



Safety Data Sheet

RF 2108 Part A

Section 1. Identification

Product Identifier RF 2108 Part A
Synonyms Epoxy Resin
Manufacturer Stock
Numbers 28056A

Recommended use Epoxy Resin
Uses advised against Avoid high temperatures, flames and contact with strong oxidizing agents. Can react vigorously with strong oxidizing agents, strong Lewis or mineral acids, strong mineral and organic base, especially primary and secondary aliphatic amines.

Manufacturer Contact
Address Resin Formulators
 18027 Bishop Avenue
 Carson, CA, 90746
 USA

Phone	Emergency Phone	Fax
(310) 204-6159	(800) 424-9300	(310) 202-7247
	CHEMTREC	

Email	Website
sales@evroberts.com	http://www.evroberts.com

Section 2. Hazards Identification

Classification ACUTE TOXICITY - DERMAL - Category 4
 ACUTE TOXICITY - INHALATION - Category 5
 ACUTE TOXICITY - ORAL - Category 4
 SPECIFIC TARGET ORGAN TOXICITY (Single E - Category 3)

Signal Word Warning

Pictogram



Hazard Statements

Harmful if swallowed
Harmful in contact with skin
May be harmful if inhaled
May cause respiratory irritation; or May cause drowsiness or dizziness

Precautionary Statements

Response

Call a poison center/doctor/ ... /if you feel unwell.
IF INHALED: Call a POISON CENTER or doctor/... if you feel unwell
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If on skin: Wash with plenty of water/ ...
If swallowed: Call a poison center/doctor/ ... / if you feel unwell.
Rinse mouth.
Specific treatment (see ... on this label)
Take off immediately all contaminated clothing and wash it before reuse.

Prevention

Avoid breathing dust/fume/gas/mist/ vapors/spray.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wash ...thoroughly after handling.
Wear protective Butyl Gloves, Face Shield, Eye Bath and Safety Shower.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Refer to manufacturer/Supplier for information on recovery/recycling

Ingredients of unknown toxicity

0%

Hazards not Otherwise Classified

Health Hazards

May be toxic if absorbed through skin. May be moderately toxic and harmful if inhaled. May be slightly toxic and may be harmful if swallowed. May cause severe eye irritation. May cause severe skin irritation. May cause skin sensitization. May produce CNS depression. May cause respiratory tract sensitization.

Safety Hazards

Combustible. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Section 3. Ingredients

CAS	Ingredient Name	Weight %
2426-08-6	N-Butyl Glycidyl Ether	<10 %
25068-38-6	bisphenol A/Epichorhydrin	<55 %

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-Aid Measures

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
Skin Contact	Immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse clothing until thoroughly cleaned.
Eye Contact	Immediately flush eyes with running water for a minimum of 15 minutes. Hold eyelids open during flushing. If irritation persists repeat flushing and obtain medical attention IMMEDIATELY.
Ingestion	Slightly Toxic: Do NOT give liquids if victim is unconscious or drowsy. Otherwise, give no more than 2 glasses of water and induce vomiting by giving 30 cc (2 tablespoons) syrup of IPECAC. If IPECAC is unavailable, give 2 glasses of water and induce vomiting by touching finger to back of victim's throat. Keep victim's head below hips while vomiting. Refer person to medical personnel for immediate attention.
Notes to Physician Signs and Symptoms	Irritation as noted above. Skin sensitization (allergy) may be evidenced by rashes, especially hives. Respiratory tract sensitization (e.g. allergy, asthma) may be evidenced by wheezing with shortness of breath and cough. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness and nausea; in extreme cases, unconscious and death may occur. However, symptomatic and supportive therapy may be needed following severe exposure. In such cases, medical follow-up should be maintained for at least 48 hours.
Treatment	If victim is a child, give no more than 1 glass of water and 15cc (1 tablespoon) syrup of IPECAC. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage should be considered following with a cuffed endotracheal tube.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	<p>Suitable Extinguishing Media: Use dry chemical, CO₂, water spray (fog) or foam.</p> <p>CAUTION! COMBUSTIBLE: Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Container area exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure.</p> <p>Special Fire Fighting Procedures: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.</p>
Unsuitable Extinguishing Media	N/A

Section 6. Accidental Release Measures

Personal precautions	Combustible. Remove Ignition sources. Shut off leaks, if possible without personal risk.
Environmental Precautions	Dike and contain. Contain run-off and dispose of properly. Prevent from entering into drains, ditches or rivers.
Small Spills	Soak up small spills with absorbant material and place in labeled containers for recovery or disposal.
Large Spills	Remove with vacuum trucks or pumps to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material, and place in non-leaking containers for proper disposal. Flush area with water to remove trace residue.
Additional advice	Notify authorities if any exposures to the general public or environment occur or is likely to occur. See Section 13 for information on disposal.

Section 7. Handling and Storage

Advise on Safe Handling	<p>Heating this resin above 300 deg. F in the presence of air may cause slow oxidative decomposition, above 500 deg. F, polymerization may occur. Some curing agents, e.g., aliphatic polyamines, can produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapor from the thermal and chemical decompositions vary widely in composition and toxicity. Do not breathe fumes. Use a NIOSH-approved respirator as required to prevent overexposure. In accord with 29 CFR. 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors. Keep liquid and vapor away from heat, sparks and flames. Surfaces that are sufficiently hot may ignite even liquid product in the absence of sparks of flames. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone. Vapors may accumulate and travel to ignition sources distant from the handling site; flash-fire can result. Use only with adequate ventilation. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Do not pressurize drum containers to empty them. Static electricity may accumulate and create a fire hazard. Earth all equipment. Bond and ground transfer containers and equipment.</p> <p>WARNING. May be toxic and harmful if absorbed through skin. May be moderately toxic and harmful if heated. May be slightly toxic if swallowed. May cause severe eye irritation. May cause severe skin irritation. May cause skin sensitization. May cause respiratory tract sensitization. Containers, even those that have been emptied, can contain hazardous product residues. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse.</p>
Storage	Keep container closed when not in use.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	N-Butyl Glycidyl Ether	N/A	N/A	N/A
	bisphenol A/Epichlorhydrin	N/A	N/A	N/A
Personal Protective Equipment	Goggles, Gloves, Respirator, CHEMICAL GOGGLES, PROTECTIVE CLOTHING, EYE WASH AND SAFETY SHOWER			
Respiratory Protection	Wear appropriate respirator and protective clothing.			
Engineering Measures	Use explosion-proof equipment. Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.			
Eye protection	Chemical resistant goggles must be worn.			
Protective Clothing	Avoid contact with eyes. Wear safety goggles as appropriate. Wear chemical resistant clothing as required to minimize contact			
Respiratory Protection	Avoid breathing vapors which may be produced under some conditions such as heating or applications of uncured material in large surface areas (e.g., flooring and painting). Avoid breathing aerosols and mists which may be formed by various methods of applications. If exposure may or does exceed occupational exposure limits, use a NIOSH-approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either a full-face, atmosphere-supplying respirator or air-purifying respirator for organic vapors.			
Exposure Guidelines	Components with workplace control parameters.			
	Reaction product:			
	Bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)			
	Regulation: ACGIH			
	Exposure time: n/a - Value: n/a			
	N-BUTYL GLYCIDYL ETHER			
	Regulation – Exposure time - Value			
	ACGIH – Time Weighted Average (TWA) – 3 ppm			
	OSHA Z1 – PEL – 50 ppm 270 mg/m3			
	OSHA Z1A - Time Weighted Average (TWA) – 25 ppm 135 mg/m3			

Section 9. Physical and Chemical Properties

Physical State	Liquid
Color	Milky White/Yellow
Odor	N/A
Odor Threshold	N/A
Solubility	Negligible
Partition coefficient Water/n-octanol	N/A
VOC%	N/A
Viscosity	N/A
Specific Gravity	1
Density lbs/Gal	12.3
Pounds per Cubic Foot	N/A
Flash Point	N/A
FP Method	N/A
Ph	N/A
Melting Point	N/A
Boiling Point	N/A
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	N/A
Flammability	N/A
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	N/A
Vapor Density	N/A

Section 10. Stability and Reactivity

Conditions to Avoid	Avoid heat, flames, sparks and other sources of ignition. Store away from nitrites. Can react vigorously with strong oxidizing agents, strong Lewis or mineral acids, and strong mineral and organic bases, especially primary and secondary aliphatic amines.
Hazardous Decomposition Products	Carbon monoxide, aldehydes and acids may be formed during combustion. Reaction with some curing agents may produce considerable heat.
Hazardous Reactions	Will not occur
Hazardous Polymerization	Will not occur

Section 11. Toxicological Information

Chronic Health Hazard

Component:
Reaction product : bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)
Concentration: 86.4%
Regulation: US. IARC Monographs on Occupational Exposures to Chemical Agents
*This component has not been classified by the International Agency for Research on Cancer (IARC)

N-BUTYL GLYCIDYL ETHER
Concentration: 13.6%
Regulation: US. IARC Monographs on Occupational Exposures to Chemical Agents
*This component has not been classified by the International Agency for Research on Cancer (IARC)

Carcinogenicity

Toxicology Information Carcinogenicity Recent 2-year bioassays in rats and mice exposed by the dermal route to the diglycidyl ether of bisphenol A (BADGE) yielded very limited evidence of weak carcinogenicity. It was concluded that the renal tumor evidence with a resin similar to a component "was of no biological significance" and that the resin "is not a systemic carcinogen when applied to the dorsal skin of CF1 mice". Note: Diglycidyl ether of bisphenol A (BADGE) is a component in all BPA/ECH based epoxy resin.

This product contains trace residual quantities of epichlorohydrin (ECH), CAS no. 106-89-8. It is very unlikely that normal work practices with this product could result in measurable ECH concentration of the workplace atmosphere. Nevertheless, you should be aware that ECH has been reported to produce cancer in laboratory animals and to produce mutagenic changes in bacteria and cultured human cells.

Mutagenicity

Resins of this type, liquid resins based on diglycidyl ether of bisphenol A have proved to be inactive when tested by in vivo mutagenicity assays.

These resins have shown activity in in-vitro microbial mutagenicity screening and have produced chromosomal aberrations in cultured rat liver cells.

The significance of these tests to man is unknown.

Mutagenicity 2

A component has tested positive in a number of in vitro genetic toxicity assays with and without metabolic activation.

Mixed results were observed in the dominant lethal and the mouse micronucleus test.

Other Toxicological Information

Rats exposed to a component at 150 ppm for 50 7-hour exposures demonstrated significantly retarded growth. In the same study, there was 50% mortality in rats exposed at 300 ppm, with additional signs of toxicity in the survivors. Testicular atrophy was observed in rats exposed at 300 ppm, but the rats were juvenile, obscuring the significance if any, of the results. In a 28-day inhalation study, rats exposed at 188 ppm showed decreased body weight and changes in blood chemistry. Severe irritation of the upper respiratory tract was observed in rats exposed at 94 ppm and 188 ppm.

POTENTIAL HEALTH EFFECTS:

Inhalation

May cause respiratory tract irritation.
May produce CNS depression.
May be a respiratory tract sensitizer.

	Potential respiratory irritant, however, because of its low volatility respiratory irritation is not likely unless the material is heated or mists are formed. May be moderately toxic and harmful if inhaled.
Skin	May cause severe skin irritation. May cause skin damage. May cause skin sensitization. May be toxic if absorbed through skin.
Eyes	May be severely irritation to the eyes. May cause corneal damage.
Inhalation	May be slightly toxic and may be harmful if swallowed. May produce CNS depression.
Aggravated Medical Condition	Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Preexisting skin or respiratory allergies may increase the chance of developing increased allergy symptoms from exposure.

Section 12. Ecological Information

Elimination Information (persistence and degradability)

Biodegradability Expected to be not readily biodegradable.

Ecotoxicity Effects

Toxicity to fish Components Practically non toxic, 100 < LC/EC/IC 50 <= 1000 mg/l.

Section 13. Disposal

Product Disposal

If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40 CFR 261). However, the generation of waste should be avoided or minimized wherever possible. Disposal should be in accordance with local, state, provincial and national regulations. Small quantities should be treated with a liquid decontaminant. Chemical waste, even small quantities, should never be poured down drains, sewers or waterways. Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

Section 14. Transport Information

UN Number	3082
UN Proper Shipping Name	Environmentally hazardous substance, Liquid, n.o.s.
DOT Classification	N/A
Packing Group	N/A
All Regulatory Classification	This product is not regulated by CFR, TDG, IMO, IMDG or IATA
Further Information	The above transportation classification are for non-bulk shipments. Transportation information for bulk shipments may be different. Not regulated by D.O.T. if in a container of 119 gallon capacity or less.

Section 15. Regulatory Information

Disclaimer

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material. To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency.

Notification status

AICS: All components listed.
DSL: All components listed.
INV (CN): All components listed.
TSCA: All components listed.
KECI (KR): All components listed.
PICCS (PH): All components listed.
EINECS: All components listed.
ENCS (JP): All components listed.

Notification status Legend:

Y=Yes (Listed); AICS = Australian Inventory of Chemical Substances; DSL = Canadian Domestic Substances List; INV(CN) = Inventory of Existing Chemical Substances In China; ENCS(JP) = Japanese Existing and New Chemical Substances; TSCA = Toxic Substance Control Act; KECI(KR) = Korean Existing Chemicals Inventory; PICCS(PH) = Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

United States Federal Regulations:

US EPA CERCLA Hazardous Substances (40 CFR 302) Reaction product:

No RQ

Bisphenol-A-(epichlorohydrin); epoxy

Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER:

No RQ

SARA 311/312 Hazard Categories: Acute Health Hazard

Fire Hazard US EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372. 65) – Supplier Notification Required

Reaction product: No De Minimis Concentration

Bisphenol-A-(epichlorohydrin); epoxy

Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER:

No De Minimis Concentration

US EPA Emergency Planning and Community Right-To-Know Act (EPCRA)

SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

Reaction product: Threshold Planning Quantity: No TPQ

Bisphenol-A-(epichlorohydrin); epoxy

Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER:

Threshold Planning Quantity: No TPQ

Reaction product: Reportable quantity: No RQ

Bisphenol-A-(epichlorohydrin); epoxy

Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER: Reportable quantity: No RQ

New Jersey Right-To-Know Chemical List
Reaction product: Not Listed
Bisphenol-A-(epichlorohydrin); epoxy
Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER: Not Listed
Additional components Not Found in Section 2:

1-chloro-2,3-epoxy propane; CAS no: 106-89-8; 2 ppm -3 ppm; Listed
Phenyl Glycidyl Ether; CAS no: 122-60-1; 5 ppm; Not Listed
Diglycidyl ether; CAS no: 2238-07-5; < 200 ppm; Listed

Pennsylvania Right-To-Know Chemical List
Reaction product: Not Listed
Bisphenol-A-(epichlorohydrin); epoxy
Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER: Not Listed
Additional components Not Found in Section 2:

1-chloro-2,3-epoxy propane; CAS no: 106-89-8; 2 ppm -3 ppm; Special hazard.
Phenyl Glycidyl Ether; CAS no: 122-60-1; 5 ppm; Not Listed
Diglycidyl ether; CAS no: 2238-07-5; < 200 ppm; Environmental hazard.

Massachusetts Right-To-Know Chemical List
Reaction product: Not Listed
Bisphenol-A-(epichlorohydrin); epoxy
Resin (number average molecular weight <= 700)

N-BUTYL GLYCIDYL ETHER: Not Listed
Additional components Not Found in Section 2:

1-chloro-2,3-epoxy propane; CAS no: 106-89-8; 2 ppm -3 ppm; Carcinogenic
Phenyl Glycidyl Ether; CAS no: 122-60-1; 5 ppm; Not Listed
Diglycidyl ether; CAS no: 2238-07-5; < 200 ppm; Extraordinarily hazardous.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
Additional components Not Found in Section 2:

1-chloro-2,3-epoxy propane; 2 ppm -3 ppm;
Regulation: US. California Safe Drinking Water & Toxic Enforcement Act
(Proposition 65)
Value: Listed October 1, 1987; Carcinogenic

Phenyl Glycidyl Ether; 5 ppm
Regulation: US. California Safe Drinking Water & Toxic Enforcement Act
(Proposition 65)
Value: Listed October 1, 1990; Carcinogenic

Section 16. Other Information

Revision Date

6/25/2015

HMIS Rating (Not Regulated) The HMIS Rating for this product is:
Health: 2 Flammability: 2 Reactivity: 0

0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

For Information Purposes Only - No Longer Regulated

Disclaimer

The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication as part of E.V. Roberts' product safety program. It is not intended to constitute performance information concerning the product. No warranty, expressed or implied, or merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency. E.V. Roberts does not undertake to furnish advice on such matters.



Safety Data Sheet


RF 2108 Part B

Section 1. Identification

Product Identifier	RF 2108 Part B		
Synonyms	Curing Agent		
Manufacturer Stock Numbers	12113B		
Recommended use	Curing Agent		
Uses advised against	Sodium hypochlorite. Organic acids (i.e. acetic acid, citric acid, etc). Mineral acids. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Reactive metals (e.g. sodium, calcium, zinc, etc.). Materials reactive with hydroxyl compounds. Oxidizing agents.		
Manufacturer Contact			
Address	Resin Formulators 18027 Bishop Avenue Carson, CA, 90746 USA		
	Phone	Emergency Phone	Fax
	(310) 204-6159	(800) 424-9300 CHEMTREC	(310) 202-7247
	Email	Website	
	sales@evroberts.com	http://www.evroberts.com	

Section 2. Hazards Identification

Classification	ACUTE TOXICITY - DERMAL - Category 3 ACUTE TOXICITY - INHALATION - Category 4 EYE DAMAGE/IRRITATION - Category 2A SKIN CORROSION/IRRITATION - Category 2
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	SPECIFIC TARGET ORGAN TOXICITY (Single E - Category 3)
Signal Word	Warning
Pictogram	
Hazard Statements	<p>Causes serious eye irritation Harmful if inhaled May cause respiratory irritation Moderately irritating to skin Toxic in contact with skin</p>
Precautionary Statements	
Response	<p>Call a poison center/doctor/ ... /if you feel unwell. If eye irritation persists: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin: Wash with plenty of water/ ... Specific treatment (see ... on this label) Take off immediately all contaminated clothing and wash it before reuse.</p>
Prevention	<p>Avoid breathing dust/fume/gas/mist/ vapors/spray. Use only outdoors or in a well-ventilated area. Wash ...thoroughly after handling. Wear eye protection/face protection. Wear protective Butyl Gloves, Face Shield, Eye Bath and Safety Shower.</p>
Storage	<p>Store in a well-ventilated place. Keep container tightly closed. Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.</p>
Disposal	<p>Dispose of contents/container to ... Refer to manufacturer/Supplier for information on recovery/recycling</p>
Ingredients of unknown toxicity	0%
Hazards not Otherwise Classified	
Emergency Overview	<p>Warning: Toxic in contact with skin. Corrosive. Moderate respiratory irritant. Severe skin irritant. Severe eye irritant. May cause sensitization by skin contact.</p>
Potential Health Effects	
Inhalation	Harmful if inhaled and may cause delayed lung injury. Can cause severe eye, skin and respiratory tract burns. Risk of serious damage to the lungs (by inhalation). May cause nose, throat, and lung irritation. Inhalation of aerosol may cause irritation to the upper respiratory tract.
Eye contact	Causes eye burns. May cause blindness. Severe eye irritation.
Skin contact	Causes skin burns. Toxic in contact with skin.
Ingestion	If person is conscious, give water or milk to dilute. DO NOT induce vomiting. Do

Chronic Health Hazard	not attempt chemical neutralization. Obtain medical assistance. This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage. Repeated or prolonged contact causes sensitization, asthma and eczemas.
Exposure Guidelines	
Target Organs	Skin, Eyes, Respiratory System
Symptoms	Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat.
Aggravated Medical Condition	Eye disease, Skin disorders and Allergies. Adverse skin effects (such as rash, irritation or corrosion) Adverse eye effects (such as conjunctivitis or corneal damage). Adverse respiratory effects (such as cough, tightness of chest or shortness of breath) and Asthma.

Section 3. Ingredients

CAS	Ingredient Name	Weight %
112-24-3	Triethylenetetramine	<10 %
68410-23-1	Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	<50 %

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-Aid Measures

General advice	Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
Eye Contact	Eye Irritant: Immediately flush eyes with running water for a minimum of 20 minutes. Hold eyelids open during flushing. Obtain medical attention IMMEDIATELY.
Skin	Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Wash off immediately with plenty of water for at least 20 minutes. Cover wound with sterile dressing. Take off contaminated clothing and shoes immediately. NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.
Ingestion	Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
Inhalation	If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media

Extinguishing media:
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
Dry sand
Limestone powder.

Specific Hazards:

May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.

Special Protective Equipment for Fire-Fighters

Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

Further Information:

Do not allow run-off from fire fighting to enter drains or water courses.

Unsuitable Extinguishing Media

N/A

Section 6. Accidental Release Measures

Personal precautions

Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

Environmental Precautions

Construct a dike to prevent spreading

Additional Advice

If possible, stop flow of product

Methods for cleaning up

Approach suspected leak areas with caution. Contact Air Products Emergency Response Center for advice. Place in appropriate chemical waste container.

Section 7. Handling and Storage

Handling

Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid breathing vapors and/or aerosols. Avoid contact with eyes. Use only in well-ventilated areas. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from heat and sources of ignition. Keep in a dry, cool place. Keep away from Oxidizers.

Technical measures/Precautions

Do not store in reactive metal containers

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Triethylenetetramine	N/A	N/A	N/A
	Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	N/A	N/A	N/A
Personal Protective Equipment Engineering Measures	Goggles, Gloves, Face Shield, CHEMICAL GOGGLES, PROTECTIVE CLOTHING Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.			
Personal Protective Equipment Respiratory Protection Hand protection	Wear appropriate respirator when ventilation is inadequate. Neoprene gloves. Butyl-rubber. Nitrile rubber. Impervious gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.			
Eye protection	Full face shield with goggles underneath. Chemical resistant goggles must be worn.			
Skin Protection	Impervious clothing. Gloves Full rubber suit (rain gear). Rubber or plastic boots. Slicker Suit.			
Environmental exposure controls Special Instructions for protection and hygiene	Construct a dike to prevent spreading. Discard contaminated leather articles. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking or using the toilet.			

Section 9. Physical and Chemical Properties

Physical State	Liquid
Color	Milky White/Amber
Odor	N/A
Odor Threshold	N/A
Solubility	Soluble
Partition coefficient Water/n-octanol	N/A
VOC%	N/A
Viscosity	130,000 - 230,000 cps
Specific Gravity	1
Density lbs/Gal	10.8
Pounds per Cubic Foot	N/A
Flash Point	>115°C (240° F)
FP Method	N/A
Ph	Alkaline
Melting Point	N/A
Boiling Point	N/A
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	N/A
Flammability	N/A
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	N/A
Vapor Density	N/A

Section 10. Stability and Reactivity

Chemical Stability	Stable under normal conditions.
Materials to Avoid	Sodium hypochlorite. Organic acids (i.e. acetic acid, citric acid, etc). Mineral acids. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. Nitrous acid and other nitrosating agents. Oxidizing agents.
Hazardous Decomposition Products	Nitric Acid Ammonia Nitrogen Oxides (NOx) Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon Monoxide Carbon Dioxide (CO2) Nitrosamine

Section 11. Toxicological Information

Acute Health Hazard	Ingestion: LD50: 2,500 mg/kg (Rat) Inhalation: No data available Skin: LD50: 805 mg/kg (Rabbit) Eye Irritation/corrosion: Severe Eye Irritation Acute dermal irritation/corrosion: Severe skin irritation Sensitization: May cause sensitization by skin contact. Sensitization has occurred in laboratory animals after repeated exposures. Chronic Health Hazard: Results from a battery of short term genotoxicity tests on this material or its components indicate mutagenic activity.
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Section 12. Ecological Information

Ecotoxicity Effects	Aquatic Toxicity: No data is available on the product itself. Toxicity to other organisms: No data available.
Persistence and degradability	Mobility: No data available Bioaccumulation: No data is available on the product itself.

Section 13. Disposal

Waste Treatment Methods	Waste from residues and unused products: Contact supplier if guidance is required.
Contaminated packaging	Dispose of container and unused contents in accordance with federal, state, and local requirements.

Section 14. Transport Information

UN Number	3082
UN Proper Shipping Name	Environmentally Hazardous Substance, Liquid, n.o.s. Dimer fatty acids (C18) Poly amido amine resin
DOT Classification	9
Packing Group	III
Further Information	Package and transport in accordance with 49 CFR 173.154(b)

Section 15. Regulatory Information

Regulatory Information	USA (TSCA) Included on inventory EU (EINECS) Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer Canadian (DSL) Included on Inventory. Australia (AICS) Included on Inventory. Japan (ENCS) Included on Inventory. South Korea (ECL) Included on Inventory. China (SEPA) Included on Inventory. Philippines (PICCS) Included on Inventory.
EPA SARA Title III Section 312	EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification: Chronic Health Hazard, Acute Health Hazard EPA SARA Title III Section 313 (40 CFR 372) Component above 'de minimus level': NONE
California Prop. 65 Components	This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.
WHMIS Hazard Classification	Toxic Material Causing Immediate and Serious Toxic Effect: Very Toxic Material Causing Other Toxic Effects, Corrosive Material

Section 16. Other Information

Revision Date

6/26/2015

HMIS Rating (Not Regulated) The HMIS Rating for this product is:
Health: 3 Flammability: 1 Reactivity: 0

0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

For Information Purposes Only - No Longer Regulated

Disclaimer

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To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency. E.V. Roberts does not undertake to furnish advice on such matters.