explosive limit and upper explosive limit /Flammability limit:	LEL N/D UEL N/D
Flash point:	>40°C
Spontaneous ignition temperature:	N/D
Decomposition temperature:	N/D
pH:	Not applicable
Viscosity (mm ² /s, 40°C):	0.87
Solubility:	Negligible
n-octanol/water partition coefficient:	N/D
Vapor pressure:	N/D
Density (g/cm ³ , 15°C):	0.79
Relative gas density:	N/D
Particle properties:	N/D

10. STABILITY AND REACTIVITY

Reactivity :	Stable under normal storage and handling.
Chemical stability:	Stable under normal storage and handling.
Possibility of hazardous reactions:	No information
Conditions to avoid :	Contact with high temperatures, sparks, fire, mixtures or contact hazardous materials.
Mixtures or contact hazardous material :	strong oxidizing agent
Hazardous decomposition products :	CO, CO2 (during combustion)

11. TOXICOLOGICAL INFORMATION

GHS classification of this product was estimated based on information of ingredients.

Acute toxicity (oral):	LD50 > 2000 mg/Kg (Estimate)
Acute toxicity (dermal):	LD50 > 2000 mg/Kg (Estimate)
Acute toxicity (inhalation gases):	No classification
Acute toxicity (inhalation vapours):	Not classified
Acute toxicity (inhalation dusts/mists):	Not classified
Skin corrosion/irritation:	Not classified
Serious eye damage/eye irritation:	Not classified
Sensitization (respiratory):	Not classified
Sensitization (skin):	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
Specific target organ toxicity (single exposure):	Category 3(narcotic effects, respiratory tract irritation)
Specific target organ toxicity (repeated exposure):	Not classified
Aspiration hazard:	Category 1
Other information:	Skin contact: May cause skin irritation. Eye contact may cause irritation. May cause diarrhea and vomiting if swallowed. Inhalation: May cause a feeling of sickness.

12. ECOLOGICAL INFORMATION

GHS classification of this product was estimated based on information of ingredients.

Ecotoxicity:	
Hazardous to the aquatic environment - Short-term (acute) hazard :	Category 2
Hazardous to the aquatic environment - Long-term (chronic) hazard :	Category 2
Residuality and decomposition :	No information
Bioaccumulation :	No information
Mobility in soil :	No information
Harmful to the ozone layer :	No information

13. DISPOSAL CONSIDERATIONS

Waste from residues:	Follow local regulations. Do not flush into drain/storm sewer use an authorized disposal service. If permitted incineration may be practical.
Contaminated containers and packaging:	Clean and recycle containers or dispose of them appropriately in accordance with relevant laws and regulations and local government standards. When discarding an empty container, completely remove the contents.

SUNPRESS S-162A

Apr 1, 2024 S-00386

14. TRANSPORT INFORMATION

Proper shipping Name:	PETROLEUM PRODUCTS, N.O.S.
Hazard Class:	3
Packing Group:	III
UN No.:	1268

15. REGULATORY INFORMATION

Follow all regulations in your country.

【 Laws and Regulations of JAPAN 】

Pollutant Release and Transfer Register (PRTR):	List of Class 1 Designated Chemical Substances Trimethyl benzene (No.691 (PRTR Law)) List of Class 2 Designated Chemical Substances Nonan (No.791 (PRTR Law))
Industrial Safety and Health Law:	Substances subject to labeling Xylene Trimethyl benzene Nonan Mineral Sprits
Poisonous and Deleterious Substances Control Law:	Not regulated
Fire Service Law:	Category 4, Flammable Liquids, #2 Petroleum, Water immiscible
Ship Safety Act:	Flammable liquids
Civil Aeronautics Act:	Flammable liquids
Waste Treatment Law:	Industrial Waste

16. OTHER INFORMATION

Disclaimer of Express or Implied Warranties:

The information contained herein is based upon data believed to be reliable and reflects our best professional judgment. Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy of completeness of the information contained therein and assume no responsibility regarding the suitability of this information for the user's intended purpose or for the consequence of its use. Each individual should make a determination as to the suitability of the information for his/her particular purpose(s).

CREATED 2014/05/23

UPDATED 2025/10/30

Safety Data Sheet

1. Identification

GHS Product identifier

"TORAYCON" GF-Reinforced Grad 1101G-30, 1201G-15, 1101G-30 B, 1201G-15 B
1101G-15, 1101G-20, 1101G-30, 1101G-30S, 1101G-40S, 1101G-45,
1101G-15 B, 1101G15B (J), 1101G-30 B, 1101G-45 B
1201G-15, 1201G-15 S, 1201G-20 S, 1201G-15 B, 1101G-J30, 1101G-J30 B, 1201G-J15

Other means of identification

Product No.(SDS No.) R3E-BA0AB0RB1301-10-1

Supplier's details

Company name Toray Industries, Inc.
Address Nihonbashi Mitsui Tower, 1-1, Nihonbashi-Muromachi 2-chome, Chuo-ku, Tokyo
103-8666, Japan
Department Engineering Resins Dept., Automotive Products Dept.
Person in charge General Manager
Telephone number +81-3-3245-5500, +81-3-3245-5495

FAX Number and/or e-mail address of supplier

FAX number +81-3-3245-5515, +81-3-3245-5498

E-mail Address/URL www.plastics.toray/ja/

Emergency phone number +81-3-3245-5500, +81-3-3245-5495

Recommended use

For automobiles, electric and electronic devices, general use

Restrictions on use

Do not use for self-contained mechanical devices.

If considering use for medical purposes or food container purposes, please contact us in advance about the specific usage.

2. Hazards Identification

GHS Classification of the substance or mixture

This product is not classified under hazardous according to JIS Z 7252: 2019 (Classification of chemicals based on GHS).

GHS label elements

Not applicable

Other hazards which do not result in classification

Nothing in particular.

Major symptom and envisioned emergencies

No information available.

3. Composition/Information on Ingredients

Substance/Mixture	Mixture
Product identity(chemical name, common name)	Poly(tetramethylene terephthalate) resin
Synonym(s)	Poly(butylene terephthalate) resin, PBT resin
Composition/information on ingredients	
Chemical identity of the substance	Poly(tetramethylene terephthalate)
Content(%)	50-90
Ingredient type	Constituent
Contribution to GHS classification	Not contribute
Chemical property(chemical formula, structural formula)	[OC4H8OCO(C6H4)CO] _n

CAS No.	26062-94-2
ENCS No.(Chemical Substances Control Law)	7-1039
ISHL No.(Industrial Safety and Health Act)	7-1039
Chemical identity of the substance	Alumina borosilicate glass
Content(%)	10-50
Ingredient type	Constituent
Contribution to GHS classification	Not contribute
Chemical property(chemical formula, structural formula)	SiO2.Al2O3.CaO.MgO.B2O3.Na2O.K2O
CAS No.	65997-17-3
ENCS No.(Chemical Substances Control Law)	Not applicable
ISHL No.(Industrial Safety and Health Act)	Not applicable
Chemical identity of the substance	Carbon black
Content(%)	0-1
Ingredient type	Constituent
Contribution to GHS classification	Not contribute
Chemical property(chemical formula, structural formula)	C
CAS No.	1333-86-4
ENCS No.(Chemical Substances Control Law)	Not applicable(element)
ISHL No.(Industrial Safety and Health Act)	Not applicable(element)

4. First-aid measures

Inhalation

- Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Evacuate victim that inhaled gas from the molten polymer to fresh air.
- Seek medical advice, if victim does not recover.

Skin contact

- If a person touches the molten polymer, cool the affected part with fresh water.
- Do not try to remove the polymer by force and seek medical advice if the person got burnt.

Eye contact

- Remove contact lenses, if present and easy to do. Continue rinsing.
- Rinse your eyes gently with clean water for at least 15 minutes. Consult a doctor to receive medical treatment as soon as possible.
- Do not let the victim rub his eyes/keep his eyes tightly closed.

Ingestion

- Rinse your mouth with some water.
- If you don't feel well, arrange for a medical evaluation.

Most important symptoms and effects, both acute and delayed

No information available.

Precautions required to protect first-aiders

No information available.

Notes for the doctor

No information available.

5. Firefighting measures

Suitable extinguishing media

Water spray/Water jet/Foam/Powder/Carbon dioxide (CO2)

Unsuitable extinguishing media

Nothing in particular.

Special hazards arising from the substance or mixture

In case of fire or explosion, do not inhale fumes.

Toxic fumes or gas formed during combustion (Carbon monoxide).

Specific fire-fighting measures

Protect surrounding equipment by spraying water from a safe distance.

Remove movable containers from the area of the fire if safe to do so.

Be sure to extinguish a fire from the windward side and keep a safe distance from a fire.

Unauthorized personnel shall be evacuated to a safe place.

Special protective actions for fire-fighters

Fire-fighting personnel should wear proper protective equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Sweep up spilled pellets on road or floor to avoid tripping.

Environmental precautions

Do not discharge to sewers or into drain.

If plastics pellet got released in environment, take adequate steps to prevent aquatic animals and birds dying from eating pellets.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures against second disasters

Remove possible sources of ignition in the surrounding area.

7. Handling and storage

Precautions for safe handling

Technical measures

Exposure control of handler

Do not breathe dust/fume/gas.

Do not eat or smoke except the specified area.

Use only in the well-ventilated areas.

Prevention of fire/explosion

Do not carelessly use fire nearby.

Take precautionary actions of powder-dust explosion, if powder-dust occurred during secondary process.

Local/general exhaust ventilation

Do not inhale the gas and fumes generated during molding.

Volatile gases which may irritate eyes, nose and throat may be released.

Use adequate local exhaust ventilation during drying and molding.

Get medical advice if you feel unwell.

Precautions

Do not damage containers.

Avoid contact of containers with sharp edges.

Prevent deposition of dust.

Good general ventilation should be sufficient for most conditions.

Do not keep this material under high temperature condition for a long time.

Do not touch high temperature resin without protector.

Plastics pellet easily generates static electricity, so take countermeasures to eliminate static electricity if necessary.

Avoid rough handling or dropping.

See information on each ingredient if powder-dust occurs.

Do not empty into drains.

When smashing or crushing the resin, glass fibers may be released.
Put the waste into a bag immediately to minimize released glass fibers.
Contact with the fibers may cause temporary irritation or itching to skin, eyes, nose or throat.
Sweep up and dispose of spilled resin to eliminate slipping hazard.
Do not pile up bags too high in order to avoid injury caused by falling of the product.

Proper hygiene measures

Wash hands before intermissions or and after work.
Do not eat or smoke while working.

Conditions for safe storage, including any incompatibilities

Proper storage condition

Follow fire defense law and local regulations for storage and handling.

Storage condition to avoid

Keep fire away.
Keep away from heat source, steam pipe and direct sunlight. Store in cool places.

Safe container materials

No information available.

8. Exposure Control/Personal Protection

Control parameters

Administrative levels (Industrial Safety and Health Act)

Administrative levels are not established.

Occupational exposure limits

Japan Society for Occupational Health and ACGIH do not determine adopted value about powder-dust of resin.
Generally, data shown below is known about dust.

Recommended value of Japan Society for Occupational Health(2024)

Third class dust

The weighted average per hour: respirable dust 2mg/m³, total dust 8mg/m³

Recommend value of ACGIH(2024)

General dust

The weighted average per hour: respirable dust 3mg/m³, total dust 10mg/m³

DNEL(Derived No Effect Level)

No information available.

PNEC(Predicted No Effect Concentration)

No information available.

Exposure controls

When processing, partial ventilation is desirable to eliminate generated gas and powder-dust.

Individual protection measures

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Against powder-dust: protective mask for powder-dust

Against gas from molten polymer: protective mask for organic gas

Hand protection

Wear protective gloves.

Wear heat-resistant protection gloves when handling molten polymers.

Eye/face protection

Wear protective glasses or safety goggles.

Skin and body protection

Wear protective clothing.

It is desirable to put on long sleeve clothing so as not to touch skin directly.

Wear protection clothing of heat-resistance when handling melting polymer.

9. Physical and Chemical Properties

Physical state

Solid(pellet)

Color

White, Black

Odor

Odorless

Melting point/freezing point

225°C

Boiling point or initial boiling point and boiling range

None

Flammability (solid, gas)

Not available.

Lower and upper explosion limit / flammability limit

Not available.

Flash point

Not available.

Auto-ignition temperature

>400°C

Decomposition temperature

No information available.

pH

Not applicable.

Kinematic viscosity

Not applicable.

Solubility

No information available.

Partition coefficient: n-octanol/water

No information available.

Vapour pressure

No information available.

Density and/or relative density

1.42-1.68

Relative vapour density

Not applicable.

Particle characteristics

Not applicable.

Other information

No information available.

10. Stability and reactivity

Reactivity

Nothing in particular.

Chemical stability

This product is considered stable under ordinary storage and handling condition.

Possibility of hazardous reactions

This product is considered stable under ordinary storage and handling condition.

Conditions to avoid

Direct sunlight, fire, heat, etc.

Incompatible materials

Nothing in particular.

Hazardous decomposition products

During burning, black smoke, carbon dioxide, carbon monoxide, nitrogen oxide and others may be produced.

11. Toxicological Information

Acute toxicity

Classification not possible.(N.A.)

Skin corrosion/irritation

Classification not possible.(N.A.)

Serious eye damage/eye irritation

Classification not possible.(N.A.)

Sensitization, respiratory/skin

Classification not possible.(N.A.)

Germ cell mutagenicity

Classification not possible.(N.A.)

Carcinogenicity

Classification not possible.(N.A.)

Reproductive toxicity

Classification not possible.(N.A.)

Specific target organ toxicity/single exposure

Classification not possible.(N.A.)

Specific target organ toxicity/repeated exposure

Classification not possible.(N.A.)

Aspiration hazard

Classification not possible.(N.A.)

Other hazard(s)

As for articles that are "Classification not possible", there are no instances reported on harmful effects to health and environment, according to recent datum.

12. Ecological Information

Ecotoxicity

Acute(short-term)

Classification not possible.(N.A.)

Chronic(long-term)

Classification not possible.(N.A.)

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Adverse effect to the ozone layer

No information available.

13. Disposal considerations

Information for proper disposal, recycling, or reclamation of the substance or mixture and/or its container to assist in the determination of safe and environmentally preferred waste management

Dispose to an authorized waste collection point.

Follow the local law and regulations of waste disposal and prevention against public nuisance.

Do not cast waste (waste fluid, solid waste and washing drainage etc.) that includes this product directly into a river, or bury it underground.

Check if there is no resin left, if disposing the package after use. (paper package, flexible container etc.)

Follow the local law and regulations of waste disposal.

Do not use the package for other purposes.

14. Transport information

International regulation

UN number	Not applicable.
UN proper shipping name	Not applicable.
Transport hazard class(es)	Not applicable.
Packing group	Not applicable.
Environmental hazards	Not applicable.

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

Specific safety measures and conditions on transport

Covering is necessary for shutting off sunlight and rain.
Handle gently to avoid damaging bags.
Caution for slipping by the scattered pellets.

The Laws and Regulations for transportation in Japan

Land transportation	Not applicable.
Marine transportation	Not applicable.
Air transportation	Not applicable.

ERG Guide No.

Not applicable.

15. Regulatory information

Information regarding regulations/legislation specific for the product

We are not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other Information/References

Date of issue/Date of revision

Date of revision 2025/10/30

Revised item Addition of one grade, Chapter 8: Change of description contents

Reference

JIS Z 7252(2019): Classification of chemicals based on "Globally Harmonized System of Classification and Labeling of Chemicals (GHS)"

JIS Z 7253(2019): Hazard communication of chemicals based on GHS-Labeling and Safety Data Sheet (SDS)
Information of suppliers SDS

"NITE-CHRIP(NITE Chemical Risk Information Platform)". NITE(National Institute of Technology and Evaluation).

"J-CHECK(Japan CHEMicals Collaborative Knowledge database)". NITE(National Institute of Technology and Evaluation).

"Shokuba-no-Anzen-Site". Ministry of Health, Labour and Welfare.

"Information on Chemicals". ECHA.

Disclaimer

The information relates to this specific material.

It may not be valid for this material, if used in combination with any other materials or in any process.

It is the user's responsibility to satisfy him-selves as to the suitability and completeness of this information for his own particular use.

The information herein is given in good faith, but no warranty, express or implied, is made.

Please consult us for further information.

This information contained in this data sheet represents the best information currently available to us.

However, no warranty is made with respect to its completeness and we assume no liability resulting from its use.

It is advised to make their own tests to determinate the safety and suitability of each such product or

combination for their own purposes.

Other information

Resin is usually safe itself, so as for the calculation of division, acute toxicity (oral) is calculated by LD50 as more than 10000.

Certificate Of Completion

Envelope Id: BA0C104F-931E-892F-8280-23E5BCFA0EC1	Status: Completed
Subject: Complete with Docusign: KA0442.251 MELCO HVAC Air Permit Application - Revised Final 20260528.pdf	
Source Envelope:	
Document Pages: 207	Signatures: 2
Certificate Pages: 4	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Carrie Plummer
Time Zone: (UTC-08:00) Pacific Time (US & Canada)	5900A Katella Ave
	Cypress, CA 90630
	carrie.plummer@mehvac.meus.com
	IP Address: 192.34.49.10

Record Tracking

Status: Original	Holder: Carrie Plummer	Location: DocuSign
5/28/2026 11:18:13 AM	carrie.plummer@mehvac.meus.com	

Signer Events

Kenny Pitakis
 Kenny.Pitakis@mehvac.meus.com
 VP, Operations
 MELCO HAVC US, Inc.
 Security Level: Email, Account Authentication (None)

Signature

Signed by:

 94B461635C5C44E...
 Signature Adoption: Pre-selected Style
 Using IP Address: 192.34.49.10

Timestamp

Sent: 5/28/2026 11:19:57 AM
 Viewed: 5/28/2026 12:06:51 PM
 Signed: 5/28/2026 12:07:09 PM

Electronic Record and Signature Disclosure:

Accepted: 5/28/2026 12:06:51 PM
 ID: a1ff335b-7685-442f-a8ab-edef1f897c10

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	5/28/2026 11:19:57 AM
Certified Delivered	Security Checked	5/28/2026 12:06:51 PM
Signing Complete	Security Checked	5/28/2026 12:07:09 PM
Completed	Security Checked	5/28/2026 12:07:09 PM

Payment Events	Status	Timestamps
----------------	--------	------------

Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, Mitsubishi Electric US - Semiconductors (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a \$0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Mitsubishi Electric US - Semiconductors:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: danyo.tu@meus.mea.com

To advise Mitsubishi Electric US - Semiconductors of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at danyo.tu@meus.mea.com and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from Mitsubishi Electric US - Semiconductors

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to danyo.tu@meus.mea.com and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Mitsubishi Electric US - Semiconductors

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an email to danyo.tu@meus.mea.com and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: <https://support.docusign.com/guides/signer-guide-signing-system-requirements>.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to ‘I agree to use electronic records and signatures’ before clicking ‘CONTINUE’ within the DocuSign system.

By selecting the check-box next to ‘I agree to use electronic records and signatures’, you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Mitsubishi Electric US - Semiconductors as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Mitsubishi Electric US - Semiconductors during the course of your relationship with Mitsubishi Electric US - Semiconductors.

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

MELCO HVAC US Inc Mitsubishi Electric Automotive America Inc 1705 Downing Dr Maysville, KY 41056	Plant Location 1705 Downing Rd Maysville, KY 41056
--	---

Attn: Kenny Pitakis **Phone:** 606-759-4513 **Fax:**
Latitude: 38.647160 **Longitude:** -83.833027 **E-mail:** kpitakis@meaa.mea.com

Record Date **Principal Product** **Number of Employees** **Area in Acres**
 2004/08 AUTO ELECT 80 0.00

State Plant Classification

R; Registered Source

<u>SIC Code</u>	<u>SIC Description</u>	<u>NAIC Code</u>	<u>NAIC Description</u>
3694	Engine Electrical Equipment	336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing

<u>Program Code</u>	<u>Subpart</u>	<u>Operating Status</u>	<u>Compliance Status</u>
0-SIP Source	Not Applicable	O-Operating	
G-Area Source MACT	G-ZZZZ-Recipro. Int. Comb Engine (RICE)	O-Operating	

Plant Emission Totals in Tons Per Year

<u>Pollutant ID/CAS</u>	<u>Pollutant Description</u>	<u>Actual</u>	<u>Actual Uncontrolled</u>	<u>Title V PTE</u>	<u>Max Potential</u>
124-38-9	Carbon Dioxide	0	0	356.9430066	356.9430066
630-08-0	CO (Carbon Monoxide)	0	0	2.0676577	2.0676577
110-54-3	Hexane; N-Hexane	4.6444644	4.6444644	5.0743526	5.0743526
10102-44-0	NO2 (Nitrogen Dioxide)	0	0	9.5982845	9.5982845
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0.0000320	0.0000320	14.1104928	14.1104928
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0.0000144	0.0000144	7.9633257	7.9633257
PM-FIL	PT (Particulate Matter)	0.0000320	0.0000320	14.1104928	14.1104928
7446-09-5	SO2 (Sulfur Dioxide)	0	0	0.6311797	0.6311797
VOC	VOC (Volatile Organic Compounds)	21.3890869	21.3890869	42.0569358	42.0569358

Plant Notes from MasterFile:

PLANT BACKGROUND NOTES:

97.218 F236:CONSTRUCTION PERMIT FOR MANUFACTURE OF IGNITION COILS.

Log #53589: The company is adding an audio component line. A no permit required letter is being issued. Ralph Gouge 3/25/01

Log #53634: The company is adding an coil ignition line. A no permit required letter is being issued to the company as this is an Insignificant Activity. Ralph Gouge 3/25/01

Per ARE20140002 and email from corresponding file EQPT-16 removed from permit and database. Additionally, lead removed from EQPT1 through EQPT13 sem 9/3/2015

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

EMISSIONS SUMMARY BY Equipment ID (SI):

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>			
COMB0000000001 2-MP8	Potting-Cure-Oven	2004/07			
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter-10 Microns Or Less)	0	0	4.1864040	4.1864040
PM25-FIL	PM2.5 (Particulate Matter-2.5 Microns Or Less)	0	0	3.2653951	3.2653951
PM-FIL	PT (Particulate Matter)	0	0	4.1864040	4.1864040

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>			
EQPT0000000001 001	SOLDR CIRCT BOARD	2016/01			
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0	0	0.0147159	0.0147159

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>			
EQPT0000000002 002	POXY BOND CIRCUIT	2016/01			
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0.0147159	0.0147159	0.0294318	0.0294318

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>			
EQPT0000000003 003	SENSBY SPOT SOLDR	0103			
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0.0614330	0.0614330	0.0614330	0.0614330

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>			
EQPT0000000004 004	SILICONE APPLICATION	0103			
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
110-54-3	Hexane; N-Hexane	4.6444644	4.6444644	4.6444644	4.6444644
VOC	VOC (Volatile Organic Compounds)	6.1620450	6.1620450	6.1620450	6.1620450

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>			
EQPT0000000005 006	BOARD-A-LINESPRY-FLX	0103			
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	1.7032926	1.7032926	1.7032926	1.7032926

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000006 007	SENSBEYSOLDERBATH			2016/01	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	2.2576272	2.2576272	2.2576272	2.2576272

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000007 008	ROBOT BOARD-A-LINE			2016/01	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	2.2576272	2.2576272	2.2576272	2.2576272

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000008 009	BOARD-A-LINE-VISUAL			2016/01	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	2.2576272	2.2576272	2.2576272	2.2576272

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000009 010	BORDALINECHASASSBLY			2016/01	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	2.2576272	2.2576272	2.2576272	2.2576272

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000010 012	BORDBLINESPRYFLUX			0103	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0.0116508	0.0116508	0.0116508	0.0116508

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000011 013	B-LINEWAVESOLDER			2016/01	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0.2324028	0.2324028	0.2324028	0.2324028

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>	
EQPT0000000012 014	B-LINEHANDSOLDER			2016/01	
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0.2324028	0.2324028	0.2324028	0.2324028

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>		<u>Equipment Description</u>			<u>Record Date</u>
EQPT000000013		ROBOTIC-SOLDER			2016/01
015					
			<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
			<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>			<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)		2.4236292	2.4236292	2.4236292
					<u>MAX</u>
					<u>POTENTIAL</u>
					<u>(TONS/YEAR)</u>

<u>Equipment ID (SI):</u>		<u>Equipment Description</u>			<u>Record Date</u>
EQPT000000014		MOLDING AND COIL POTTING			9707
016					
			<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
			<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>			<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)		0	0	1.0818439
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)		0	0	0.3245532
PM-FIL	PT (Particulate Matter)		0	0	1.0818439
VOC	VOC (Volatile Organic Compounds)		0	0	0.3289388
					1.0818439
					0.3245532
					1.0818439
					0.3289388

<u>Equipment ID (SI):</u>		<u>Equipment Description</u>			<u>Record Date</u>
EQPT000000015		REFLOW-SOLDER-PROC			9707
017					
			<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
			<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>			<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)		0.0000320	0.0000320	0.0001566
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)		0.0000144	0.0000144	0.0000705
PM-FIL	PT (Particulate Matter)		0.0000320	0.0000320	0.0001566
VOC	VOC (Volatile Organic Compounds)		1.5170062	1.5170062	15.7297266
					0.0001566
					0.0000705
					0.0001566
					15.7297266

<u>Equipment ID (SI):</u>		<u>Equipment Description</u>			<u>Record Date</u>
EQPT000000017		Primary (Two) Machines			2004/07
2-MP1					
			<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
			<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>			<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)		0	0	0.3080498
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)		0	0	0.1386224
PM-FIL	PT (Particulate Matter)		0	0	0.3080498
					0.3080498
					0.1386224
					0.3080498

<u>Equipment ID (SI):</u>		<u>Equipment Description</u>			<u>Record Date</u>
EQPT000000018		Secondary (Three) Machines			2004/07
2-MP2					
			<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
			<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>			<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)		0	0	0.5716732
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)		0	0	0.2572530
PM-FIL	PT (Particulate Matter)		0	0	0.5716732
					0.5716732
					0.2572530
					0.5716732

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SD):</u>		<u>Equipment Description</u>		<u>Record Date</u>	
EQPT0000000019		Core (Three) Machines		2004/07	
2-MP3					
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	1.7563800	1.7563800
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.7903710	0.7903710
PM-FIL	PT (Particulate Matter)	0	0	1.7563800	1.7563800

<u>Equipment ID (SD):</u>		<u>Equipment Description</u>		<u>Record Date</u>	
EQPT0000000020		Case (Four) Machines		2004/07	
2-MP4					
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	2.2714680	2.2714680
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	1.0221606	1.0221606
PM-FIL	PT (Particulate Matter)	0	0	2.2714680	2.2714680

<u>Equipment ID (SD):</u>		<u>Equipment Description</u>		<u>Record Date</u>	
EQPT0000000021		Solder (Four) Robot		2004/07	
2-MP5					
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0	0	0.2190075	0.2190075

<u>Equipment ID (SD):</u>		<u>Equipment Description</u>		<u>Record Date</u>	
EQPT0000000022		Primary (Two) Machines		2004/08	
3-MP1					
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.4375094	0.4375094
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.1968793	0.1968793
PM-FIL	PT (Particulate Matter)	0	0	0.4375094	0.4375094

<u>Equipment ID (SD):</u>		<u>Equipment Description</u>		<u>Record Date</u>	
EQPT0000000023		Secondary (Two) Machines		2004/08	
3-MP2					
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.5301990	0.5301990
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.2385896	0.2385896
PM-FIL	PT (Particulate Matter)	0	0	0.5301990	0.5301990

<u>Equipment ID (SD):</u>		<u>Equipment Description</u>		<u>Record Date</u>	
EQPT0000000024		Case (Two) Machines		2004/08	
3-MP3					
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	2.1271032	2.1271032
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.9571964	0.9571964
PM-FIL	PT (Particulate Matter)	0	0	2.1271032	2.1271032

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>
EQPT0000000025	Solder (Four) Robots			2004/08
3-MP4				
		<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
		<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0	0	0.0985518
			-	0.0985518

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>
EQPT0000000026	Potting Cure Ovens			2004/08
3-MP8				
		<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
		<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
VOC	VOC (Volatile Organic Compounds)	0	0	3.8106000
			-	3.8106000

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>
EQPT0000000027	Electronic Power Steering (EPS) Line			2015/03
019				
		<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
		<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
H0-54-3	Hexane; N-Hexane	0	0	0.4298882
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.1649964
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.1649964
PM-FIL	PT (Particulate Matter)	0	0	0.1649964
VOC	VOC (Volatile Organic Compounds)	0	0	1.1850653

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>			<u>Record Date</u>
EQPT0000000028	Emergency Generator 30REOZJB			2015/03
020				
		<u>ACTUAL</u>	<u>UNCONTROLLED</u>	<u>TITLE V</u>
		<u>EMISSIONS</u>	<u>EMISSIONS</u>	<u>PTE</u>
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>	<u>(TONS/YEAR)</u>
124-38-9	Carbon Dioxide	0	0	16.3265764
630-08-0	CO (Carbon Monoxide)	0	0	0.0945747
10102-44-0	NO2 (Nitrogen Dioxide)	0	0	0.4390256
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.0308612
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.0277751
PM-FIL	PT (Particulate Matter)	0	0	0.0308612
7446-09-5	SO2 (Sulfur Dioxide)	0	0	0.0288702
VOC	VOC (Volatile Organic Compounds)	0	0	0.0358388

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>				
EQPT0000000029 021	Emergency Generator 200ROZD	2015/03				
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>	
124-38-9	Carbon Dioxide	0	0	23.8943322	23.8943322	
630-08-0	CO (Carbon Monoxide)	0	0	0.1384123	0.1384123	
10102-44-0	NO2 (Nitrogen Dioxide)	0	0	0.6425244	0.6425244	
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.0451661	0.0451661	
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.0406495	0.0406495	
PM-FIL	PT (Particulate Matter)	0	0	0.0451661	0.0451661	
7446-09-5	SO2 (Sulfur Dioxide)	0	0	0.0422522	0.0422522	
VOC	VOC (Volatile Organic Compounds)	0	0	0.0524510	0.0524510	

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>				
EQPT0000000030 022	Emergency Generator 230REOZV #1	2015/03				
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>	
124-38-9	Carbon Dioxide	0	0	106.1171282	106.1171282	
630-08-0	CO (Carbon Monoxide)	0	0	0.6147029	0.6147029	
10102-44-0	NO2 (Nitrogen Dioxide)	0	0	2.8535155	2.8535155	
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.2005873	0.2005873	
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.1805285	0.1805285	
PM-FIL	PT (Particulate Matter)	0	0	0.2005873	0.2005873	
7446-09-5	SO2 (Sulfur Dioxide)	0	0	0.1876461	0.1876461	
VOC	VOC (Volatile Organic Compounds)	0	0	0.2329400	0.2329400	

<u>Equipment ID (SI):</u>	<u>Equipment Description</u>	<u>Record Date</u>				
EQPT0000000031 023	Emergency Generator 230REOZV #2	2015/03				
<u>POLLUTANT ID/CAS and DESCRIPTION</u>		<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>	
124-38-9	Carbon Dioxide	0	0	106.1171282	106.1171282	
630-08-0	CO (Carbon Monoxide)	0	0	0.6147029	0.6147029	
10102-44-0	NO2 (Nitrogen Dioxide)	0	0	2.8535155	2.8535155	
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	0	0	0.2005873	0.2005873	
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	0	0	0.1805285	0.1805285	
PM-FIL	PT (Particulate Matter)	0	0	0.2005873	0.2005873	
7446-09-5	SO2 (Sulfur Dioxide)	0	0	0.1876461	0.1876461	
VOC	VOC (Volatile Organic Compounds)	0	0	0.2329400	0.2329400	

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SD): EQPT0000000032 **Equipment Description:** Emergency-Generator-250REOZD **Record Date:** 2015/03
024

<u>POLLUTANT ID/CAS and DESCRIPTION</u>	<u>ACTUAL EMISSIONS (TONS/YEAR)</u>	<u>UNCONTROLLED EMISSIONS (TONS/YEAR)</u>	<u>TITLE V PTE (TONS/YEAR)</u>	<u>MAX POTENTIAL (TONS/YEAR)</u>
124-38-9 Carbon Dioxide	0	0	104.4878415	104.4878415
630-08-0 CO (Carbon Monoxide)	0	0	0.6052649	0.6052649
10102-44-0 NO2 (Nitrogen Dioxide)	0	0	2.8097035	2.8097035
PM10-FIL PM10 (Particulate Matter—10 Microns Or Less)	0	0	0.1975075	0.1975075
PM25-FIL PM2.5 (Particulate Matter—2.5 Microns Or Less)	0	0	0.1777568	0.1777568
PM-FIL PT (Particulate Matter)	0	0	0.1975075	0.1975075
7446-09-5 SO2 (Sulfur Dioxide)	0	0	0.1847651	0.1847651
VOC VOC (Volatile Organic Compounds)	0	0	0.2293636	0.2293636

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 211610038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Compliance by Equipment ID (SI):

<u>Equipment ID (SI)</u>	<u>Equipment ID (SI) Description</u>	<u>Program Compliance Status</u>	<u>Operating Status</u>	<u>Compliance Status</u>
COMB0000000001	2-MP8 Potting-Cure-Oven	0-SIP-Source	0-Operating	4-In-Compliance-Certification
<u>Equipment ID (SI)</u>	<u>Equipment ID (SI) Description</u>	<u>Program Compliance Status</u>	<u>Operating Status</u>	<u>Compliance Status</u>
EQPT0000000001	001 SOLDR CIRCT BOARD	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000002	002 POXY BOND CIRCUIT	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000003	003 SENSBY SPOT SOLDR	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000004	004 SILICONE APPLICATION	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000005	006 BOARD-A-LINESPRY-FLX	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000006	007 SENSBYSOLDERBATH	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000007	008 ROBOT BOARD-A-LINE	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000008	009 BOARD-A-LINE-VISUAL	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000009	010 BORDALINECHASASSBLY	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000010	012 BORDBLINESPRYFLUX	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000011	013 B-LINEWAVESOLDER	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000012	014 B-LINEHANDSOLDER	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000013	015 ROBOTIC SOLDER	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000014	016 MOLDING AND COIL POTTING	0-SIP-Source	C-Under-Construction	3-In-Compliance-Inspection
EQPT0000000015	017 REFLOW SOLDER-PROC	0-SIP-Source	0-Operating	3-In-Compliance-Inspection
EQPT0000000017	2-MP1 Primary-(Two)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000018	2-MP2 Secondary-(Three)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000019	2-MP3 Core-(Three)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000020	2-MP4 Case-(Four)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000021	2-MP5 Solder-(Four)-Robot	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000022	3-MP1 Primary-(Two)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000023	3-MP2 Secondary-(Two)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000024	3-MP3 Case-(Two)-Machines	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000025	3-MP4 Solder-(Four)-Robots	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000026	3-MP8 Potting-Cure-Ovens	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000027	019 Electronic-Power-Steering (EPS) Line	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000028	020 Emergency Generator 30REOZJB	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000028	Emergency Generator 30REOZJB	G-Area Source MACT	O-Operating	4-In Compliance - Certification
EQPT0000000029	021 Emergency-Generator-200ROZD	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000029	Emergency-Generator-200ROZD	G-Area-Source-MACT	0-Operating	4-In-Compliance-Certification
EQPT0000000030	022 Emergency-Generator-230REOZV #1	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000030	Emergency-Generator-230REOZV #1	G-Area-Source-MACT	0-Operating	4-In-Compliance-Certification
EQPT0000000031	023 Emergency Generator 230REOZV #2	0-SIP Source	O-Operating	4-In Compliance - Certification
EQPT0000000031	Emergency Generator 230REOZV #2	G-Area Source MACT	O-Operating	4-In Compliance - Certification
EQPT0000000032	024 Emergency-Generator-250REOZD	0-SIP-Source	0-Operating	4-In-Compliance-Certification
EQPT0000000032	Emergency-Generator-250REOZD	G-Area-Source-MACT	0-Operating	4-In-Compliance-Certification

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): COMB0000000001	Equipment Description: Potting-Cure-Oven	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
2-MP8		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	34.00	0.67		3000.00	141.82	260.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MP8

Process ID: †	Process Description: Toshiba-esin & Harder TCG-597	SCC Code and Description: 40200801 Petroleum and Solvent Evaporation, Surface Coating Operations (4-02), Coating Oven -General (4-02-008), General (4-02-008-01)
----------------------	---	---

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Tons Coating Processed

Construction Date: 09/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
191.160000	0	8760.00	1674561.60	

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter-10 Microns Or Less)	0.0050000				0	0	4.18640400
PM25-FIL	PM2.5 (Particulate Matter-2.5 Microns Or Less)	0.0029000				0	0	3.26539512
PM-FIL	PT (Particulate Matter)	0.0050000				0	0	4.18640400

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000001 001	Equipment Description: SOLDR CIRCT BOARD	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.17		152.00	111.61	153.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 001

Process ID: 1 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 63.000000	Annual Throughput (SCC Units/yr) 0	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 551880.00	Maximum Operating Description 551880
--	--	---	--	--

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0	0	0.01471588

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 001

Process ID: 2 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 63.000000	Annual Throughput (SCC Units/yr) 551880.000000	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 551880.00	Maximum Operating Description 551880
--	--	---	--	--

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
-------------------------------------	------------------------	--------------------------------------	---------------------	-----------------------	-------------------------	---------------------------------------	--------------------------------

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000002	Equipment Description: POXY BOND CIRCUIT	Operating Schedule			% Annual Throughput			
002		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.20		151.00	80.11	136.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 002

Process ID: 1 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 63.000000	Annual Throughput (SCC Units/yr) 0	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 551880.00	Maximum Operating Description 551880
--	--	---	--	--

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0	0	0.01471588

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 002

Process ID: 2 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 63.000000	Annual Throughput (SCC Units/yr) 551880.000000	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 551880.00	Maximum Operating Description 551880
--	--	---	--	--

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
-------------------------------------	------------------------	--------------------------------------	---------------------	-----------------------	-------------------------	---------------------------------------	--------------------------------

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000003 003	Equipment Description: SENSBY SPOT SOLDR	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.50	0	111.00	9.40	88.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 003

Process ID: 1 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 137.000000	Annual Throughput (SCC Units/yr) 1200120.000000	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 1200120.00	Maximum Operating Description 1200120
---	---	---	---	---

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.03200120	0.03200120	0.03200120

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 003

Process ID: 2 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 63.000000	Annual Throughput (SCC Units/yr) 551880.000000	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 551880.00	Maximum Operating Description 551880
--	--	---	--	--

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
-------------------------------------	------------------------	--------------------------------------	---------------------	-----------------------	-------------------------	---------------------------------------	--------------------------------

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 003
Process ID: **Process Description:** **SCC Code and Description:**
 3 EPOX BOND CIRCUIT BOARD 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)
Number of Boilers: **SCC Units:** **Applicable Regulation**
Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/vr)	Maximum Operating Limitation (hrs/vr)	Maximum Operating Limitation	Maximum Operating Description
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.01471588	0.01471588	0.01471588

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 003
Process ID: **Process Description:** **SCC Code and Description:**
 4 EPOX BOND CIRCUIT BOARD 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)
Number of Boilers: **SCC Units:** **Applicable Regulation**
Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/vr)	Maximum Operating Limitation (hrs/vr)	Maximum Operating Limitation	Maximum Operating Description
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.01471588	0.01471588	0.01471588

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000004 004	Equipment Description: SILICONE APPLICATION	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.50	0	111.00	9.40	88.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 004

Process ID: 1 **Process Description:** SILICONEVARNISHAPPLICATIN **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 137.000000	Annual Throughput (SCC Units/vr) 1200120.000000	Maximum Operating Limitation (hrs/vr) 8760.00	Maximum Operating Limitation 1200120.00	Maximum Operating Description 1200120
---	---	---	---	---

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
110-54-3 Hexane; N-Hexane	0.0077400		0	0	4.64446440	4.64446440	4.64446440
VOC VOC (Volatile Organic Compounds)	0.0102200		0	0	6.13261320	6.13261320	6.13261320

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 004

Process ID: 2 **Process Description:** SOLDERING CIRCUIT BOARDS **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 63.000000	Annual Throughput (SCC Units/vr) 551880.000000	Maximum Operating Limitation (hrs/vr) 8760.00	Maximum Operating Limitation 551880.00	Maximum Operating Description 551880
--	--	---	--	--

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
-------------------------------------	------------------------	--------------------------------------	---------------------	-----------------------	-------------------------	---------------------------------------	--------------------------------

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 004
Process ID: **Process Description:** **SCC Code and Description:**
 3 EPOX BOND CIRCUIT BOARD 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)
Number of Boilers: **SCC Units:** **Applicable Regulation**
Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/vr)</u>	<u>Maximum Operating Limitation (hrs/vr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.01471588	0.01471588	0.01471588

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 004
Process ID: **Process Description:** **SCC Code and Description:**
 4 EPOX BOND CIRCUIT BOARD 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)
Number of Boilers: **SCC Units:** **Applicable Regulation**
Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/vr)</u>	<u>Maximum Operating Limitation (hrs/vr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.01471588	0.01471588	0.01471588

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000005 006	Equipment Description: BOARD-A-LINESPRY-FLX	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	<u>Stack Height</u> (ft)	<u>Stack Diameter</u> (ft)	<u>Height of Release</u> (ft)	<u>Stack Flow Rate</u> (acfm)	<u>Stack Velocity</u> (ft/sec)	<u>Exit Temperature</u> (F)
	32.00	0.58	0	497.00	29.90	78.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 006

Process ID: **Process Description:** **SCC Code and Description:**

1 ASAHI-FLUX-SPRAYER 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
136.000000	1191360.000000	8760.00	1191360.00	1191360

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOG VOC (Volatile Organic Compounds)	0.0028100		0	0	1.67386080	1.67386080	1.67386080

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 006

Process ID: **Process Description:** **SCC Code and Description:**

2 SOLDERING CIRCUIT BOARDS 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 006
Process ID: **Process Description:** **SCC Code and Description:**
 3 EPOX BOND CIRCUIT BOARD 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)
Number of Boilers: **SCC Units:** **Applicable Regulation**
Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/vr)</u>	<u>Maximum Operating Limitation (hrs/vr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.01471588	0.01471588	0.01471588

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 006
Process ID: **Process Description:** **SCC Code and Description:**
 4 EPOX BOND CIRCUIT BOARD 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)
Number of Boilers: **SCC Units:** **Applicable Regulation**
Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/vr)</u>	<u>Maximum Operating Limitation (hrs/vr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
63.000000	551880.000000	8760.00	551880.00	551880

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/vr)	PTE Emissions (tons/vr)
VOC VOC (Volatile Organic Compounds)	0.0000533		0	0	0.01471588	0.01471588	0.01471588

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000006 007	Equipment Description: SENSBEYSOLDERBATH	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.50		249.00	21.14	92.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 007

Process ID: 1 **Process Description:** LIQUIDSOLDER BATH **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 136.000000	Annual Throughput (SCC Units/yr) 1191360.000000	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 1191360.00	Maximum Operating Description 1191360	Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
					VOC VOC (Volatile Organic Compounds)	0.0037900		0	0	2.25762720	2.25762720	2.25762720

Equipment ID (SI): EQPT0000000007 008	Equipment Description: ROBOT-BOARD-A-LINE	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.17		11.00	8.08	76.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 008

Process ID: 1 **Process Description:** ROBOTIC SOLDER **SCC Code and Description:** 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing - General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** Each Circuit Boards Produced **Applicable Regulation:** 59010

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 10/26/2000	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information F	Sulfur Content % Sulfur 0	Use % Sulfur in emission calc N	Ash Content % Ash 0	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	-------------------------------------	---	-------------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 136.000000	Annual Throughput (SCC Units/yr) 1191360.000000	Maximum Operating Limitation (hrs/yr) 8760.00	Maximum Operating Limitation 1191360.00	Maximum Operating Description 1191360	Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
					VOC VOC (Volatile Organic Compounds)	0.0037900		0	0	2.25762720	2.25762720	2.25762720

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description:</u>	<u>Operating Schedule</u>			<u>% Annual Throughput</u>			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
EQPT0000000008 009	BOARD-A-LINE-VISUAL	24	7	52	25	25	25	25

<u>Stack Information:</u>	<u>Stack Height (ft)</u>	<u>Stack Diameter (ft)</u>	<u>Height of Release (ft)</u>	<u>Stack Flow Rate (acfm)</u>	<u>Stack Velocity (ft/sec)</u>	<u>Exit Temperature (F)</u>
	32.00	0.38		500.00	73.48	74.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 009

Process ID: **Process Description:** **SCC Code and Description:**

1 VISUALINSPECTIONHANDSOLDR 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing--General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each-Circuit-Boards-Produced 59010

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in-emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in-emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Pollutant ID and Description</u>	<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>	<u>Actual PTE</u>		<u>Actual Unctrl Act Emissions</u>		<u>PTE Emissions</u>
						<u>Factor</u>	<u>Ctrl. Description</u>	<u>Ctrl. Eff.</u>	<u>Emissions (tons/yr)</u>	<u>Emissions (tons/yr)</u>
VOC VOC (Volatile Organic Compounds)	136.000000	1191360.000000	8760.00	1191360.00	1191360	0	0	2.25762720	2.25762720	2.25762720

<u>Equipment ID (SI):</u>	<u>Equipment Description:</u>	<u>Operating Schedule</u>			<u>% Annual Throughput</u>			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
EQPT0000000009 010	BORDALINECHASASSBLY	24	7	52	25	25	25	25

<u>Stack Information:</u>	<u>Stack Height (ft)</u>	<u>Stack Diameter (ft)</u>	<u>Height of Release (ft)</u>	<u>Stack Flow Rate (acfm)</u>	<u>Stack Velocity (ft/sec)</u>	<u>Exit Temperature (F)</u>
	32.00	0.17		50.00	36.71	82.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 010

Process ID: **Process Description:** **SCC Code and Description:**

1 HAND-SOLDERING IRONS 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing--General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each-Circuit-Boards-Produced 59010

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in-emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in-emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Pollutant ID and Description</u>	<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>	<u>Actual PTE</u>		<u>Actual Unctrl Act Emissions</u>		<u>PTE Emissions</u>
						<u>Factor</u>	<u>Ctrl. Description</u>	<u>Ctrl. Eff.</u>	<u>Emissions (tons/yr)</u>	<u>Emissions (tons/yr)</u>
VOC VOC (Volatile Organic Compounds)	136.000000	1191360.000000	8760.00	1191360.00	1191360	0	0	2.25762720	2.25762720	2.25762720

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description:</u>	<u>Operating Schedule</u>			<u>% Annual Throughput</u>			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
EQPT0000000010	BORDBLINESPRYFLUX	24	7	52	25	25	25	25

<u>Stack Information:</u>	<u>Stack Height (ft)</u>	<u>Stack Diameter (ft)</u>	<u>Height of Release (ft)</u>	<u>Stack Flow Rate (acfm)</u>	<u>Stack Velocity (ft/sec)</u>	<u>Exit Temperature (F)</u>
	32.00	0.58	0	369.00	23.00	67.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 012

Process ID: **Process Description:** **SCC Code and Description:**

1 SPRAY-FLUX 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing--General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each-Circuit-Boards-Produced

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
14.000000	122640.000000	8760.00	122640.00	122640

<u>Pollutant ID and Description</u>	<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual</u>	<u>PTE</u>	<u>Actual</u>	<u>Unctrl Act Emissions</u>	<u>PTE Emissions</u>
			<u>Ctrl.</u>	<u>Ctrl. Eff.</u>	<u>Emissions</u>	<u>(tons/yr)</u>	<u>(tons/yr)</u>
VOC VOC (Volatile Organic Compounds)	0.0001900		0	0	0.01165080	0.01165080	0.01165080

<u>Equipment ID (SI):</u>	<u>Equipment Description:</u>	<u>Operating Schedule</u>			<u>% Annual Throughput</u>			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
EQPT0000000011	B-LINEWAVESOLDER	24	7	52	25	25	25	25

<u>Stack Information:</u>	<u>Stack Height (ft)</u>	<u>Stack Diameter (ft)</u>	<u>Height of Release (ft)</u>	<u>Stack Flow Rate (acfm)</u>	<u>Stack Velocity (ft/sec)</u>	<u>Exit Temperature (F)</u>
	32.00	0.66		1592.00	77.56	89.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 013

Process ID: **Process Description:** **SCC Code and Description:**

1 SENSBY-LG200H-SOLDER-MACH 31303001 Industrial Processes, Electrical Equipment (3-13), Manufacturing--General (3-13-030), Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each-Circuit-Boards-Produced 59010

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
14.000000	122640.000000	8760.00	122640.00	122640

<u>Pollutant ID and Description</u>	<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual</u>	<u>PTE</u>	<u>Actual</u>	<u>Unctrl Act Emissions</u>	<u>PTE Emissions</u>
			<u>Ctrl.</u>	<u>Ctrl. Eff.</u>	<u>Emissions</u>	<u>(tons/yr)</u>	<u>(tons/yr)</u>
VOC VOC (Volatile Organic Compounds)	0.0037900		0	0	0.23240280	0.23240280	0.23240280

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000012	Equipment Description: B-LINEHANDSOLDER	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
014		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.44		500.00	54.81	74.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 014

Process ID: **Process Description:** **SCC Code and Description:**

1 HAND-SOLDER-IN IRONS 31303001 Industrial Processes, Electrical Equipment (3-13); Manufacturing - General (3-13-030); Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
14.000000	122640.000000	8760.00	122640.00	122640

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.0037900		0	0	0.23240280	0.23240280	0.23240280

Equipment ID (SI): EQPT0000000013	Equipment Description: ROBOTIC-SOLDER	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
015		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	0.58		50.00	3.15	74.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 015

Process ID: **Process Description:** **SCC Code and Description:**

1 TSUTSUMI-TO-621 31303001 Industrial Processes, Electrical Equipment (3-13); Manufacturing - General (3-13-030); Circuit Board Manufacturing (3-13-030-01)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Each Circuit Boards Produced 59010

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
10/26/2000	N	Y	F	0	N	0	N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
146.000000	1278960.000000	8760.00	1278960.00	1278960

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.0037900		0	0	2.42362920	2.42362920	2.42362920

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000014 **Equipment Description:** MOLDING AND COIL POTTING
Operating Schedule: Hours/Day: 24, Days/Week: 6, Weeks/Year: 49
% Annual Throughput: Dec-Feb: 25, Mar-May: 25, Jun-Aug: 25, Sep-Nov: 25

Stack Information: Stack-Height (ft): 33.00, Stack Diameter (ft): 0.35, Height of Release (ft): 0, Stack Flow Rate (acfm): 2800.00, Stack Velocity (ft/sec): 485.00, Exit Temperature (F): 212.00

Equipment ID (SI) Detail Information: Equipment ID (SI): 016
Process ID: † **Process Description:** MOLDING AND COIL POTTING **SCC Code and Description:** 30800701 Industrial Processes, Rubber and Miscellaneous Plastics Products (3-08), Fiberglass Resin Products (3-08-007), Plastics Machining: Drilling/Sanding/Sawing/etc. (3-08-007-01)

Number of Boilers: **SCC Units:** **Applicable Regulation:**
Boiler Number and Capacity (mmBTU/hr): Tons Material Processed 57061-50035

Construction Date: 03/24/1997 **Fugitive Emissions:** N **Count Emission For PTE:** Y **Confidential Information:** F **Sulfur Content % Sulfur:** 0 **Use % Sulfur in emission calc:** N **Ash Content % Ash:** 0 **Use % Ash in emission calc:** N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr): 0.098000 **Annual Throughput (SCC Units/yr):** 0 **Maximum Operating Limitation (hrs/yr):** 8755.00 **Maximum Operating Limitation:** 858.00 **Maximum Operating Description:** 858

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL PM10 (Particulate Matter—10 Microns Or Less)	2.5218100		0	0	0	0	1.08184388
PM25-FIL PM2.5 (Particulate Matter—2.5 Microns Or Less)	0.7565430		0	0	0	0	0.32455316
PM-FIL PT (Particulate Matter)	2.5218100		0	0	0	0	1.08184388
VOC VOC (Volatile Organic Compounds)	0.1613100		0	0	0	0	0.06920118

Equipment ID (SI) Detail Information: Equipment ID (SI): 016
Process ID: 2 **Process Description:** SOLDERING OPERATION-LBS **SCC Code and Description:** 39999994 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), Other Not Classified (3-99-999-94)

Number of Boilers: **SCC Units:** **Applicable Regulation:**
Boiler Number and Capacity (mmBTU/hr): Pounds Material Processed 57061-50035

Construction Date: 03/24/1997 **Fugitive Emissions:** N **Count Emission For PTE:** Y **Confidential Information:** F **Sulfur Content % Sulfur:** 0 **Use % Sulfur in emission calc:** N **Ash Content % Ash:** 0 **Use % Ash in emission calc:** N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr): 0.154000 **Annual Throughput (SCC Units/yr):** 0 **Maximum Operating Limitation (hrs/yr):** 8760.00 **Maximum Operating Limitation:** 1349.00 **Maximum Operating Description:** 1349

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.3116900		0	0	0	0	0.21024114

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000015	Equipment Description: REFLOW-SOLDER-PROC	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
017		24	6	49	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	33.00	0.35	0	2800.00	485.00	257.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 017

Process ID: **Process Description:** **SCC Code and Description:**

1 REFLOW-SOLDER-PROC-IN-LBS 39999994 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), Other Not Classified (3-99-999-94)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Pounds-Material-Processed 57061-50035

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in-emission calc	Ash Content % Ash	Use % Ash in-emission calc
10/26/1994	N	Y	F	0	N	0	N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.149000	346.000000	8758.00	1305.00	1305

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOG VOC (Volatile Organic Compounds)	0.0370000		0	0	0.00640100	0.00640100	0.02414143

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 017

Process ID: **Process Description:** **SCC Code and Description:**

2 FLOW-SOLD-PROC-IN-LBS-CE 39999994 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), Other Not Classified (3-99-999-94)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Pounds-Material-Processed 57061-50035

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in-emission calc	Ash Content % Ash	Use % Ash in-emission calc
10/26/1994	N	Y	F	0	N	0	N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
1.375000	686.000000	8754.00	12037.00	12037

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOG VOC (Volatile Organic Compounds)	0.9141700		0	0	0.31356031	0.31356031	5.50181787

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000017	Equipment Description: Primary (Two) Machines	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
2-MPI		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	2.26		2230.00	9.27	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MPI

Process ID: †	Process Description: Toraycon-1101-GX54B	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers:	SCC Units: Tons Material Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 09/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
13.270000	0	8760.00	116245.20	

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	0.0053000				0	0	0.30804978
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	0.0023850				0	0	0.13862240
PM-FIL	PT (Particulate Matter)	0.0053000				0	0	0.30804978

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000018	Equipment Description: Secondary (Three) Machines	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
2-MP2		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	2.26		2230.00	9.27	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MP2

Process ID: 2	Process Description: Noryl-Resin	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment *(3-99-999-99)
Number of Boilers:	SCC Units: Tons-Material-Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 09/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr): 27.770000	Annual Throughput (SCC Units/yr): 0	Maximum Operating Limitation (hrs/yr): 8760.00	Maximum Operating Limitation: 243265.20	Maximum Operating Description:
--	--	---	--	---------------------------------------

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	0.0047000				0	0	0.57167322
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	0.0021150				0	0	0.25725295
PM-FIL	PT (Particulate Matter)	0.0047000				0	0	0.57167322

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000019	Equipment Description: Core-(Three)-Machines	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
2-MP3		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	2.26		1790.00	7.44	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MP3

Process ID: 3	Process Description: Santoprene	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment *(3-99-999-99)
Number of Boilers:		SCC Units: Tons Material Processed
Boiler Number and Capacity (mmBTU/hr):		Applicable Regulation

Construction Date: 09/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
80.200000	0	8760.00	702552.00	

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter-10 Microns Or Less)	0.0050000				0	0	1.75638000
PM25-FIL	PM2.5 (Particulate Matter-2.5 Microns Or Less)	0.0022500				0	0	0.79037100
PM-FIL	PT (Particulate Matter)	0.0050000				0	0	1.75638000

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000020	Equipment Description: Case (Four) Machines	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
2-MP4		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	32.00	2.26		1790.00	7.44	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MP4

Process ID: 4	Process Description: Toraycon-PBT-H34G05B	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers:	SCC Units: Tons-Material-Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 09/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr): 129.650000	Annual Throughput (SCC Units/yr): 0	Maximum Operating Limitation (hrs/yr): 8760.00	Maximum Operating Limitation: 1135734.00	Maximum Operating Description:
---	--	---	---	---------------------------------------

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	0.0040000				0	0	2.27146800
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	0.0018000				0	0	1.02216060
PM-FIL	PT (Particulate Matter)	0.0040000				0	0	2.27146800

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description:</u>	<u>Operating Schedule</u>			<u>% Annual Throughput</u>			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
EQPT000000021	Solder (Four) Robot	24	7	52	25	25	25	25
2-MP5								

<u>Stack Information:</u>	<u>Stack Height (ft)</u>	<u>Stack Diameter (ft)</u>	<u>Height of Release (ft)</u>	<u>Stack Flow Rate (acfm)</u>	<u>Stack Velocity (ft/sec)</u>	<u>Exit Temperature (F)</u>
	32.00	2.26		2230.00	9.27	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MP5
Process ID: **Process Description:** **SCC Code and Description:**
 † Flux 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers: **SCC Units:** **Applicable Regulation**
 Boiler Number and Capacity (mmBTU/hr): Tons Material Processed

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
09/01/2004	N	Y	N		N		N

Operating Information:

<u>Pollutant ID and Description</u>	<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>	<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual Ctrl.</u>	<u>PTE Ctrl. Eff.</u>	<u>Actual Emissions</u>	<u>Unctrl Act Emissions (tons/yr)</u>	<u>PTE Emissions (tons/yr)</u>
VOC VOC (Volatile Organic Compounds)	0.088900	0	8760.00	770.88		0.2841000				0	0	0.10950350

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 2-MP5
Process ID: **Process Description:** **SCC Code and Description:**
 2 Thinner 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers: **SCC Units:** **Applicable Regulation**
 Boiler Number and Capacity (mmBTU/hr): Tons Material Processed

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
09/01/2004	N	Y	N		N		N

Operating Information:

<u>Pollutant ID and Description</u>	<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>	<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual Ctrl.</u>	<u>PTE Ctrl. Eff.</u>	<u>Actual Emissions</u>	<u>Unctrl Act Emissions (tons/yr)</u>	<u>PTE Emissions (tons/yr)</u>
VOC VOC (Volatile Organic Compounds)	0.029000	0	8760.00	254.04		0.8621000				0	0	0.10950394

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000022	Equipment Description: Primary (Two) Machines	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
3-MPI		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	34.00	2.26		1050.00	4.36	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 3-MPI

Process ID: †	Process Description: Toraycon 1101-GX54B	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers:	SCC Units: Tons Material Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 08/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
20.810000	0	8760.00	182295.50	

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	0.0048000				0	0	0.43750944
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	0.0021600				0	0	0.19687925
PM-FIL	PT (Particulate Matter)	0.0048000				0	0	0.43750944

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

<u>Equipment ID (SI):</u>	<u>Equipment Description:</u>	<u>Operating Schedule</u>			<u>% Annual Throughput</u>			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
EQPT0000000023	Secondary (Two) Machines	24	7	52	25	25	25	25
3-MP2								

<u>Stack Information:</u>	<u>Stack Height (ft)</u>	<u>Stack Diameter (ft)</u>	<u>Height of Release (ft)</u>	<u>Stack Flow Rate (acfm)</u>	<u>Stack Velocity (ft/sec)</u>	<u>Exit Temperature (F)</u>
	34.00	2.26		1050.00	4.36	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 3-MP2

Process ID: 2 **Process Description:** Noryl-Resin **SCC Code and Description:** 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): Tons Material Processed

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
08/01/2004	N	Y	N		N		N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>
24.210000	0	8760.00	212079.60	

<u>Pollutant ID and Description</u>		<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual Ctrl.</u>	<u>PTE Ctrl. Eff.</u>	<u>Actual Emissions</u>	<u>Unctrl Act Emissions (tons/yr)</u>	<u>PTE Emissions (tons/yr)</u>
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	0.0050000				0	0	0.53019900
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	0.0022500				0	0	0.23858955
PM-FIL	PT (Particulate Matter)	0.0050000				0	0	0.53019900

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000024	Equipment Description: Case-(Two)-Machines	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
3-MP3		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	34.00	2.26		1050.00	4.36	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 3-MP3

Process ID: 3	Process Description: Toraycon-PBT-113405B	SCC Code and Description: 39999999 Industrial-Processes, Miscellaneous-Manufacturing-Industries-(3-99), Miscellaneous Industrial-Processes-(3-99-999), See Comment **-(3-99-999-99)
Number of Boilers:	SCC Units: Tons-Material-Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 08/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur: N	Use % Sulfur in emission calc: N	Ash Content % Ash: N	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	-----------------------------------	---	-----------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
121.410000	0	8760.00	1063551.60	

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
PM10-FIL	PM10 (Particulate Matter-10 Microns Or Less)	0.0040000				0	0	2.12710320
PM25-FIL	PM2.5 (Particulate Matter-2.5 Microns Or Less)	0.0018000				0	0	0.95719644
PM-FIL	PT (Particulate Matter)	0.0040000				0	0	2.12710320

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000025	Equipment Description: Solder (Four) Robots	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
3-MP4		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	34.00	2.26		1050.00	4.36	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 3-MP4

Process ID: 4	Process Description: Flux	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers:	SCC Units: Tons Material Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 08/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.007900	0	8760.00	69.20	

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
-------------------------------------	------------------------	--------------------------------------	---------------------	-----------------------	-------------------------	---------------------------------------	--------------------------------

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 3-MP4

Process ID: 5	Process Description: Thinner	SCC Code and Description: 39999999 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers:	SCC Units: Tons Material Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 08/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.026000	0	8760.00	227.76	

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	0.8654000				0	0	0.09855175

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000026	Equipment Description: Potting-Cure-Ovens	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
3-MP8		24	7	52	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
	34.00	2.26		1050.00	4.36	95.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 3-MP8

Process ID: 6	Process Description: Potting-Oven	SCC Code and Description: 39999999 Industrial-Processes, Miscellaneous-Manufacturing-Industries (3-99), Miscellaneous Industrial-Processes (3-99-999), See Comment ** (3-99-999-99)
Number of Boilers:	SCC Units: Tons-Material-Processed	Applicable Regulation
Boiler Number and Capacity (mmBTU/hr):		

Construction Date: 08/01/2004	Fugitive Emissions: N	Count Emission For PTE: Y	Confidential Information: N	Sulfur Content % Sulfur:	Use % Sulfur in emission calc: N	Ash Content % Ash:	Use % Ash in emission calc: N
--------------------------------------	------------------------------	----------------------------------	------------------------------------	---------------------------------	---	---------------------------	--------------------------------------

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.870000	0	8760.00	7621.20	

Pollutant ID and Description	Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
VOC VOC (Volatile Organic Compounds)	1.0000000				0	0	3.81060000

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT000000027 **Equipment Description:** Electronic Power Steering (EPS) Line
Operating Schedule: Hours/Day: 24, Days/Week: 7, Weeks/Year: 52
% Annual Throughput: Dec-Feb: 25, Mar-May: 25, Jun-Aug: 25, Sep-Nov: 25

Stack Information: Stack-Height (ft): 25.00, Stack Diameter (ft): 0.50, Height of Release (ft): 0.50, Stack-Flow Rate (acfm): 1677.00, Stack-Velocity (ft/sec): 142.35, Exit Temperature (F): 75.00

Equipment ID (SI) Detail Information: Equipment ID (SI): 019
Process ID: † **Process Description:** Flux Lead Freerite **SCC Code and Description:** 39999994 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), Other Not Classified (3-99-999-94)
Number of Boilers: **SCC Units:** **Applicable Regulation:** 401-KAR-59-010; 401-KAR-63-020
Boiler Number and Capacity (mmBTU/hr): Pounds Material Processed

Construction Date: 11/01/2014 **Fugitive Emissions:** N **Count Emission For PTE:** Y **Confidential Information:** N **Sulfur Content % Sulfur:** **Use % Sulfur in emission calc:** N **Ash Content % Ash:** **Use % Ash in emission calc:** N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr): 0.071976 **Annual Throughput (SCC Units/yr):** 0 **Maximum Operating Limitation (hrs/yr):** 8760.00 **Maximum Operating Limitation:** 630.51 **Maximum Operating Description:** Pounds/year

Pollutant ID and Description: VOC (Volatile Organic Compounds) **Emission Factor:** 0.8500000 **Control Equipment Description:** **Actual Ctrl.:** **PTE Ctrl. Eff.:** **Actual Emissions:** 0 **Unctrl Act Emissions (tons/yr):** 0 **PTE Emissions (tons/yr):** 0.26796665

Equipment ID (SI) Detail Information: Equipment ID (SI): 019
Process ID: 2 **Process Description:** Humiseal **SCC Code and Description:** 39999994 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), Other Not Classified (3-99-999-94)
Number of Boilers: **SCC Units:** **Applicable Regulation:** 401-KAR-59-010; 401-KAR-63-020
Boiler Number and Capacity (mmBTU/hr): Pounds Material Processed

Construction Date: 11/01/2014 **Fugitive Emissions:** N **Count Emission For PTE:** Y **Confidential Information:** N **Sulfur Content % Sulfur:** **Use % Sulfur in emission calc:** N **Ash Content % Ash:** **Use % Ash in emission calc:** N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr): 0.130865 **Annual Throughput (SCC Units/yr):** 0 **Maximum Operating Limitation (hrs/yr):** 8760.00 **Maximum Operating Limitation:** 1146.38 **Maximum Operating Description:** Pounds/year

Pollutant ID and Description: VOC (Volatile Organic Compounds) **Emission Factor:** 0.8500000 **Control Equipment Description:** **Actual Ctrl.:** **PTE Ctrl. Eff.:** **Actual Emissions:** 0 **Unctrl Act Emissions (tons/yr):** 0 **PTE Emissions (tons/yr):** 0.48721040

KENTUCKY DIVISION FOR AIR QUALITY
 KENTUCKY EMISSIONS INVENTORY SYSTEM
 DETAILED PLANT INFORMATION

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI) Detail Information:

Equipment ID (SI): 019

Process ID: **Process Description:**

SCC Code and Description:

3 Thinner (hexane)

30999994 Industrial Processes, Miscellaneous Manufacturing Industries (3-99), Miscellaneous Industrial Processes (3-99-999), Other Not Classified (3-99-999-94)

Number of Boilers:

SCC Units:

Applicable Regulation

Boiler Number and Capacity (mmBTU/hr):

Pounds Material Processed

401-KAR-59-010; 401-KAR-63-020

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
11/01/2014	N	Y	N		N		N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>	<u>Pollutant ID and Description</u>	<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual Ctrl.</u>	<u>PTE Ctrl. Eff.</u>	<u>Actual Emissions</u>	<u>Unctrl Act Emissions (tons/yr)</u>	<u>PTE Emissions (tons/yr)</u>
0.098148	0	8760.00	859.78	Pounds/year	H0-54-3 Hexane; N-Hexane	1.0000000				0	0	0.42988824
					VOC VOC (Volatile Organic Compounds)	1.0000000				0	0	0.42988824

Equipment ID (SI) Detail Information:

Equipment ID (SI): 019

Process ID: **Process Description:**

SCC Code and Description:

4 Tin Solder (M705-E)

30904300 Industrial Processes, Fabricated Metal Products (3-09), Soldering (3-09-043), General (3-09-043-00)

Number of Boilers:

SCC Units:

Applicable Regulation

Boiler Number and Capacity (mmBTU/hr):

1000 Pounds Electrode Consumed

401-KAR-59-010; 401-KAR-63-020

<u>Construction Date:</u>	<u>Fugitive Emissions</u>	<u>Count Emission For PTE</u>	<u>Confidential Information</u>	<u>Sulfur Content % Sulfur</u>	<u>Use % Sulfur in emission calc</u>	<u>Ash Content % Ash</u>	<u>Use % Ash in emission calc</u>
11/01/2014	N	Y	N		N		N

Operating Information:

<u>Maximum Hourly Operating Rate (SCC Units/hr)</u>	<u>Annual Throughput (SCC Units/yr)</u>	<u>Maximum Operating Limitation (hrs/yr)</u>	<u>Maximum Operating Limitation</u>	<u>Maximum Operating Description</u>	<u>Pollutant ID and Description</u>	<u>Emission Factor</u>	<u>Control Equipment Description</u>	<u>Actual Ctrl.</u>	<u>PTE Ctrl. Eff.</u>	<u>Actual Emissions</u>	<u>Unctrl Act Emissions (tons/yr)</u>	<u>PTE Emissions (tons/yr)</u>
0.000981	0	8760.00	8.60	1000 Pounds/year	PM10-FIL PM10 (Particulate Matter—10 Microns Or Less)	38.4000000				0	0	0.16499635
					PM25-FIL PM2.5 (Particulate Matter—2.5 Microns Or Less)	38.4000000				0	0	0.16499635
					PM-FIL PT (Particulate Matter)	38.4000000				0	0	0.16499635

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000029	Equipment Description: Emergency Generator 200ROZD	Operating Schedule			% Annual Throughput			
		Hours/Day	Days/Week	Weeks/Year	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
021		2	5	50	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
			10.00			77.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 021

Process ID: **Process Description:** **SCC Code and Description:**

‡ 20200102 Internal Combustion Engines, Industrial - (2-02), Distillate Oil (Diesel) - (2-02-001), Reciprocating - (2-02-001-02)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): 1000 Gallons Distillate Oil (Diesel) Burned 40 CFR Part 63 Subpart ZZZZ

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
02/26/1998	N	Y	N		N		N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.004253	0	500.00	2-13	1000 Gallons/Year

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
124-38-9	Carbon Dioxide	22472.9200000				0	0	23.89433219
630-08-0	CO (Carbon Monoxide)	130.1785000				0	0	0.13841229
10102-44-0	NO2 (Nitrogen Dioxide)	604.3023000				0	0	0.64252442
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	42.4793000				0	0	0.04516612
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	38.2313700				0	0	0.04064950
PM-FIL	PT (Particulate Matter)	42.4793000				0	0	0.04516612
7446-09-5	SO2 (Sulfur Dioxide)	39.7387000				0	0	0.04225217
VOC	VOC (Volatile Organic Compounds)	49.3308000				0	0	0.05245097

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

2025 Emissions Survey

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000030	Equipment Description: Emergency Generator 230REOZV #1	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
022		2	5	50	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
			10.00			77.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 022

Process ID: **Process Description:** **SCC Code and Description:**

† 20200102 Internal Combustion Engines, Industrial - (2-02), Distillate Oil (Diesel) - (2-02-001), Reciprocating - (2-02-001-02)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): 1000 Gallons Distillate Oil (Diesel) Burned 40 CFR Part 63 Subpart ZZZZ

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
12/29/2004	N	Y	N		N		N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.018888	0	500.00	9.44	1000 Gallons/Year

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
124-38-9	Carbon Dioxide	22472.9200000				0	0	106.11712824
630-08-0	CO (Carbon Monoxide)	130.1785000				0	0	0.61470288
10102-44-0	NO2 (Nitrogen Dioxide)	604.3023000				0	0	2.85351546
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	42.4793000				0	0	0.20058725
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	38.2313700				0	0	0.18052853
PM-FIL	PT (Particulate Matter)	42.4793000				0	0	0.20058725
7446-09-5	SO2 (Sulfur Dioxide)	39.7387000				0	0	0.18764614
VOC	VOC (Volatile Organic Compounds)	49.3308000				0	0	0.23294004

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000031 023	Equipment Description: Emergency Generator 230REOV #2	Operating Schedule			% Annual Throughput			
		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		2	5	50	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
			10.00			77.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 023

Process ID: 1 **Process Description:** **SCC Code and Description:** 20200102 Internal Combustion Engines, Industrial (2-02), Distillate Oil (Diesel) (2-02-001), Reciprocating (2-02-001-02)

Number of Boilers: **SCC Units:** 1000 Gallons Distillate Oil (Diesel) Burned **Applicable Regulation:** 40 CFR Part 63 Subpart ZZZZ

Boiler Number and Capacity (mmBTU/hr):

Construction Date: 12/29/2004	Fugitive Emissions N	Count Emission For PTE Y	Confidential Information N	Sulfur Content % Sulfur	Use % Sulfur in emission calc N	Ash Content % Ash	Use % Ash in emission calc N
---	--------------------------------	------------------------------------	--------------------------------------	--------------------------------	---	--------------------------	--

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr) 0.018888	Annual Throughput (SCC Units/yr) 0	Maximum Operating Limitation (hrs/yr) 500.00	Maximum Operating Limitation 9.44	Maximum Operating Description 1000 Gallons/Year
---	--	--	---	---

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
124-38-9	Carbon Dioxide	22472.9200000				0	0	106.11712824
630-08-0	CO (Carbon Monoxide)	130.1785000				0	0	0.61470288
10102-44-0	NO2 (Nitrogen Dioxide)	604.3023000				0	0	2.85351546
PM10-FIL	PM10 (Particulate Matter - 10 Microns Or Less)	42.4793000				0	0	0.20058725
PM25-FIL	PM2.5 (Particulate Matter - 2.5 Microns Or Less)	38.2313700				0	0	0.18052853
PM-FIL	PT (Particulate Matter)	42.4793000				0	0	0.20058725
7446-09-5	SO2 (Sulfur Dioxide)	39.7387000				0	0	0.18764614
VOC	VOC (Volatile Organic Compounds)	49.3308000				0	0	0.23294004

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County

Equipment ID (SI): EQPT0000000032	Equipment Description: Emergency Generator 250REOZD	Operating Schedule			% Annual Throughput			
024		<u>Hours/Day</u>	<u>Days/Week</u>	<u>Weeks/Year</u>	<u>Dec-Feb</u>	<u>Mar-May</u>	<u>Jun-Aug</u>	<u>Sep-Nov</u>
		2	5	50	25	25	25	25

Stack Information:	Stack Height (ft)	Stack Diameter (ft)	Height of Release (ft)	Stack Flow Rate (acfm)	Stack Velocity (ft/sec)	Exit Temperature (F)
			10.00			77.00

Equipment ID (SI) Detail Information: **Equipment ID (SI):** 024

Process ID: **Process Description:** **SCC Code and Description:**

† 20200102 Internal Combustion Engines, Industrial - (2-02), Distillate Oil (Diesel) - (2-02-001), Reciprocating - (2-02-001-02)

Number of Boilers: **SCC Units:** **Applicable Regulation**

Boiler Number and Capacity (mmBTU/hr): 1000 Gallons Distillate Oil (Diesel) Burned 40 CFR Part 63 Subpart ZZZZ

Construction Date:	Fugitive Emissions	Count Emission For PTE	Confidential Information	Sulfur Content % Sulfur	Use % Sulfur in emission calc	Ash Content % Ash	Use % Ash in emission calc
07/07/2001	N	Y	N		N		N

Operating Information:

Maximum Hourly Operating Rate (SCC Units/hr)	Annual Throughput (SCC Units/yr)	Maximum Operating Limitation (hrs/yr)	Maximum Operating Limitation	Maximum Operating Description
0.018598	0	500.00	9.30	1000 Gallons/Year

Pollutant ID and Description		Emission Factor	Control Equipment Description	Actual Ctrl.	PTE Ctrl. Eff.	Actual Emissions	Unctrl Act Emissions (tons/yr)	PTE Emissions (tons/yr)
124-38-9	Carbon Dioxide	22472.9200000				0	0	104.48784154
630-08-0	CO (Carbon Monoxide)	130.1785000				0	0	0.60526494
10102-44-0	NO2 (Nitrogen Dioxide)	604.3023000				0	0	2.80970354
PM10-FIL	PM10 (Particulate Matter—10 Microns Or Less)	42.4793000				0	0	0.19750751
PM25-FIL	PM2.5 (Particulate Matter—2.5 Microns Or Less)	38.2313700				0	0	0.17775675
PM-FIL	PT (Particulate Matter)	42.4793000				0	0	0.19750751
7446-09-5	SO2 (Sulfur Dioxide)	39.7387000				0	0	0.18476509
VOC	VOC (Volatile Organic Compounds)	49.3308000				0	0	0.22936355

**KENTUCKY DIVISION FOR AIR QUALITY
KENTUCKY EMISSIONS INVENTORY SYSTEM
DETAILED PLANT INFORMATION**

Facility ID: 2116100038 **AI ID:** 35349 **YEAR OF INVENTORY:** 2025 Mason County