



PROTECT WITH
CONFIDENCE

1. Product and Company Identification

Product Name: Raven 405 Part A

Raven Lining Systems
13105 East 61st Street, Suite A
Broken Arrow, OK 74012

www.ravenlining.com

Company Phone: (918) 615-0020
Company Toll Free: (800) 324-2810

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/m ³ TWA (total dust) | 10 mg/m ³ TWA | Not Established |
| Amorphous Silicon Dioxide 7631-86-9 | Not Established | Not Established | NIOSH: 6 mg/m ³ 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

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

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.

| <u>CAS Number</u> | <u>Description</u> | <u>% Weight</u> | <u>Carcinogen Rating</u> |
|-------------------|--------------------|-----------------|---|
| 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

| <u>Agency</u> | <u>Proper Shipping Name</u> | <u>UN Number</u> | <u>Packing Group</u> | <u>Hazard Class</u> |
|---------------|-----------------------------|------------------|----------------------|---------------------|
| 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

| <u>Country</u> | <u>Regulation</u> | <u>All Components Listed</u> |
|-----------------------|--|-------------------------------------|
| 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 |

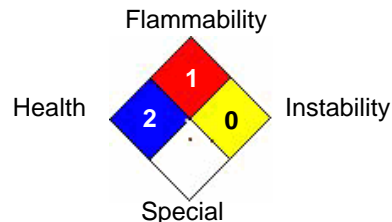
Hazardous Material Information System (HMIS)

| | |
|---------------------|--------------------------------|
| HEALTH | <input type="text" value="2"/> |
| FLAMMABILITY | <input type="text" value="1"/> |
| PHYSICAL HAZARD | <input type="text" value="0"/> |
| PERSONAL PROTECTION | <input type="text" value=""/> |

HMIS & NFPA Hazard Rating Legend

* = Chronic Health Hazard
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



Disclaimer

RAVEN LINING SYSTEMS MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO ANY INFORMATION PRESENTED HEREIN, ALL OF WHICH IS PROVIDED "AS IS". TO THE MAXIMUM EXTENT PERMITTED BY LAW, RAVEN EXPRESSLY EXCLUDES ALL WARRANTIES, OBLIGATIONS, REPRESENTATIONS, LIABILITIES, TERMS AND CONDITIONS (WHETHER THEY ARE EXPRESS OR IMPLIED, OR ARISE IN CONTRACT, STATUTE, OR OTHERWISE, AND IRRESPECTIVE OF THE NEGLIGENCE OF RAVEN, ITS EMPLOYEES OR AGENTS) IN CONNECTION WITH THE INFORMATION PRESENTED HEREIN. RAVEN MAKES NO REPRESENTATIONS OR WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PURPOSE, NONINFRINGEMENT OR CONFORMITY WITH DESCRIPTION OR SAMPLE.

Reviewer Revision

Date Prepared: 10/20/2015



PROTECT WITH
CONFIDENCE

1. Product and Company Identification

Product Name: Raven 405T (Trowel) Part B

Raven Lining Systems
13105 East 61st Street, Suite A
Broken Arrow, OK 74012

www.ravenlining.com

Company Phone: (918) 615-0020
Company Toll Free: (800) 324-2810

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 |
| Skin corrosive | 1B | Destruction of dermal tissue: Exposure < 1 hour Observation < 14 days, 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 |
| Skin sensitizer | 1 | Skin sensitizer. |

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. |

GHS Precautions

| | |
|----------------|--|
| 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. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P310 | Immediately call a POISON CENTER or doctor/physician. |
| 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. |
| P305+P351+P338 | IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. |
| P333+P313 | If skin irritation or a rash occurs: Get medical advice/attention. |
| 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 | 10 - 30% |
| 1,2-Diaminocyclohexane | 694-83-7 | 5 - 15% |
| Modified Polyglycol | | 5 - 15% |
| Rheology Additive | | 1 - 10% |
| Mixed Cycloaliphatic Amines | | 1 - 10% |
| 4,4'-Methylenebiscyclohexanamine | 1761-71-3 | 1 - 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: Class III A liquids are combustible liquids that have a flash point \geq 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 \geq 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 |
| 1,2-Diaminocyclohexane 694-83-7 | Not Established | Not Established | Not Established |
| Modified Polyglycol | Not Established | Not Established | Not Established |
| Rheology Additive | 15 mppcf TWA | 10 mg/m3 TWA | Not Established |
| Mixed Cycloaliphatic Amines | Not Established | Not Established | Not Established |
| 4,4'-Methylenebiscyclohexan amine 1761-71-3 | Not Established | Not Established | Not Established |

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

| | |
|--|---|
| <p>Appearance Standard color is blue</p> <p>Odor Threshold No data found</p> <p>pH No data found</p> <p>Boiling Point 247°C</p> <p>Flash Point 212 F, 100 C</p> <p>Flammability (solid, gas) No data found</p> <p>Vapor Pressure No data found</p> <p>Specific Gravity 0.9 - 1.1</p> <p>Partition Coefficient (n-octanol/water) No data found</p> <p>Viscosity No data found</p> | <p>Odor Ammonia-like</p> <p>Physical State Liquid</p> <p>Melting/Freezing Point No data found</p> <p>Boiling Range No data found</p> <p>Evaporation Rate No data found</p> <p>LEL/UEL No data found</p> <p>Vapor Density No data found</p> <p>Solubility in Water No data found</p> <p>Decomposition Temperature No data found</p> <p>Lbs VOC/Gallon Less Water 0.0</p> |
|--|---|

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: 1,462mg/kg

Dermal Toxicity LD50: 3,447mg/kg

Inhalation Toxicity LC50: 7mg/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: 700 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

| <u>CAS Number</u> | <u>Description</u> | <u>% Weight</u> | <u>Carcinogen Rating</u> |
|-------------------|--------------------|-----------------|--------------------------|
| 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 |

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

| <u>Agency</u> | <u>Proper Shipping Name</u> | <u>UN Number</u> | <u>Packing Group</u> | <u>Hazard Class</u> |
|---------------|--|------------------|----------------------|---------------------|
| 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 or reproductive toxicity at levels which require warning under this statute:

- None

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

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:

2855-13-2 Isophoronediamine 10 to 30 %

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:

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:

- 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:

84852-15-3 Alkylphenol 10 to 30 %

| <u>Country</u> | <u>Regulation</u> | <u>All Components Listed</u> |
|----------------|--|------------------------------|
| 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 | 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) |

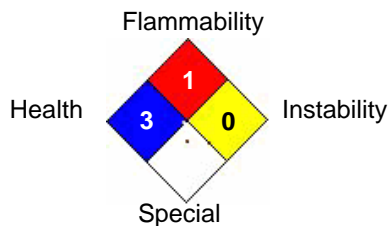
| | |
|-------|---|
| PEL | Permissible Exposure Limit |
| SARA | Superfund Amendments and Reauthorization Act of 1986 (40 CFR) |
| STEL | Short Term Exposure Limit (15 minute Time Weighted Average) |
| TDG | Canada Transport of Dangerous Goods regulations |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |
| WHMIS | Canada Workplace Hazardous Materials Information System |

Hazardous Material Information System (HMIS)

| | |
|---------------------|--------------------------------|
| HEALTH | <input type="text" value="3"/> |
| FLAMMABILITY | <input type="text" value="1"/> |
| PHYSICAL HAZARD | <input type="text" value="0"/> |
| PERSONAL PROTECTION | <input type="text" value=""/> |

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: 11/25/2015