

Safety Data Sheet



1. Product and Company Identification

Product Name: **NUPLABOND® B**
Product Part #: PN 0203011
Material Uses: Adhesive, sealing, and coating compound
(M)SDS#: NUPLABONDB-20180711
Validation Date: June-14-2021
Supplier/Manufacturer: Specialty Polymers & Services, Inc. (SP&S, Inc.)
27822 Fremont Court
Valencia, California (CA) 91355, U.S.A.
Non-emergency phone number: (661) 294-1790 (7AM – 5PM PST)
E-mail: msds@spolymers.com

In case of emergency: Chemtrec (800) 424-9300 or (703) 527-3887

2. Hazards Identification

GHS CLASSIFICATION OF SUBSTANCE OR MIXTURE:

Skin corrosion/irritation:	Category 2, H315	Eye damage/irritation:	Category 2, H319
Skin sensitization:	Category 1, H317	Germ cell mutagenicity:	Category 2, H341
Aquatic Hazard (Chronic):	Category 2, H411	Aquatic Hazard (Acute):	Category 3, H402

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:



SIGNAL WORDS: Warning!

HAZARD STATEMENTS:

H315 Causes skin irritation	H319 Causes serious eye irritation
H317 May Cause an allergic skin reaction	H341 Suspected of causing genetic defects
H411 Toxic to aquatic life with long lasting effects	H402 Harmful to aquatic life

PRECAUTIONARY STATEMENTS:

PREVENTION: P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/fume/mist/vapor/spray
P264 Wash hands 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.
P273 Avoid release to the environment.
P280 Wear protective gloves, clothing, and eye/face protection.

RESPONSE: P301+P330+P331+P312 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call POISON CENTER and/or doctor if you feel unwell.
P303+P361+P364+P353+P352 IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash before reuse. Rinse skin with water/shower. Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical attention.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.
 P308+P313 IF exposed or concerned: Get medical 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

See toxicological information (section 11)

General Information: Read entire MSDS for a more thorough evaluation of the hazards

3. Composition / Information on Ingredients

Name	CAS Number	%
Bisphenol A epoxy resin	25068-38-6	70 – 95
Propane, 1,2-Epoxy-3-(Tolyoxy)-	2210-79-9	5 - 20

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

4. First Aid Measures

Eye Contact:	Check for and remove any contact lenses. Immediately flush eyes for at least 15 minutes with running water. Hold eyelids apart to ensure rinsing of the entire eye surface and lids with water. Get medical attention if irritation occurs.
Skin Contact:	In case of contact, wash affected areas with plenty of water, and soap, if available, for several minutes. Remove and clean contaminated clothing and shoes before re-use. Get medical attention if irritation occurs.
Inhalation:	Move exposed person to fresh air. If not breathing, give artificial respiration or oxygen. If breathing is difficult, transport to medical care and, if available, give supplemental oxygen. Loosen tight clothing such as a collar, tie, belt, or waistband. Get immediate medical attention.
Ingestion:	Wash out mouth with water. If swallowed dilute by giving two (2) glasses water to drink. Do not induce vomiting until direct to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Note to physician:	No specific treatment. Treat symptomatically. Call poison control center if large quantities were ingested

5. Fire-Fighting Measures

Flash point:	120°C (248°F) closed cup
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds, metal oxides and other oxides.
Extinguishing Media:	Carbon dioxide, foam, dry chemical, water spray as suitable for the surrounding fire.
Special Exposure Hazards:	Promptly isolate the scene by removing all persons from the vicinity of the fire. No actions shall be taken involving any personal risk or without suitable training.
Special Protective equipment for fire-fighters:	No Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal Precautions:	No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering area. Do not touch or walk through spilled material. Avoid breathing vapor or mist and provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental Precautions:	Avoid dispersal of spilled material and runoff that leads to contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution.
Methods of Clean Up:	Stop leak if without risk. Move containers from spill area. Approach spill from up wind if possible. Prevent spill from entering sewers, rivers and other water courses, basements, or

confined areas. Wash into effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite, or diatomaceous earth) and place in container for disposal according to local regulations. Dispose of only using a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information.

7. Handling and Storage

- Handling:** Wear appropriate personal protective equipment (see Section 8) when handling. Eating, drinking, and smoking should be prohibited in areas where chemicals are handled, stored, or processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in processes where this material is used. Keep in the original container or a suitable alternate made from a compatible material. Keep all containers tightly closed when not in use. Empty containers retain product residue and should be disposed of properly. Do not reuse empty containers for other purposes or to hold other materials.
- Storage:** Store in accordance with local regulations. Store in original containers, at 15°C - 40°C. Keep away from incompatible materials (see Section 10) and food and drink. Keep all containers tightly closed when not in use and tightly re-seal after use. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Keep away from heat, sparks, open flame, and direct sunlight.

8. Exposure Controls / Personal Protection

- Recommended Monitoring Procedures:** If this product contains ingredients with exposure limits, personal, workplace, atmospheric, or biological monitoring may be required to determine the effectiveness of the ventilation system or other control measures and/or to determine whether it is necessary to use respiratory protective equipment. Consider European Standard EN 689 or similar industry or governmental guidelines for appropriate methods for the assessment of exposure by inhalation to chemical agents and/or hazardous substances.
- Engineering measures:** No special ventilation requirements are necessary for this product. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure below the recommended or statutory limits.
- Hygiene measures:** Wash hands, forearms, and face thoroughly after handling any chemical products, before eating, smoking, and using the lavatory and at the end of the work period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

- Respiratory:** A respiratory protection program in compliance with 29CFR1910.134, or other applicable regulatory standard must be followed whenever exposure limits may be exceeded. If engineering controls are not feasible, or if inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands:** Wear neoprene, nitrile rubber or other suitable impervious gloves; consider European Standard EN374 or similar industry or governmental guidelines. Consider the parameters specified by the glove manufacture and check gloves during use to ensure they are retaining their protective properties. Gloves selected must have a breakthrough rating appropriate for the work shift. If a risk assessment indicates that it is necessary, gloves should always be worn when handling chemical products.
- Eyes:** When a risk assessment indicates, safety eyewear complying with an approved standard, such as OSHA Standard 29CFR1910.133 or European Standard EN166, should be used to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, at a minimum use chemical splash goggles. If significant splash hazard may occur, consider using a full-face shield.
- Skin:** Personal Protective equipment for the body should be selected based on the task being performed and the risks involved. Typical protective equipment includes non-absorbent lab coats, disposable protective sleeves, coats, or whole-body suits. Consider CFR1910.132 and CFR1910.136 for OSHA approved standards on protective clothing and footwear. Consider seeing a safety specialist to determine the appropriate level of protection for your task.

Environmental Emissions from ventilation or work processes should be checked to ensure they comply with the requirements of environmental regulations. In some cases, fume scrubbers, filters, or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Appearance:	Light yellow to light amber liquid	Odor	Faint odor
Boiling Point:	Not determined	Freezing Point:	Not determined
Flash Point:	120°C (248°F) closed cup	pH:	Not determined
Auto-ignition Temperature:	Not determined	Flammable Limits:	Not determined
Vapor Pressure:	< 1 mm Hg at 20°C (68 °F)	Water Solubility:	<0.1%
Specific Gravity:	1.152	Vapor Density:	>1 (Air = 1)
Evaporation Rate:	<1 (butyl acetate =1)	VOC:	<20 g/ L (estimated)
Viscosity:	~740 cP		

10. Stability and Reactivity

Chemical Stability: This product is stable, under normal conditions of storage and use, hazardous reactions will not occur.
 Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.
 Conditions to Avoid: High temperatures and exposure to strong oxidizing agents, acids, bases, amines, and mercaptans.
 Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition products may include the following materials: carbon monoxide, carbon dioxide, phenolics and aldehydes.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Bisphenol A Epoxy Resin	-	LC0 Inhalation Vapor	Rat – Male	0.00001 ppm
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat – Male & Female	>2,000 mg/kg
	OECD 420 Acute Oral Toxicity – Fixed Dose	LD50 Oral	Rat – Female	>2,000 mg/kg
1,2-Epoxy-3-(Tolyoxy)- Propane	-	LD50 Oral	Rat	4,000 mg/kg
	-	LD50 Dermal	Rabbit	>2,000 mg/kg
	-	LC50 Inhalation	Rat	1200 ppm

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
Bisphenol A Epoxy Resin	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin – Mild irritant
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Mild irritant
1,2-Epoxy-3-(Tolyoxy)- Propane	-	Rabbit	Skin – Irritant
	-	Rabbit	Eyes – Slightly irritating

Sensitizer

Product/Ingredient Name	Test	Species	Result
Bisphenol A Epoxy Resin	OECD 429 Skin Sensitization: local lymph node assay	Skin / Mouse	Sensitizing
1,2-Epoxy-3-(Tolyoxy)- Propane	-	-	Sensitizing to skin

Mutagenicity

Product/Ingredient Name	Test	Result
Bisphenol A Epoxy Resin	Experiment – invitro, bacteria, metabolic activation +/-	Positive
	Experiment – invitro, mammalian-animal, somatic cells, metabolic activation +/-	Positive
	Experiment – invitro, mammalian-animal, germ cells, metabolic activation +/-	Negative
	Experiment – invitro, mammalian-animal, somatic cells, metabolic activation +/-	Negative
1,2-Epoxy-3-(Tolyoxy)- Propane	OECD Test Guideline 471 – invitro, with and without metabolic activation	Positive
	OECD Test Guideline 474 – invitro, Application route: Oral, Dose: 2000 mg/kg	Negative
	Experiment – invitro, Application route: dermal, Dose: 500 mg/kg, Exposure time: 5 days	Negative
	OECD Test Guideline 478 – invitro, Application route: dermal, Dose: 1.5 mg/kg, Exposure time: 8 weeks days	Positive

Conclusion/ Summary: the weight of scientific evidence indicates that one or more components of this product are suspected to be genotoxic

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
Bisphenol A Epoxy Resin	OECD 416 Two generation reproduction toxicity study	Rat	Negative	Negative	Negative

Teratogenicity

Product/Ingredient Name	Test	Species	Results
Bisphenol A Epoxy Resin	OECD 414 Prenatal developmental Toxicity Study	Rat – Female	Negative – oral
	EPA CFR	Rabbit – Female	Negative – dermal
	OECD 414 Prenatal developmental Toxicity Study	Rabbit – Female	Negative – oral

Potential Acute Health Effects

Inhalation: May cause respiratory tract irritation; drowsiness or mental confusion may occur.
Ingestion: May cause irritation of the digestive tract; nausea and stomach pain may occur.
Skin Contact: May cause moderate to severe irritation. Repeated or prolonged contact may cause sensitization, asthma, eczemas.
Eye Contact: May be seriously irritating to the eyes.

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
1,2-Epoxy-3-(Tolyoxy)-Propane	OECD Test Guideline 412 Exposure time: 4 weeks, Number of exposures: 6 hours	NOEC Inhalation vapor	Rat-Male and Female	> 4 ppm

General: Once sensitized, an allergic reaction may occur when subsequently exposed to very low levels.
Target Organs: No known significant effects or critical hazards
Carcinogenicity: No known significant effects or critical hazards
Mutagenicity: Suspected of causing genetic defects.
Teratogenicity: No known significant effects or critical hazards
Developmental Effects: No known significant effects or critical hazards
Fertility Effects: No known significant effects or critical hazards

12. Ecological Information

Environmental Effects: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic Ecotoxicity

Product/Ingredient Name	Test	Endpoint	Exposure	Species	Result
Bisphenol A Epoxy Resin	-	Acute EC50	72 hours Static	Algae	9.4 mg/L
	OECD 202 Daphnia Sp. Acute Immobilization Test	Acute EC50	48 hours Static	Daphnia	1.7 mg/L
	-	Acute IC50	3 hours Static	Bacteria	>100 mg/L
	OECD 203 Fish, Acute toxicity test	Acute LC50	96 hours Static	Fish	1.5 mg/L
	OECD 211 Daphnia Magna Reproduction test	Chronic NOEC	21 days Semi-Static	Daphnia	0.3 mg/L
1,2-Epoxy-3-(Tolyoxy)- Propane	-	Acute LC50	96 hours	Fish	1-10 mg/l
	-	Acute EC50	48 hours	Daphnia	1-10 mg/l
	OECD Test Guideline 201	Acute EC50	72 hours Static	Algae	5.1 mg/l

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
Bisphenol A Epoxy Resin	-OECD derived from OECD 301F (Biodegradation test)	28 days	5%
1,2-Epoxy-3-(Tolyoxy)- Propane	OECD Test Guideline 301B	28 days	3-4%

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
Bisphenol A Epoxy Resin	Fresh water 3.58 days – 7.1 days	-	Not readily
1,2-Epoxy-3-(Tolyoxy)- Propane	-	-	Not readily

Bioaccumulative potential

Product/Ingredient Name	Log P _{ow}	BCF	Potential
Bisphenol A Epoxy Resin	3.242	31	Low
1,2-Epoxy-3-(Tolyoxy)- Propane	> 3	-	Low

Other adverse effects: No known significant effects or critical hazards

Other information: BOD5: Not determined COD: Not Determined TOC: Not determined

13. Disposal Consideration

Waste Disposal Method: Disposal of this products, solutions, and by-products should at all times comply with the requirements of environmental and waste disposal legislation and any regional or local authority requirements. Dispose of surplus, non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed on untreated to the sewer system unless this is complaint with all applicable laws and regulations. Incineration by an approved and licensed contractor is the most common disposal method. Packaging materials that and absorbents containing the product can typically be landfilled or incinerated. Contact local authorities to determine the proper means of disposal in your area.

14. Transport Information

DOT (US) Classification: Not regulated for transportation purposes under 49CFR in non-bulk (less than 450L) when transported by motor vehicle, rail car, or aircraft.

TDG (Canadian) Classification: Not regulated for transportation purposes when transported by road or rail.

IATA – small package sizes: Container sizes with net contents of ≤ 5 L (for liquids) or ≤ 5 kg (for solids) are not subject to dangerous good regulations per special provision A197, provided that the packagings meet the general good quality packagings provisions of 5.0.2.4.1, 5.0.2.6.1.1., and 5.0.2.8. If special revision A197 is not applicable due to operator, state, or other variations then the same sizes can be shipped as Limited Quantity using packaging instruction Y964 as long as the shipment is complaint with all applicable operator variations. Environmentally hazardous substances markings and UN boxes are not required when shipping using the Limited Quantity exemption and packaging instruction Y964.

IMDG (Ocean Shipments) – small package sizes: under IMDG Code 2.10.2.7, Marine pollutants with the shipping names "UN 3077 Environmentally hazardous substance, solid, n.o.s." and "UN 3082 Environmentally hazardous substance, liquid, n.o.s." shipped in quantities of ≤ 5 L per package are not subject to regulation other than specific packaging provisions.

IATA & IMDG shipments of packages sizes greater than 5 Liters

ID Number:	UN3082	Label:	Marine Pollutant
Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin, 1,2-Epoxy-3-(Tolyoxy)- Propane)		
Hazard Class:	9	Packing Group:	PGIII

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This product is a hazardous chemical under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III: Section 304 – CERCLA: This product does not contain chemicals regulated under Section 304 as extremely hazardous substance(s) for emergency release notification ("CERCLA" List):

SARA Title III: Section 311/312 – Hazard Communication Standard (HCS): Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain a toxic chemical for routine annual Toxic Chemical Release Reporting under section 313 (40 CFR 372).

TSCA Section 8(b) – Inventory Status: All chemical(s) comprising this product are listed on the TSCA inventory.

TSCA Section 12(b) – Export Notification: This product does not contain chemicals which are subject to Section 12(b) export notification.

State Regulations:

California Proposition 65: This product does not expose you to chemicals known to the State of California to cause cancer or chemicals known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Regulations:

REACH Status (EC 1907/2006): This material has been registered, pre-registered, or is otherwise exempt from registration under REACH.

REACH Annex XIV (SVHC): No listed components as of validation date

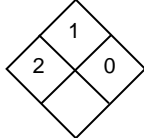
Reach Annex XVIII (Restrictions on the manufacture, placing on the market & use of certain dangerous substances, mixtures, and articles): No list components as of validation date

WHMIS: Class D-2B: Material causing other toxic effects.

International Lists:

Australia Inventory (AICS):	all components are listed or exempt	Japan Inventory (ENCS):	all components are listed or exempt
Canadian Inventory (CEPA-DSL):	all components are listed or exempt	Korea Inventory (ECL):	all components are listed or exempt
China Inventory (IECSC):	all components are listed or exempt	Philippines Inventory (PICCS):	all components are listed or exempt

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA		National Fire Protection Association (USA):	
Health	2		
Flammability	1		
Physical Hazards	0		
Personal Protection	C*		

*suggested minimum personal protection equipment. End user must determine appropriateness of these suggestions for their applications and usage conditions.

Reason Issued: update

Prepared by: Preston White

Approved by: Chris Meyer Title: Vice President

NOTICE TO READER: While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF PRODUCTS FOR THE USER'S PARTICULAR PURPOSE(S).

THIS PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

Safety Data Sheet



1. Product and Company Identification

Product Name: **NUPLABOND® Part A**
Product Part #:
Material Uses: Adhesive, sealing, and coating compound
(M)SDS#: NuplabondA-20210614
Validation Date: June-14-2021
Supplier/Manufacturer: Specialty Polymers & Services, Inc. (SP&S, Inc.)
27822 Fremont Court
Valencia, California (CA) 91355, U.S.A.
Non-emergency phone number: (661) 294-1790 (7AM – 5PM PST)
E-mail: msds@spolymers.com

In case of emergency: Chemtrec (800) 424-9300 or (703) 527-3887

2. Hazards Identification

GHS CLASSIFICATION OF SUBSTANCE OR MIXTURE:

Skin corrosion/irritation:	Category 2, H315	Eye damage/irritation:	Category 1, H318
Skin sensitization:	Category 1, H317	Acute Toxicity (Dermal):	Category 4, H312
Aquatic Hazard (Chronic):	Category 1, H410	Aquatic Hazard (Acute):	Category 1, H400

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:



SIGNAL WORDS:

Danger!

HAZARD STATEMENTS:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

H318 Causes serious eye damage.

H312 Harmful in contact with skin.

H400 Very toxic to aquatic life.

PRECAUTIONARY STATEMENTS:

PREVENTION: P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash hands 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.
P273 Avoid release to the environment.
P280 Wear protective gloves, clothing, and eye/face protection.

RESPONSE: P301+P330+P331+P312 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call POISON CENTER and/or doctor if you feel unwell.
P303+P361+P364+P353+P352 IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash before reuse. Rinse skin with water/shower. Wash with plenty of soap and water.
P312 Call a POISON CENTER and/or doctor if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical attention.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER and/or doctor.
 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

See toxicological information (section 11)

General Information: Read entire MSDS for a more thorough evaluation of the hazards

3. Composition / Information on Ingredients

Name	CAS Number	%
Fatty Acids, C18-Unsaturated., Dimers, Polymers with Triethylenetetramine	68082-29-1	60 – 90
Fatty Acids, C18-Unsaturated., Dimers, Polymers with Tetraethylenepentamine	68953-36-6	10 – 20
Ethylene Glycol Monobutyl Ether	111-76-2	1 – 10
Triethylenetetramine	112-24-3	< 3
Tetraethylenepentamine	112-57-2	< 3

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

4. First Aid Measures

Eye Contact:	Check for and remove any contact lenses. Immediately flush eyes for at least 15 minutes with running water. Hold eyelids apart to ensure rinsing of the entire eye surface and lids with water. Get immediate medical attention.
Skin Contact:	In case of contact, wash affected areas with plenty of water, and soap, if available, for several minutes. Remove and clean contaminated clothing and shoes before re-use. Get medical attention if irritation occurs. Chemical burns must be treated promptly by a physician.
Inhalation:	Move exposed person to fresh air. If not breathing, give artificial respiration or oxygen. If breathing is difficult, transport to medical care and, if available, give supplemental oxygen. Loosen tight clothing such as a collar, tie, belt, or waistband. Get immediate medical attention.
Ingestion:	Wash out mouth with water. If swallowed dilute by giving two (2) glasses water to drink. Do not induce vomiting until direct to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Note to physician:	No specific treatment. Treat symptomatically. Call poison control center if large quantities were ingested. In case of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-Fighting Measures

Flash point:	>93°C (>199.4°F) closed cup
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds, nitrogen oxides, other oxides, low molecular weight hydrocarbons, nitric acid, nitrosamine, and ammonia gas. Burning may produce noxious and toxic fumes.
Extinguishing Media:	Carbon dioxide, alcohol-resistant foam, dry chemical, dry sand, limestone powder, water spray as suitable for the surrounding fire.
Special Exposure Hazards:	Promptly isolate the scene by removing all persons from the vicinity of the fire. No actions shall be taken involving any personal risk or without suitable training.
Special Protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal Precautions:	No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering area. Do not
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touch or walk through spilled material. Avoid breathing vapor or mist and provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental

Precautions:

Methods of Clean Up:

Avoid dispersal of spilled material and runoff that leads to contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution. Stop leak if without risk. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Move containers from spill area. Approach spill from up wind if possible. Prevent spill from entering sewers, rivers and other water courses, basements, or confined areas. Wash into effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite, or diatomaceous earth) and place in container for disposal according to local regulations. Dispose of only using a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information.

7. Handling and Storage

Handling: Wear appropriate personal protective equipment (see Section 8) when handling. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Eating, drinking, and smoking should be prohibited in areas where chemicals are handled, stored, or processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in processes where this material is used. Keep in the original container or a suitable alternate made from a compatible material. Keep all containers tightly closed when not in use. Empty containers retain product residue and should be disposed of properly. Do not reuse empty containers for other purposes or to hold other materials.

Storage: Store in accordance with local regulations. Store in original containers, at 15°C – 40°C. Keep away from incompatible materials (see Section 10) and food and drink. Keep all containers tightly closed when not in use and tightly re-seal after use. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls / Personal Protection

Tetraethylenepentamine AIHA WEEL – TWA: 1 ppm / 5 mg/m³

Triethylenetetramine AIHA WEEL – TWA: 1 ppm / 6 mg/m³

Ethylene Glycol Monobutyl Ether OSHA – TWA: 50 ppm / 240 mg/m³

ACGIH – TWA: 20 ppm / 97 mg/m³

NIOSH – TWA: 5 ppm / 24 mg/m³

Recommended Monitoring Procedures: If this product contains ingredients with exposure limits, personal, workplace, atmospheric, or biological monitoring may be required to determine the effectiveness of the ventilation system or other control measures and/or to determine whether it is necessary to use respiratory protective equipment. Consider European Standard EN 689 or similar industry or governmental guidelines for appropriate methods for the assessment of exposure by inhalation to chemical agents and/or hazardous substances.

Engineering measures: No special ventilation requirements are necessary for this product. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure below the recommended or statutory limits.

Hygiene measures: Wash hands, forearms, and face thoroughly after handling any chemical products, before eating, smoking, and using the lavatory and at the end of the work period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Respiratory: A respiratory protection program in compliance with 29CFR1910.134, or other applicable regulatory standard must be followed whenever exposure limits may be exceeded. If engineering controls are not feasible, or if inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Wear neoprene, nitrile rubber or other suitable impervious gloves; consider European Standard EN374 or similar industry or governmental guidelines. Consider the parameters specified by the glove manufacture and check gloves during use to ensure they are retaining their protective properties. Gloves selected must have a breakthrough rating appropriate for the work shift. If a risk assessment indicates that it is necessary, gloves should always be worn when handling chemical products.

Eyes: When a risk assessment indicates, safety eyewear complying with an approved standard, such as OSHA Standard 29CFR1910.133 or European Standard EN166, should be used to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, at a minimum use chemical splash goggles. If significant splash hazard may occur, consider using a full-face shield.

Skin: Personal Protective equipment for the body should be selected based on the task being performed and the risks involved. Typical protective equipment includes non-absorbent lab coats, disposable protective sleeves, coats, or whole-body suits. Consider CFR1910.132 and CFR1910.136 for OSHA approved standards on protective clothing and footwear. Consider seeing a safety specialist to determine the appropriate level of protection for your task.

Environmental Exposure Controls: Emissions from ventilation or work processes should be checked to ensure they comply with the requirements of environmental regulations. In some cases, fume scrubbers, filters, or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Appearance:	Yellow to amber liquid	Odor	ammoniacal
Boiling Point:	>200°C (392°F)	Freezing Point:	<15°C
Flash Point:	>93°C (>199.4°F) closed cup	pH:	Not determined
Auto-ignition Temperature:	Not determined	Flammable Limits:	Not determined
Vapor Pressure:	< 1 mm Hg at 20°C (68°F)	Water Solubility:	Minor
Specific Gravity:	0.965	Vapor Density:	>1 (Air = 1)
Evaporation Rate:	<1 (butyl acetate =1)	VOC:	Not determined
Viscosity:	~9,000 cP		

10. Stability and Reactivity

Chemical Stability: This product is stable, under normal conditions of storage and use, hazardous reactions will not occur.

Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Product slowly corrodes copper, aluminum, zinc, and galvanized surfaces.

Conditions to Avoid: High temperatures and exposure to strong oxidizing agents, acids, bases, sodium hypochlorite, and bulk epoxy resins. Nitrosamines may be formed when the product comes in contact with nitrous acid, nitrites, or atmospheres with high nitrous oxide concentrations.

Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds, nitrogen oxides, other oxides, low molecular weight hydrocarbons, nitric acid, nitrosamine, and ammonia gas. Burning may produce noxious and toxic fumes.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Triethylenetetramine	-	LC0 Inhalation Vapor	Not available	may cause allergic response
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	550 mg/kg
	OECD 420 Acute Oral Toxicity – Fixed Dose	LD50 Oral	Rat	2,500 mg/kg
Tetraethylenepentamine	-	LD50 Oral	Rat	2,140 mg/kg
	-	LC50 Inhalation Dust/mist	Not available	may cause allergic response
	-	LD50 Dermal	Rabbit	>660 mg/kg

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
Triethylenetetramine	-	Rabbit	Skin – Severe irritant
	-	Rabbit	Eyes – Severe irritant
Tetraethylenepentamine	-	Rabbit	Skin – Severe irritant
	-	-	Eyes – Severe irritant

Sensitizer

Product/Ingredient Name	Test	Species	Result
Product	-	-	Sensitizing to skin

Product/Ingredient Name	Test	Result
No data available		

Conclusion/ Summary: – the weight of scientific evidence indicates that the components of this product are not genotoxic

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP, or OSHA

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
No data available					

Teratogenicity

Product/Ingredient Name	Test	Species	Results
No data available			

Potential Acute Health Effects

Inhalation: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: May cause burns to the mouth, throat, and stomach.

Skin Contact: Causes severe skin burns. Harmful in contact with skin. May cause an allergic skin reaction.

Eye Contact: Causes serious eye damage.

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
No Data Available				

General: Once sensitized, an allergic reaction may occur when subsequently exposed to very low levels

Target Organs: May cause damage to organs through prolonged or repeated exposure: (skin, respiratory tract, kidneys, liver).

Carcinogenicity: No known significant effects or critical hazards

Mutagenicity: No known significant effects or critical hazards

Teratogenicity: No known significant effects or critical hazards

Developmental Effects: No known significant effects or critical hazards

Fertility Effects: No known significant effects or critical hazards

12. Ecological Information

Environmental Effects: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic Ecotoxicity

Product/Ingredient Name	Test	Endpoint	Exposure	Species	Result
Triethylenetetramine	-	Acute EC50	72 hours Static	Algae	2.1 mg/L
	OECD 202 Daphnia Sp. Acute Immobilization Test	Acute EC50	48 hours Static	Daphnia	12 mg/L
	-	Acute IC50	3 hours Static	Bacteria	680 mg/L
	OECD 203 Fish, Acute toxicity test	Acute LC50	96 hours Static	Fish	570 mg/L
Tetraethylenepentamine	-	Acute LC50	96 hours	Fish	420 mg/l
	-	Acute EC50	48 hours	Daphnia	24 mg/l
	-	Acute IC50	72 hours	Algae	2 mg/l

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
Triethylenetetramine			No data, but expected to readily biodegrade at a slow rate in the environment
Tetraethylenepentamine			No data, but expected to readily biodegrade at a slow rate in the environment

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
No data available			

Bioaccumulative potential

Product/Ingredient Name	Log P _{ow}	BCF	Potential
Triethylenetetramine	-1.66 to -1.4	-	low

Other adverse effects: No known significant effects or critical hazards

Other information: BOD5: Not determined COD: Not Determined TOC: Not determined

13. Disposal Consideration

Waste Disposal Method: Disposal of this products, solutions, and by-products should at all times comply with the requirements of environmental and waste disposal legislation and any regional or local authority requirements. Dispose of surplus, non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed on untreated to the sewer system unless this is complaint with all applicable laws and regulations. Incineration by an approved and licensed contractor is the most common disposal method. Packaging materials that and absorbents containing the product can typically be landfilled or incinerated. Contact local authorities to determine the proper means of disposal in your area.

14. Transport Information

DOT (US) Classification: Not regulated for transportation purposes under 49CFR in non-bulk (less than 450L) when transported by motor vehicle, rail car, or aircraft.

TDG (Canadian) Classification: Not regulated for transportation purposes when transported by road or rail.

IATA – small package sizes: Container sizes with net contents of ≤ 5 L (for liquids) or ≤ 5 kg (for solids) are not subject to dangerous good regulations per special provision A197, provided that the packagings meet the general good quality packagings provisions of 5.0.2.4.1, 5.0.2.6.1.1., and 5.0.2.8. If special revision A197 is not applicable due to operator, state, or other variations then the same sizes can be shipped as Limited Quantity using packaging instruction Y964 as long as the shipment is complaint with all applicable operator variations. Environmentally hazardous substances markings and UN boxes are not required when shipping using the Limited Quantity exemption and packaging instruction Y964.

IMDG (Ocean Shipments) – small package sizes: under IMDG Code 2.10.2.7, Marine pollutants with the shipping names "UN 3077 Environmentally hazardous substance, solid, n.o.s." and "UN 3082 Environmentally hazardous substance, liquid, n.o.s." shipped in quantities of ≤ 5 L per package are not subject to regulation other than specific packaging provisions.

IATA & IMDG shipments of packages sizes greater than 5 Liters

ID Number:	UN3082	Label:	Marine Pollutant
Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Fatty acid amidoamine resin)		
Hazard Class:	9	Packing Group:	PGIII

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This product is a hazardous chemical under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III: Section 304 - CERCLA: This product does contain one or more chemicals regulated under Section 304 as extremely hazardous substance(s) for emergency release notification ("CERCLA" List)

Ethylene Glycol Monobutyl Ether (CAS 111-76-2)

SARA Title III: Section 311/312 - Hazard Communication Standard (HCS): Immediate (acute) health hazard

Delayed (chronic) health hazard.

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does contain one or more toxic chemicals that are subject to routine annual Toxic Chemical Release Reporting under section 313 (40 CFR 372):

Ethylene Glycol Monobutyl Ether (CAS 111-76-2)

TSCA Section 8(b) - Inventory Status: All chemical(s) comprising this product are listed on the TSCA inventory.

TSCA Section 12(b) - Export Notification: This product does not contain chemicals which are subject to Section 12(b) export notification.

State Regulations:

California Proposition 65: This product does not expose you to chemicals known to the State of California to cause cancer or chemicals known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

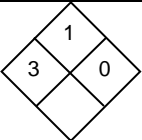
International Regulations:

WHMIS: Class D-2A: Material causing other toxic effects
Class D-2B: Material causing other toxic effects

International Lists:

Australia Inventory (AICS):	all components are listed or exempt	Malaysia Inventory (EHS register):	not determined
Canadian Inventory (CEPA-DSL):	all components are listed or exempt	Philippines Inventory (PICCS):	all components are listed or exempt
Japan Inventory:	all components are listed or exempt	Taiwan Inventory (CSNN):	not determined
Korea Inventory:	all components are listed or exempt		

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA		National Fire Protection Association (USA):	
Health	3		
Flammability	1		
Physical Hazards	0		
Personal Protection	C*		

*suggested minimum personal protection equipment. End user must determine appropriateness of these suggestions for their applications and usage conditions.

Reason Issued: update
Prepared By: Preston White
Approved By: Chris Meyer Title: Vice President

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THIS PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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