SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

CHEMICAL EMERGENCY: INFOTRAC 1.800.535.5053

Product Number: #400 Bonding Epoxy, Part A
Product Name: #400 Bonding Epoxy, Part A
Product Class: EPOXY

CPR Products, Inc.
1315 W. Lark Industrial Dr.
St. Louis, MO 63026

General Information: 636.717.0666

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Potential Health Effects: See Section 11 for more information

GHS Classification:

H319 Eye irritation (Category 2)
H317 Skin sensitization (Category 1)
H411 Hazardous to the aquatic environment Chronic (Category 2)
H401 Hazardous to the aquatic environment: Acute (Category 2)
H315 Skin irritation (Category 2)

GHS Labeling

Symbol: 

Signal Words: Warning

Hazard Statements:

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:

P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves, clothing, and eye/face protection.

Response:

P301+P312 IF SWALLOWED: Call POISON CETNER and/or doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313: If skin irritation or rash occurs: Get medical attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical attention.
P391: Collect spillage

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501 Dispose of contents and containers in accordance with local, regional and international regulations.

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – Annex III

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC, or NTP.

Potential Environmental Effects: See Section 12 for more information.

SECTION 3: COMPOSTION/INFORMATION ON INGREDIENTS

No.	Component CAS REG. NO.	Amount %	OSHA		ACGIH	
			PEL	STEL	TWA	STEL
1	Bisphenol A Epoxy Resin 25068-38-6	75-90	Not Avail	Not Avail	Not Avail	Not Avail
2	Alkyl Glycidyl Ether 120547-52-6	10-15	Not Avail	Not Avail	Not Avail	Not Avail
3	Epoxy Phenol Novolac Resin 28064-14-4	5-10	Not Avail	Not Avail	Not Avail	Not Avail

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: FIRST AID MEASURES

DESCRIPTION OF NESSESARY FIRST-AID MEASURES:

Inhalation:

If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

Skin:

Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Seek medical attention if symptoms occur.

Eyes:

Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Seek medical attention if irritation develops or persists.

Ingesion:

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

MOST IMPORTANT SYMPTOMS AND EFFECTS, ACUTE AND DELAYED:

Symptoms: Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY:

Treatment: Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:

Suitable: Use water spray, foam, dry chemical or carbon dioxide.

Unsuitable: None known.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Unusual Fire & Explosion Hazards: Product is not considered a fire hazard, but will burn if ignited. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Hazardous Combustion Products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous decomposition products for additional information.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS:

Wear self-contained breathing apparatus (SCBA) equipped with a full face piece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations. See section 9 for additional information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

ENVIRONMENTAL PRECAUTIONS:

Do not flush product into public sewer, water systems or surface waters.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

Stop leak if without risk. Move containers from spill area. Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Use under well-ventilated conditions. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume, vapor or dust generated by this product. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Discard shoes contaminated with this product.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep away from heat, sparks and open flames. Store dry at 15-40°C, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

See Section 3 for more information.

APPOPRIATE ENGINEERING CONTROLS:

Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain air concentrations below occupational exposure standards. When necessary use mechanical handling to reduce human contact with materials.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eye/Face Protection: Safety glasses or goggles required.

Skin Protection: Wear chemical resistant (impervious) gloves; PVC, neoprene, nitrile rubber, EVAL, butyl rubber. Wear chemical resistant protective clothing. Use good laboratory/ workplace procedures including personal protective clothing: lab coat and protective gloves.

Respiratory Protection: Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS.

General Protection: Eyewash fountains and safety showers are recommended in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Viscous liquid

Upper/Lower Explosive Limits: Not available

Color: Clear, Yellow

Vapor Pressure: <1 mm Hg at 20°C

Odor: Slight

Vapor Density: Heavier than air

Specific Gravity: 1.09

Melting Point/Freezing Point: Not available

Initial Boiling Point: Not available

Auto-Ignition Temperature: Not available

Flash Point: 375°F TCC

Decomposition Temperature: Not available

Flammability: Not Flammable

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY:

Exothermic reactions including polymerization may occur in contact with amines, strong acids, strong bases, alcohols, strong oxidizing agents and excessive heat.

CHEMICAL STABILITY:

This product is stable.

POSSIBILITY OF HAZARDOUS REACTIONS:

Exothermic reactions including polymerization may occur in contact with amines, strong acids, strong bases, alcohols, strong oxidizing agents and excessive heat.

CONDITIONS TO AVOID:

Excessive heat and ignition sources.

INCOMPATIBLE MATIERALS:

Avoid strong acids, bases, and oxidizing agents. Avoid contact with amines.

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition may produce smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE:

Eyes, skin, inhalation and ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMCIAL AND TOXICOLOGICAL CHARACTERISTICS

Eyes: Causes serious eye irritation.

Skin: Causes skin irritation. May cause allergic skin reaction. Repeated or prolonged contact may cause skin irritation and dermatitis.

Inhalation: High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory track and mucous membranes.

Ingestion: Ingestion may cause irritation.

DELAYED AND IMMEDIATE EFFECTS AND ALSO CHONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE:

Further information is not available.

ACUTE TOXICITY

CHEMCIAL NAME	LC50 INHALATION	LD50 ORAL (RAT)	LD50 DERMAL (RABBIT)
Bisphenol A Epoxy Resin	Not available	>2000 mg/kg	>2000 mg/kg
Alkyl Glycidyl Ether	Not available	17000 mg/kg	>4.5 mL/kg
Epoxy Phenol Novolac Resin	Not available	>2000 mg/kg	>2000 mg/kg

CORROSION / IRRITATION / SENSITIZATION INFORMATION:

Skin Corrosion/Irritation: Skin Irritation – Category 2

Serious Eye Damage/Irritation: Eye Irritation – Category 2

Respiratory/Skin Sensitization: Skin Sensitization – Category 1

CARCINOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICOLOGY INFORMATION:

See Section 15 for more information.

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY:

CHEMCIAL NAME	TEST	SPECIES	RESULT
Bisphenol A Epoxy Resin	LC50 (96 hrs)	Fish	2.4 mg/L
	EC50 (24 hrs)	Daphnia	3.6 mg/L
	IC50 (96 hrs)	Bacteria	>100 mg/L
Alkyl Glycidyl Ether	Not available	Not available	Not available
Epoxy Phenol Novolac Resin	LC50 (96 hrs)	Fish	>1-10 mg/L
	EC50 (48 hrs)	Daphnia	>1-10 mg/L

PERSISTENCE AND DEGRADBILITY:

CHEMCIAL NAME	TEST	PERIOD	RESULT
Bisphenol A Epoxy Resin	OECD (Biodegradation Test)	28 Day	5%
Alkyl Glycidyl Ether	Not readily biodegradable		
Epoxy Phenol Novolac	Not readily biodegradable		

Resin			

BIOACCUMULATIVE POTENTIAL:

CHEMICAL NAME	Log Pow	BCF	POTENTIAL
Bisphenol A Epoxy Resin	**3.242**	**31**	**Low**
Alkyl Glycidyl Ethe	**3.77 (Log KOW)**	**Not available**	**Not available**
Epoxy Phenol Novolac Resin	**Not available**	**Not available**	**Not available**

MOBILITY IN SOIL:

CHEMICAL NAME	TEST	RESULT
Bisphenol A Epoxy Resin	**Soil/water partition coefficient (KOC)**	**445**
Alkyl Glycidyl Ether	**Not available**	
Epoxy Phenol Novolac Resin	**Not available**	

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

Dispose of unused contents (incineration) in accordance with national and local regulations.

Dispose of container in accordance with national and local regulations.

Ensure the use of properly authorized waste management companies, where appropriate.

See section 8 for recommendations on the use of personal protective equipment.

SECTION 14: TRANSPORTATION INFORMATION

UN NUMBER: UN3082

UN PROPER SHIPPING NAME: Environmentally Hazardous Substance, Liquid, N.O.S., (Epoxy Resin)

U.S. DOT HAZARD CLASS: Not Regulated

CANADA TDG HARZARD CLASS: Not Regulated

EUROPE ADR/RID HAZARD CLASS: 9

IMDG CODE (OCEAN) HAZARD CLASS: 9

ICAO/IATA (AIR) HAZARD CLASS: 9

PACKING GROUP: III

ENVIRONMENTAL HAZARDS:

MARINE POLLUTANT: Yes

HAZARDOUS SUBSTANCE (USA): No

SPECIAL PRECAUTIONS FOR USER: Information is not available.

OTHER INFORMATION: For surface shipments within the United States: Not regulated.

ORM-D Consumer Commodity in 1 gal or less containers

SECTION 15: REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT IN QUESTION:

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV – List of substances subject to authorization

Substances of very high concern: None of the components are listed.

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

None of the components are listed.

CHEMICAL INVENTORIES:

Canadian Domestic Substances List (DSL): Y

Canadian Non-Domestic Substances List (NDSL): N

European Inventory of Existing Chemical Substances (EINECS): Y

European List of Notified Chemical Substances (ENCS): N

U.S. Toxic Substances Control Act (TSCA): Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed.

United States (USA) · SARA · Section 355 (extremely hazardous substances): None of the ingredients are listed.

United States (USA) · SARA · Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California): · Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Carcinogenic Categories · EPA (Environmental Protection Agency) None of the ingredients are listed.

IARC (International Agency for Research on Cancer) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Canadian Domestic Substances List (DSL) All ingredients are listed.

Canadian Ingredient Disclosure list (limit 0.1%) None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%) None of the ingredients are listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: OTHER SUPPLEMENTAL INFORMATION

LEGEND:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR/RID: European dangerous goods transport road and rail regulations

CAS No: Chemical Abstract Service Registry Number

DOT: Department of Transportation (U.S.)

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods code

OEL: Occupational Exposure Limits

OSHA: Occupational Safety and Health Administration (U.S.)

PEL: Permissible Exposure Limit

RQ: Reportable Quantity

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit (15 minute Time Weighted Average)

TDG: Canadian Transportation of Dangerous Goods Act and Regulations

UN: United Nations U.S.: United States

USERS RESPONSIBILITY/DISCLAIMER OF LIABILITY: **All recommendations, statements and technical data contained herein are based on tests we believe to be reliable and correct. CPR Products, Inc. warrants its products to be free of manufacturing defects and that, at the time and place we make shipment, our material will meet the current published physical properties when applied with CPR's directions and tested in accordance with ASTM standards. CPR Products, Inc.'s liability is limited to replacement of material found to be defective, as CPR Products has no control over the use to which others may apply its products. It is recommended that the product be tested to determine if suitable for a specific application and/or our information is valid in a particular circumstance. Responsibility remains with the contractor and owner for the design, application and proper installation of each product. Nothing contained herein should be construed to be a recommendation to use, or as a license to operate under or to infringe any existing patents.**

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

CHEMICAL EMERGENCY: INFOTRAC 1.800.535.5053

Product Number: #400 Bonding Epoxy, Part B
Product Name: #400 Bonding Epoxy, Part B
Product Class: EPOXY HARDENER

CPR Products, Inc.
1315 W. Lark Industrial Dr.
St. Louis, MO 63026

General Information: 636.717.0666

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Potential Health Effects: See Section 11 for more information

GHS Classification:

H312 Harmful in contact with skin (Category 2)
H317 Skin sensitization (Category 1)
H411 Hazardous to the aquatic environment Chronic (Category 2)
H302 Acute toxicity (Category 4)
H314 Causes severe skin burns and eye damage (Category 2)

GHS Labeling

Symbol: 

Signal Words: Danger

Hazard Statements:

H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.
H314 Causes severe skin burns and eye damage.
H411 Toxic to aquatic life with long lasting effects.
H302 Acute toxicity.

Precautionary Statements:

Prevention:

P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves, clothing, and eye/face protection.
P102 Keep out of reach of children.
P260 Do not breathe fumes/mist/vapors.
P272 Contaminated work clothing should not be allowed out of the workplace.

Response:

P301 + P330 + P331, P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER and/or doctor.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353, P310 IF ON SKIN OR HAIR: Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER and/or doctor
P362+P364: Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338, P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER and/or doctor.
P304 + P340, P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER and/or doctor.
P337+P313 If eye irritation persists: Get medical attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P391: Collect spillage

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed
P405 Store locked up.

Disposal:

P501 Dispose of contents and containers in accordance with local, regional and international regulations.

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – Annex III

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC, or NTP.

Potential Environmental Effects: See Section 12 for more information

SECTION 3: COMPOSTION/INFORMATION ON INGREDIENTS

No.	Component CAS REG. NO.	Amount %	OSHA		ACGIH	
			PEL	STEL	TWA	STEL
1	Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines 68410-23-1	85-95	Not Avail	Not Avail	Not Avail	Not Avail
2	Triethylenetetramine 112-24-3	5-15	Not Avail	Not Avail	Not Avail	Not Avail

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: FIRST AID MEASURES

DESCRIPTION OF NESSESARY FIRST-AID MEASURES:

Inhalation

IF INHALED P304 + P340, P310

Immediate Symptoms cough, irritation of the respiratory track, burning sensation
Delayed Symptoms asthma, difficulty breathing
Response Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER and/or doctor.
If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

Skin:

IF ON SKIN OR HAIR P303 + P361+ P353, P310, P333 + P313, P363

Immediate or Delayed Symptoms redness, irritation, rash (allergic contact dermatitis), pain, chemical burns, blistering
Response Take off immediately all contaminated clothing. Wash with plenty of water or shower. Immediately call a POISON CENTER and/or doctor. If skin irritation or rash occurs Get medical advice/attention. Wash contaminated clothing before reuse.
Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Seek medical attention if symptoms occur.

Eyes:

IF IN EYES P305 + P351 + P338, P310

Immediate Symptoms redness, severe irritation, pain, burns
Response Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER and/or doctor.
Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Seek medical attention if irritation develops or persists.

Ingestion:

IF SWALLOWED P301 + P330 + P331, P310

Immediate Symptoms Irritation Response Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER and/or doctor.
Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

MOST IMPORTANT SYMPTOMS AND EFFECTS, ACUTE AND DELAYED:

Advice to Physicians In case of exposure to nitrogen oxides (NOx) combustion products or triethylenetetramine vapors during a fire, the symptoms may be delayed. For significant exposures, the exposed person should be kept under medical surveillance for 48 hours

Symptoms: Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY:

Treatment: Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:

Suitable: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.

Unsuitable: None known.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Unusual Fire & Explosion Hazards: Not flammable or combustible, but burns if involved in a fire. Closed container may rupture (due to build up in pressure) when exposed to extreme heat. Use water spray to cool containers.

Hazardous Combustion Products: Produces irritating and toxic fumes in fires or in contact with hot surfaces. Inhalation of toxic smoke during fire may have delayed effects. Exposed person may need to be put under surveillance for 48 hours. See Section 10 Hazardous decomposition products for additional information.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS:

Wear self-contained breathing apparatus (SCBA) equipped with a full face piece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.
Toxic for aquatic environment: Prevent fire-fighting wash from entering waterway or sewer system.
See section 9 for additional information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

ENVIRONMENTAL PRECAUTIONS:

Do not flush product into public sewer, water systems or surface waters.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

Stop leak if without risk. Move containers from spill area. Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Use under well-ventilated conditions. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the

facilities. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume, vapor or dust generated by this product. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Discard shoes contaminated with this product.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep away from heat, sparks and open flames. Store dry at 15-40°C, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning. Store locked up.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

See Section 3 for more information.

APPOPRIATE ENGINEERING CONTROLS:

Keep airborne concentrations below the occupational exposure limits (OEL). Due to low vapor pressure of the product, general ventilation should be adequate for normal use. If the product is heated at high temperatures or worker is allergic, use local ventilation and consider using a full mask with organic vapor cartridges

Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain air concentrations below occupational exposure standards. When necessary use mechanical handling to reduce human contact with materials.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eye/Face Protection: Safety glasses or goggles required. Use safety glasses with lateral protection side shields.

Skin Protection: Wear chemical resistant (impervious) gloves; PVC, neoprene, nitrile rubber, EVAL, butyl rubber. Wear chemical resistant protective clothing. Use good laboratory/ workplace procedures including personal protective clothing: lab coat and protective gloves.

Respiratory Protection: Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS. For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges. Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus. If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply. Consult your local safety supply store to ensure your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the

respirator is fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Protection: Eyewash fountains and safety showers are recommended in the work area. Wash hands with water and soap after use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Viscous liquid

Upper/Lower Explosive Limits: Not available

Color: Amber

Vapor Pressure: <0.01 mmHg @ 20C

Odor: Ammonia Like

Vapor Density: Heavier than air

Specific Gravity: 0.96

Melting Point/Freezing Point: Not available

Initial Boiling Point: Not available

Auto-Ignition Temperature: Not available

Flash Point: 255°F TCC

Decomposition Temperature: Not available

Flammability: Not Flammable

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY:

Exothermic reactions including polymerization may occur in contact with ketones, halogenated hydrocarbons, cyanides, nitriles, and epoxides. May attack metals such as aluminum, zinc, copper, and their alloys.

CHEMICAL STABILITY:

Chemically stable at normal temperatures and pressures

POSSIBILITY OF HAZARDOUS REACTIONS:

Exothermic reactions including polymerization may occur in contact contact with ketones, halogenated hydrocarbons, cyanides, nitriles, and epoxides. May attack metals such as aluminum, zinc, copper, and their alloys.

CONDITIONS TO AVOID:

Avoid excessive heat and incompatible substances. Do not use in a way that forms a mist or aerosolize the product.

INCOMPATIBLE MATIERALS:

Avoid strong oxidizing agents, strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS:

Combustion Products Produces carbon oxides (CO, CO2) and nitrogen oxides (NOx).

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE:

Eyes, skin, inhalation and ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMCIAL AND TOXICOLOGICAL CHARACTERISTICS

Eyes: Causes serious eye irritation.

Skin: Causes redness, serious skin irritation, allergic contact dermatitis, and chemical burns. Triethylenetetramine can be absorbed through skin leading to toxic effects. When heated, hot triethylenetetramine vapors may also result in itching of the face with skin redness (erythema) and swelling (edema

Inhalation Inhalation of vapors or mist may cause irritation to the nose, throat and lung (upper respiratory tract). .

Ingestion May cause severe irritation or corrosive burns to the mouth, throat, esophagus, and stomach.

DELAYED AND IMMEDIATE EFFECTS AND ALSO CHONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE:

Prolonged and repeated exposure to uncured epoxy hardener may lead to skin sensitization.

ACUTE TOXICITY

CHEMCIAL NAME	LC50 INHALATION	LD50 ORAL (RAT)	LD50 DERMAL (RABBIT)
fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	Not available	>5000 mg/kg	>5000 mg/kg
triethylenetetramine	Not available	2500 mg/kg	805 mg/kg

CORROSION / IRRITATION / SENSITIZATION INFORMATION:

Skin Corrosion/Irritation: Skin Irritation – Category 2

Serious Eye Damage/Irritation: Eye Irritation – Category 2

Respiratory/Skin Sensitization: Skin Sensitization – Category 1

CARCINOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICOLOGY INFORMATION:

See Section 15 for more information.

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY

CHEMCIAL NAME	**TEST**	**SPECIES**	**RESULT**
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	**LC50**	**Fish**	**1-10 mg/L**
	EC50	**Daphnia**	**10-100 mg/L**
	IC50	**Bacteria**	**10-100 mg/L**

Triethylenetetramine	**LC50**	**Fish**	**>100 mg/L**
	EC50	**Daphnia**	**10-100 mg/L**
	IC50	**Bacteria**	**10-100 mg/L**

Acute Ecotoxicity Category 2 GHS Code: Hazard Statement H401: Toxic to aquatic life

Chronic Ecotoxicity Category 2 GHS Code: Hazard Statement H411: Toxic to aquatic life with long lasting effect

Avoid release to the environment.

Biodegradability Not readily biodegradable

Bioaccumulation Not available

Other Effects Not available

PERSISTENCE AND DEGRADBILITY:

CHEMCIAL NAME	TEST	PERIOD	RESULT
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	**Not readily biodegradable**	**Not readily biodegradable**	**Not readily biodegradable**
Triethylenetetramine	**Not readily biodegradable**	**Not readily biodegradable**	**Not readily biodegradable**

BIOACCUMULATIVE POTENTIAL:

CHEMICAL NAME	Log Pow	BCF	POTENTIAL
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	**Not available**	**Not available**	**Not available**
Triethylenetetramine	**Not available**	**Not available**	**Not available**

MOBILITY IN SOIL:

CHEMICAL NAME	TEST	RESULT

Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	**Not available**	**Not available**
Triethylenetetramine	**Not available**	**Not available**

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

Dispose of unused contents (incineration) in accordance with national and local regulations.

Dispose of container in accordance with national and local regulations.

Ensure the use of properly authorized waste management companies, where appropriate.

See section 8 for recommendations on the use of personal protective equipment.

SECTION 14: TRANSPORTATION INFORMATION

UN NUMBER: UN2259

UN PROPER SHIPPING NAME: TRIETHYLENETETRAMINE SOLUTION, N.O.S. (containing dimer fatty acid (C18)poly amido amine resin)

U.S. DOT HAZARD CLASS: USA DOT 49 CFR (Parts 100 to 185) Regulations

CANADA TDG HARZARD CLASS: TDG regulations (Canadian Transportation of Dangerous Goods regulations)

EUROPE ADR/RID HAZARD CLASS: 8

IMDG CODE (OCEAN) HAZARD CLASS: 8

ICAO/IATA (AIR) HAZARD CLASS: 8

PACKING GROUP: II

ENVIRONMENTAL HAZARDS:

MARINE POLLUTANT: Yes

HAZARDOUS SUBSTANCE (USA): Yes

SPECIAL PRECAUTIONS FOR USER: Information is not available.

OTHER INFORMATION: For surface shipments within the United States: Not regulated.
ORM-D Consumer Commodity / Limited Quantity in 1 Liter or less containers

SECTION 15: REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT IN QUESTION:

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV – List of substances subject to authorization

Substances of very high concern: None of the components are listed.

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

None of the components are listed.

CHEMICAL INVENTORIES:

Canadian Domestic Substances List (DSL): Y

Canadian Non-Domestic Substances List (NDSL): N

European Inventory of Existing Chemical Substances (EINECS): Y

European List of Notified Chemical Substances (ENCS): N

U.S. Toxic Substances Control Act (TSCA): Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed.

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product does not contain substances that are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372. TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, Sept 2, 2011 revision, USA)

This product does not contain any listed substances in California.

Europe RoHS

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

Canada WHMIS Classification

E – Corrosive (Chemical burns)

D1B – Toxic (Skin Absorption)

D2B – Toxic Other (Skin Sensitizer)

Domestic Substance List (DSL)/Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL

United States (USA) · SARA · Section 355 (extremely hazardous substances): None of the ingredients are listed.

United States (USA) · SARA · Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California): · Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Carcinogenic Categories · EPA (Environmental Protection Agency) None of the ingredients are listed.

IARC (International Agency for Research on Cancer) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Canadian Domestic Substances List (DSL) All ingredients are listed.

Canadian Ingredient Disclosure list (limit 0.1%) None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%) None of the ingredients are listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: OTHER SUPPLEMENTAL INFORMATION

LEGEND:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR/RID: European dangerous goods transport road and rail regulations

CAS No: Chemical Abstract Service Registry Number

DOT: Department of Transportation (U.S.)

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods code

OEL: Occupational Exposure Limits

OSHA: Occupational Safety and Health Administration (U.S.)

PEL: Permissible Exposure Limit

RQ: Reportable Quantity

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit (15 minute Time Weighted Average)

TDG: Canadian Transportation of Dangerous Goods Act and Regulations

UN: United Nations U.S.: United States

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