1. Product and Company Identification

Product Name: Raven 405 Part A

VersaFlex / Raven Lining Systems
686 South Adams Street
Kansas City, KS 66105

www.versaflex.com / www.ravenlining.com

Company Phone: (913) 321-9000
Company Toll Free: (800) 321-0906

CHEMTREC 24 hour Emergency USA: (800) 424-9300
CHEMTREC 24 hour International: (703) 527-3887

Product Use: Primer / Sealer / Coating / Lining
Not recommended for: Non Professional Use

2. Hazards Identification

Signal Word: Warning

GHS Ratings:

Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation.
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days.
Skin sensitizer	1	Skin sensitizer.

GHS Hazards

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

GHS Precautions

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P321	Specific treatment (see Section 4 of the SDS).
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P302+P352	IF ON SKIN: Wash with soap and water.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P337+P313	Get medical advice/attention.
P501	Dispose of contents/container according to Section 13 of the SDS.

3. Composition / Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Epoxy Resin	25068-38-6	>70%
Fibrous Glass	65997-17-3	<30%
Amorphous Fumed Silica	67762-90-7	0 - 10%
Titanium Dioxide	13463-67-7	0 - 10%
Amorphous Silicon Dioxide	7631-86-9	0 - 10%

4. First Aid Measures

Inhalation: Remove to fresh air if effects occur. Consult a physician.
Eye Contact: Flush with large quantities of water for at least 15 minutes. Consult a physician.
Skin Contact: Wash thoroughly with soap and flowing water.
Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Flash Point: >100 C (>212 F)

Flammable Properties: Product is not considered a fire hazard, but will burn if ignited.
NFPA Flammability Class: III B (Combustible liquid).

Suitable Extinguishing Media: Carbon dioxide, dry chemical, water fog or fine spray. Alcohol resistant foams are preferred, general purpose synthetic foams or protein foams may function, but will not be as effective.

Unsuitable Extinguishing Media: Do not use direct water stream, as it may spread fire.

Products of Combustion: Thermal decomposition in the presence of air may yield carbon monoxide, carbon dioxide, phenolics, acids, aldehydes, ketones and other unidentified toxic and/or irritating compounds.

Fire Fighting: Stay upwind and keep people away. Isolate fire and deny unnecessary entry. Keep out of low areas where gases (fumes) can accumulate. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Contain fire water run-off if possible, as it may cause environmental damage. Review section 6 and section 12 of this SDS.

Protection of Firefighters: Wear positive pressure self-contained breathing apparatus (SCBA) and approved protective clothing (helmet, coat, trousers, boots and gloves). If contact is likely, use full chemical resistant fire fighting clothing with SCBA.

6. Accidental Release Measures

Personal Precautions: Put on appropriate personal protective equipment (see section 8).
Environmental Precautions: Prevent spilled material from contact with soil, drains and sewers.

Methods for Containment: Contain by diking with sand, earth or other suitable material.

Methods for Clean-up: Absorb spill with an inert material, use non-sparking tools to place into labeled waste container for disposal.

7. Handling and Storage

Handling: Wear appropriate personal protective equipment (see section 8). Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Do not ingest. Avoid prolonged or repeated contact with skin. May cause allergic skin reaction, persons with a history of skin sensitization should not be employed in any process in which this product is used. Wash thoroughly with soap and water after handling. Do not handle or store near flame, heat or strong oxidants. Keep away from sources of ignition and hot metal surfaces.

Storage: Store original unopened containers in a sheltered area between 60°F and 80°F (15°C and 27°C) at atmospheric pressure. Do not store in direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Epoxy Resin 25068-38-6	Not Established	Not Established	Not Established
Fibrous Glass 65997-17-3	Not Established	Not Established	Not Established
Amorphous Fumed Silica 67762-90-7	Not Established	Not Established	Not Established
Titanium Dioxide 13463-67-7	15 mg/m3 TWA (total dust)	10 mg/m3 TWA	Not Established
Amorphous Silicon Dioxide 7631-86-9	Not Established	Not Established	NIOSH: 6 mg/m3 TWA

Engineering Controls: General mechanical ventilation is sufficient for most conditions. Control airborne levels below the exposure guidelines, if established.

Local exhaust ventilation may be necessary for some operations.

General Hygiene Considerations: Wash thoroughly after handling and before eating, drinking or smoking.

Eye/face Protection: Use chemical safety glasses, splash-proof eye goggles or goggles with full faceshield.

Skin Protection: Use nitrile or other impermeable chemical resistant gloves to prevent skin irritation. If potential for skin contact is present, wear impervious, long-sleeved, body covering clothing and rubber boots.

Respiratory Protection: Respiratory protection should not be needed. If exposure may or does exceed occupational exposure limits, respiratory irritation is experienced, or during spray application, use a properly fitted MSHA/NIOSH approved respirator fitted with organic vapor cartridges. In addition, spray application may require the use of paint pre-filters. If the respirator is the sole means of protection, use a full-face supplied air respirator. If sanding or grinding on cured material, use above respirator fitted with HEPA filters or a dust mask.

Contaminated Gear: Remove contaminated clothing and shoes while washing. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

9. Physical and Chemical Properties

Appearance Opaque to White	**Odor** Mild
Odor Threshold No data found	**Physical State** Liquid
pH No data found	**Melting/Freezing Point** No data found
Boiling Point 320°C	**Boiling Range** No data found
Flash Point 212 F, 100 C	**Evaporation Rate** No data found
Flammability (solid, gas) No data found	**LEL/UEL** 0%
Vapor Pressure No data found	**Vapor Density** No data found
Specific Gravity 1.2 - 1.4	**Solubility in Water** No data found
Partition Coefficient (n-octanol/water) No data found	**Autoignition Temperature** No data found
Decomposition Temperature No data found	**Viscosity** No data found
Lbs VOC/Gallon Less Water 0.0	

10. Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions (see Section 7).

Conditions to Avoid: Avoid temperatures above 450 deg F (230 deg C), potential violent decomposition may occur.

Incompatible Materials: Strong acids, bases, or oxidizing agents. Avoid unintended contact with amines.

Products of Combustion: Thermal decomposition in the presence of air may yield carbon monoxide, carbon dioxide, phenolics, acids, aldehydes, ketones and other unidentified toxic and/or irritating compounds.

Hazardous polymerization will not occur.

11. Toxicological Information

Mixture Toxicity
Component Toxicity

Likely Routes of Exposure:

No data found

Target Organs

May cause damage to the following organs:

Eyes **Respiratory System**

Effects of Overexposure

Carcinogenicity: Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans (Group 2b) through inhalation (not ingestion), based on lifetime inhalation studies of rats. The IARC's findings were consistent with the massive accumulation of fine dust particles in the rat's lung (which overwhelm the natural lung clearance mechanisms, causing lung overloading) and consequential pulmonary overload and inflammation that causes lung cancer. In further studies, these tumors were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. Epidemiology studies on more than 20,000 workers do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide. If present in this product, the titanium dioxide is in a "wet out" form and does not pose an inhalation hazard.

CAS Number	Description	% Weight	Carcinogen Rating
13463-67-7	Titanium Dioxide	0 to 10%	Titanium Dioxide: NIOSH: potential occupational carcinogen IARC: Possible human carcinogen OSHA: listed

12. Ecological Information

Component Ecotoxicity

Amorphous Silicon Dioxide	96 Hr LC50 Brachydanio rerio: 5000 mg/L [static] 48 Hr EC50 Ceriodaphnia dubia: 7600 mg/L 72 Hr EC50 Pseudokirchneriella subcapitata: 440 mg/L

13. Disposal Considerations

Waste Disposal Methods: Dispose of in accordance with federal, state and local regulations. The preferred method for disposal of uncontaminated product is by recycling, reclaiming, incineration or other thermal destruction device using a licensed and permitted waste disposal contractor.

14. Transport Information

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	Not Regulated			
ICAO/IATA	Not Regulated			
IMDG	Not Regulated			
TDG	Not Regulated			

15. Regulatory Information

USA Federal: This SDS has been prepared in compliance with the Occupational Safety and Health Act (OSHA) Hazard Communication Standard (29 CFR 1910.1200). This product is considered to be a hazardous chemical under that standard. The specific chemical identity and/or exact percentage of any proprietary ingredient(s) may be withheld

as a trade secret, pursuant to the standard.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): To the best of our knowledge, this product contains the following chemicals which are known to the State of California to cause cancer or reproductive toxicity at levels which require warning under this statute:

13463-67-7 Titanium Dioxide 0 to 10 %

Massachusetts Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

7631-86-9 Amorphous Silicon Dioxide 0 to 10 %
13463-67-7 Titanium Dioxide 0 to 10 %

New Jersey Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

7631-86-9 Amorphous Silicon Dioxide 0 to 10 %
13463-67-7 Titanium Dioxide 0 to 10 %

Pennsylvania Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

7631-86-9 Amorphous Silicon Dioxide 0 to 10 %
13463-67-7 Titanium Dioxide 0 to 10 %

USA Resource Conservation and Recovery Act (40 CFR 261): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 302 Extremely Hazardous Substances Reportable Quantities (RQs): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 302 Extremely Hazardous Substances Threshold Planning Quantities (TPQs): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Toxic Substances Control Act (TSCA) - section 12(b): To the best of our knowledge, this product contains the following chemicals above the de minimus concentration(s) which requires notification to the Environmental Protection Agency (EPA) per 40 CFR 707, subpart D, if any person intends to export:

- None

Country	Regulation	All Components Listed
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Canada Domestic Substance List	Yes
Canada	Canada Non-Domestic Substances List (NDSL)	No
China	China Inventory of Existing Chemical Substances	Yes
EU	EU REACH List of Registered Intermediates	No
EU	EU REACH List of Pre-Registered Substances	Yes
EU	EU REACH List of Registered Substances	No
Japan	Japanese Existing and New Chemical Substances List	Yes
South Korea	South Korea Existing Chemicals Inventory	Yes
Philippines	Philippines Inventory of Chemicals and Chemical	Yes
USA	USA TSCA Inventory list section 8(b)	Yes

- None

16. Other Information

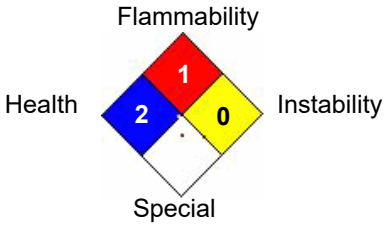
Legend

ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
ADR/RID	European Agreement for transport of dangerous goods by road (ADR) and by rail (RID)
CAS No.	Chemical Abstract Service Registry Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, AKA "Superfund"
DOT	Department of Transportation (USA)
HCS	OSHA Hazard Communication Standard (29 CFR 1910.1200)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
IMDG	International Maritime Dangerous Goods
MSHA	Mine Safety and Health Administration
N.A.	Not Applicable
N.D.	Not Determined
N.E.	Not Established
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (USA)
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986 (40 CFR)
STEL	Short Term Exposure Limit (15 minute Time Weighted Average)
TDG	Canada Transport of Dangerous Goods regulations
TLV	Threshold Limit Value
TWA	Time Weighted Average
WHMIS	Canada Workplace Hazardous Materials Information System

Hazardous Material Information System (HMIS)

HMIS & NFPA Hazard Rating Legend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



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Reviewer Revision

Date Prepared: 10/10/2019

1. Product and Company Identification

Product Name: Raven 405 Part B

VersaFlex / Raven Lining Systems
686 South Adams Street
Kansas City, KS 66105

www.versaflex.com / www.ravenlining.com

Company Phone: (913) 321-9000
Company Toll Free: (800) 321-0906

CHEMTREC 24 hour Emergency USA: (800) 424-9300
CHEMTREC 24 hour International: (703) 527-3887

Product Use: Primer / Sealer / Coating / Lining
Not recommended for: Non Professional Use

2. Hazards Identification

Signal Word: Danger

GHS Ratings:

Oral Toxicity	Acute Tox. 4	Oral>300+<=2000mg/kg
Inhalation Toxicity	Acute Tox. 4	Gases>2500+<=5000ppm, Vapors>10+<=20mg/l, Dusts&mists>1+<=5mg/l
Skin corrosive	1A	Destruction of dermal tissue: Exposure < 3 min. Observation < 1 hour, visible necrosis in at least one animal.
Eye corrosive	1	Serious eye damage: Irreversible damage 21 days after exposure, Draize score: Corneal opacity >= 3, Iritis > 1.5
Respiratory sensitizer	1	Respiratory sensitizer.
Skin sensitizer	1	Skin sensitizer.
Mutagen	2	Suspected/Possible: May include heritable mutations in human germ cells, Positive evidence from tests in mammals and somatic cell tests, In vivo somatic genotoxicity supported by in vitro mutagenicity.
Reproductive toxin	1B	Presumed, Based on experimental animals.

GHS Hazards

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.

GHS Precautions

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.
P310	Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see Section 4 of the SDS).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P405	Store locked up.
P501	Dispose of contents/container according to Section 13 of the SDS.

3. Composition / Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Alkylphenol	84852-15-3	10 - 30%
Aliphatic Amine	1477-55-0	10 - 30%
Isophoronediamine	2855-13-2	5 - 20%
Modified Aliphatic Amine		5 - 15%
Modified Polyglycol		5 - 15%
Amorphous Hydrophobic Fumed Silica	67762-90-7	5 - 15%
Diethylenetriamine	111-40-0	5 - 15%
Mixed Cycloaliphatic Amines		1 - 5%
4,4'-Methylenebiscyclohexanamine	1761-71-3	1 - 5%
2,2-bis(4-Hydroxyphenyl) Propane	80-05-7	1 - 5%
Phenol	108-95-2	1 - 5%

4. First Aid Measures

Inhalation: Remove to fresh air if effects occur. Consult a physician.

Eye Contact: Flush with large quantities of water for at least 15 minutes. Consult a physician.
Skin Contact: Wash thoroughly with soap and flowing water.
Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Flash Point: >100 C (>212 F)

Flammable Properties: Product is not considered a fire hazard, but will burn if ignited.
NFPA Flammability Class: Class III A liquids are combustible liquids that have a flash point ≥ 140 deg F (60 deg C), but < 200 deg F (93 deg C). Class III B liquids are combustible liquids that have a flash point ≥200 deg F.

Suitable Extinguishing Media: Carbon dioxide, dry chemical, water fog or fine spray. Alcohol resistant foams are preferred, general purpose synthetic foams or protein foams may function, but will not be as effective.

Unsuitable Extinguishing Media: Do not use direct water stream, as it may spread fire.
Products of Combustion: Thermal decomposition in the presence of air may yield carbon monoxide, carbon dioxide, phenolics, ammonia, nitrogen oxides and other unidentified toxic and/or irritating compounds.

Fire Fighting: Stay upwind and keep people away. Isolate fire and deny unnecessary entry. Keep out of low areas where gases (fumes) can accumulate. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Contain fire water run-off if possible, as it may cause environmental damage. Review section 6 and section 12 of this SDS.

Protection of Firefighters: Wear positive pressure self-contained breathing apparatus (SCBA) and approved protective clothing (helmet, coat, trousers, boots and gloves). If contact is likely, use full chemical resistant fire fighting clothing with SCBA.

6. Accidental Release Measures

Personal Precautions: Put on appropriate personal protective equipment (see section 8).
Environmental Precautions: Prevent spilled material from contact with soil, drains and sewers.

Methods for Containment: Contain by diking with sand, earth or other suitable material.
Methods for Clean-up: Absorb spill with an inert material, use non-sparking tools to place into labeled waste container for disposal.

7. Handling and Storage

Handling: Wear appropriate personal protective equipment (see section 8). Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Do not ingest. Avoid prolonged or repeated contact with skin. May cause allergic skin reaction, persons with a history of skin sensitization should not be employed in any process in which this product is used. Wash thoroughly with soap and water after handling. Do not handle or store near flame, heat or strong oxidants. Keep away from sources of ignition and hot metal surfaces.

Storage: Store original unopened containers in a sheltered area between 60°F and 80°F (15°C and 27°C) at atmospheric pressure. Do not store in direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Alkylphenol 84852-15-3	Not Established	Not Established	Not Established
Aliphatic Amine 1477-55-0	Not Established	0.1 mg/m3 Ceiling	NIOSH: 0.1 mg/m3 Ceiling
Isophoronediamine 2855-13-2	Not Established	Not Established	Not Established
Modified Aliphatic Amine	Not Established	Not Established	Not Established
Modified Polyglycol	Not Established	Not Established	Not Established

Amorphous Hydrophobic Fumed Silica 67762-90-7	Not Established	Not Established	Not Established
Diethylenetriamine 111-40-0	Not Established	1 ppm TWA	NIOSH: 1 ppm TWA; 4 mg/m3 TWA
Mixed Cycloaliphatic Amines	Not Established	Not Established	Not Established
4,4'-Methylenebiscyclohexanamine 1761-71-3	Not Established	Not Established	Not Established
2,2-bis(4-Hydroxyphenyl) Propane 80-05-7	Not Established	Not Established	Not Established
Phenol 108-95-2	5 ppm TWA; 19 mg/m3 TWA	5 ppm TWA	NIOSH: 5 ppm TWA; 19 mg/m3 TWA 15.6 ppm Ceiling (15 min); 60 mg/m3 Ceiling (15 min)

Engineering Controls: General mechanical ventilation is sufficient for most conditions. Control airborne levels below the exposure guidelines, if established.

Local exhaust ventilation may be necessary for some operations.

General Hygiene Considerations: Wash thoroughly after handling and before eating, drinking or smoking.

Eye/face Protection: Use chemical safety glasses, splash-proof eye goggles or goggles with full faceshield.

Skin Protection: Use nitrile or other impermeable chemical resistant gloves to prevent skin irritation. If potential for skin contact is present, wear impervious, long-sleeved, body covering clothing and rubber boots.

Respiratory Protection: Respiratory protection should not be needed. If exposure may or does exceed occupational exposure limits, respiratory irritation is experienced, or during spray application, use a properly fitted MSHA/NIOSH approved respirator fitted with organic vapor cartridges. In addition, spray application may require the use of paint pre-filters. If the respirator is the sole means of protection, use a full-face supplied air respirator. If sanding or grinding on cured material, use above respirator fitted with HEPA filters or a dust mask.

Contaminated Gear: Remove contaminated clothing and shoes while washing. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

9. Physical and Chemical Properties

Appearance	Standard color is blue. Limited colors are available on special order.	**Odor**	Ammonia-like
Odor Threshold	No data found	**Physical State**	Liquid
pH	No data found	**Melting/Freezing Point**	No data found
Boiling Point	182°C	**Boiling Range**	No data found
Flash Point	212°F, 100°C	**Evaporation Rate**	No data found
Flammability (solid, gas)	No data found	**LEL/UEL**	No data found
Vapor Pressure	No data found	**Vapor Density**	No data found
Specific Gravity	0.9 - 1.1	**Solubility in Water**	No data found
Partition Coefficient (n-octanol/water)	No data found	**Autoignition Temperature**	No data found
Decomposition Temperature	No data found	**Viscosity**	No data found
Lbs VOC/Gallon Less Water	0.0		

10. Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions (see Section 7).
Conditions to Avoid: Elevated temperatures may cause product to decompose.

Incompatible Materials: Strong acids, bases, or oxidizing agents. Avoid unintended contact with isocyanates and/or epoxies.

Products of Combustion: Thermal decomposition in the presence of air may yield carbon monoxide, carbon dioxide, phenolics, ammonia, nitrogen oxides and other unidentified toxic and/or irritating compounds.

Hazardous polymerization will not occur.

11. Toxicological Information

Mixture Toxicity

Oral Toxicity LD50: 1,233mg/kg
Dermal Toxicity LD50: 2,387mg/kg
Inhalation Toxicity LC50: 5mg/L

Component Toxicity

84852-15-3	Alkylphenol Oral LD50: 1,300 mg/kg (Rat) Dermal LD50: 2,031 mg/kg (Rabbit)
1477-55-0	Aliphatic Amine Oral LD50: 980 mg/kg (Rat) Dermal LD50: 2,000 mg/kg (Rabbit) Inhalation LC50: 1 mg/L (Rat)
2855-13-2	Isophoronediamine Oral LD50: 1,030 mg/kg (Rat) Dermal LD50: 2,050 mg/kg (Rat) Inhalation LC50: 5 mg/L (Rat)
111-40-0	Diethylenetriamine Oral LD50: 1,080 mg/kg (Rat) Dermal LD50: 1,090 mg/kg (Rabbit) Inhalation LC50: 70 mg/L (Rat
1761-71-3	4,4'-Methylenebiscyclohexanamine Oral LD50: 1,090 mg/kg (Rat) Dermal LD50: 2,110 mg/kg (Rabbit) Inhalation LC50: 1 mg/L (Rat)
80-05-7	2,2-bis(4-Hydroxyphenyl) Propane Oral LD50: 3,300 mg/kg (Rat) Inhalation LC50: 17 mg/L (Rat)
108-95-2	Phenol Oral LD50: 340 mg/kg (Rat) Dermal LD50: 660 mg/kg (Rabbit) Inhalation LC50: 1 mg/L (Rat)

Likely Routes of Exposure:

No data found

Target Organs

May cause damage to the following organs:

Eyes Kidneys Liver Skin Respiratory System

Effects of Overexposure

CAS Number	Description	% Weight	Carcinogen Rating
None			No data found

12. Ecological Information

Component Ecotoxicity

Alkylphenol	96 Hr LC50 Pimephales promelas: 0.135 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 0.1351 mg/L [flow-through] 48 Hr EC50 Daphnia magna: 0.14 mg/L 96 Hr EC50 Pseudokirchneriella subcapitata: 0.36 - 0.48 mg/L [static]; 72 Hr EC50 Pseudokirchneriella subcapitata: 0.16 - 0.72 mg/L [static]; 72 Hr EC50 Desmodesmus subspicatus: 1.3 mg/L
Isophoronediamine	48 Hr EC50 Daphnia magna: 14.6 - 21.5 mg/L [semi-static] 72 Hr EC50 Desmodesmus subspicatus: 37 mg/L

Diethylenetriamine	96 Hr LC50 Poecilia reticulata: 248 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 1014 mg/L [semi-static] 48 Hr EC50 Daphnia magna: 16 mg/L 72 Hr EC50 Pseudokirchneriella subcapitata: 1164 mg/L; 96 Hr EC50 Pseudokirchneriella subcapitata: 345.6 mg/L; 96 Hr EC50 Desmodesmus subspicatus: 592 mg/L
2,2-bis(4-Hydroxyphenyl) Propane	96 Hr LC50 Pimephales promelas: 3.6 - 5.4 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 4.0 - 5.5 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 4 mg/L; 96 Hr LC50 Brachydanio rerio: 9.9 mg/L [static] 48 Hr EC50 Daphnia magna: 10.2 mg/L; 48 Hr EC50 Daphnia magna: 3.9 mg/L; 48 Hr EC50 Daphnia magna: 9.2 - 11.4 mg/L [Static] 96 Hr EC50 Pseudokirchneriella subcapitata: 2.5 mg/L
Phenol	96 Hr LC50 Pimephales promelas: 11.9 - 50.5 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 20.5 - 25.6 mg/L [static]; 96 Hr LC50 Pimephales promelas: 32 mg/L; 96 Hr LC50 Oncorhynchus mykiss: 5.449 - 6.789 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 7.5 - 14 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 4.23 - 7.49 mg/L [semi-static]; 96 Hr LC50 Oncorhynchus mykiss: 5.0 - 12.0 mg/L; 96 Hr LC50 Lepomis macrochirus: 13.5 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 11.9 - 25.3 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 11.5 mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 34.09 - 47.64 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 31 mg/L [semi-static]; 96 Hr LC50 Brachydanio rerio: 27.8 mg/L; 96 Hr LC50 Cyprinus carpio: 0.00175 mg/L [semi-static]; 96 Hr LC50 Oryzias latipes: 33.9 - 43.3 mg/L [flow-through]; 96 Hr LC50 Oryzias latipes: 23.4 - 36.6 mg/L [static] 48 Hr EC50 Daphnia magna: 4.24 - 10.7 mg/L [Static]; 48 Hr EC50 Daphnia magna: 10.2 - 15.5 mg/L 96 Hr EC50 Pseudokirchneriella subcapitata: 46.42 mg/L; 96 Hr EC50 Pseudokirchneriella subcapitata: 0.0188 - 0.1044 mg/L [static]; 72 Hr EC50 Desmodesmus subspicatus: 187 - 279 mg/L [static]

13. Disposal Considerations

Waste Disposal Methods: Dispose of in accordance with federal, state and local regulations. The preferred method for disposal of uncontaminated product is by recycling, reclaiming, incineration or other thermal destruction device using a licensed and permitted waste disposal contractor.

14. Transport Information

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	Amines, liquid, corrosive, n.o.s. (aliphatic amines)	UN2735	III	8
ICAO/IATA	Amines, liquid, corrosive, n.o.s. (aliphatic amines)	UN2735	III	8
IMDG	Amines, liquid, corrosive, n.o.s. (aliphatic amines)	UN2735	III	8
TDG	Amines, liquid, corrosive, n.o.s. (aliphatic amines)	UN2735	III	8

15. Regulatory Information

USA Federal: This SDS has been prepared in compliance with the Occupational Safety and Health Act (OSHA) Hazard Communication Standard (29 CFR 1910.1200). This product is considered to be a hazardous chemical under that standard. The specific chemical identity and/or exact percentage of any proprietary ingredient(s) may be withheld as a trade secret, pursuant to the standard.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): To the best of our knowledge, this product contains the following chemicals which are known to the State of California to cause cancer, developmental or reproductive toxicity at levels which require warning under this statute:

- None

USA Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) - section 103 Hazardous Substances Reportable Quantities (RQs): To the best of our knowledge, this product contains the following chemicals which are listed in 40 CFR 302.4:

108-95-2 Phenol 1 to 5 %

Massachusetts Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

108-95-2 Phenol 1 to 5 %
80-05-7 2,2-bis(4-Hydroxyphenyl) Propane 1 to 5 %
111-40-0 Diethylenetriamine 5 to 15 %
1477-55-0 Aliphatic Amine 10 to 30 %

New Jersey Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

108-95-2 Phenol 1 to 5 %
80-05-7 2,2-bis(4-Hydroxyphenyl) Propane 1 to 5 %
111-40-0 Diethylenetriamine 5 to 15 %
2855-13-2 Isophoronediamine 5 to 20 %
1477-55-0 Aliphatic Amine 10 to 30 %

Pennsylvania Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

108-95-2 Phenol 1 to 5 %
80-05-7 2,2-bis(4-Hydroxyphenyl) Propane 1 to 5 %
111-40-0 Diethylenetriamine 5 to 15 %
1477-55-0 Aliphatic Amine 10 to 30 %

USA Resource Conservation and Recovery Act (40 CFR 261): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

108-95-2 Phenol 1 to 5 %

USA Superfund Amendments and Reauthorization Act (SARA) of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 313 Toxic Release Inventory (TRI) Form R: To the best of our knowledge, this product contains the following chemicals which are listed in 40 CFR 372.65:

- None

USA Superfund Amendments and Reauthorization Act (SARA) of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 302 Extremely Hazardous Substances Threshold Planning Quantities (TPQs): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Toxic Substances Control Act (TSCA) - section 12(b): To the best of our knowledge, this product contains the following chemicals above the de minimus concentration(s) which requires notification to the Environmental Protection Agency (EPA) per 40 CFR 707, subpart D, if any person intends to export:

84852-15-3 Alkylphenol 10 to 30 %

Country	Regulation	All Components Listed
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Canada Domestic Substance List	Yes
Canada	Canada Non-Domestic Substances List (NDSL)	No
China	China Inventory of Existing Chemical Substances	Yes
EU	EU REACH List of Registered Intermediates	No
EU	EU REACH List of Pre-Registered Substances	Yes
EU	EU REACH List of Registered Substances	No
Japan	Japanese Existing and New Chemical Substances List	No
South Korea	South Korea Existing Chemicals Inventory	Yes
Philippines	Philippines Inventory of Chemicals and Chemical	No

USA	USA TSCA Inventory list section 8(b)	Yes

- None

16. Other Information

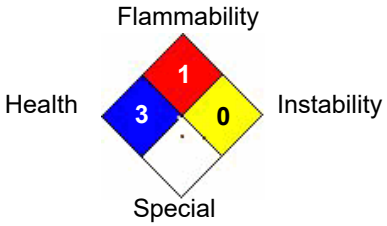
Legend

ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
ADR/RID	European Agreement for transport of dangerous goods by road (ADR) and by rail (RID)
AICS	Australia Inventory of Chemical Substances
CAS No.	Chemical Abstract Service Registry Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, AKA "Superfund"
DOT	Department of Transportation (USA)
DLS	Canada Domestic Substances List
ENCS	Japan Existing and New Chemical Substances
HCS	OSHA Hazard Communication Standard (29 CFR 1910.1200)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IECS	China Inventory of Existing Chemical Substances
IMO	International Maritime Organization
IMDG	International Maritime Dangerous Goods
KECI	Korea Existing Chemicals Inventory - Annex 1
MOT	Thailand Ministry of Transport
MSHA	Mine Safety and Health Administration
N.A.	Not Applicable
NDSL	Canada Non-Domestic Substances List
N.D.	Not Determined
N.E.	Not Established
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (USA)
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
SARA	Superfund Amendments and Reauthorization Act of 1986 (40 CFR)
STEL	Short Term Exposure Limit (15 minute Time Weighted Average)
TDG	Canada Transport of Dangerous Goods regulations
TLV	Threshold Limit Value
TWA	Time Weighted Average
WHMIS	Canada Workplace Hazardous Materials Information System

Hazardous Material Information System (HMIS)

HMIS & NFPA Hazard Rating Legend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



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Reviewer Revision

Date Prepared: 11/11/2020