

# Safety Data Sheet



## 1. Product and Company Identification

Product Name: **EpoPro® 213-1B**  
Material Uses: Adhesive, sealing, and coating compound  
(M)SDS#: 213-1B-20180416  
Validation Date: April-16-2019  
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 1, H314	Eye damage/irritation:	Category 1, H318
Skin sensitization:	Category 1, H317	Acute Toxicity(dermal):	Category 4, H312
Reproductive Toxicity:	Category 1B, H360	Aquatic Hazard (Acute):	Category 2, H401
Aquatic Hazard (Chronic):	Category 2, H411		

### GHS LABEL ELEMENTS:

#### HAZARD SYMBOLS:



**SIGNAL WORDS:** Danger!

#### HAZARD STATEMENTS:

H315 Causes severe skin burns and eye damage.	H319 Causes serious eye damage.
H317 May cause an allergic skin reaction.	H312 Harmful in contact with skin
H360 May damage fertility or the unborn child.	H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.	

### 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+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call POISON CENTER and/or physician.  
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 physician if you feel unwell.  
 P333+P313 If skin irritation or rash occurs: Get medical attention.  
 P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call POISON CENTER and/or physician.  
 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 POISON CENTER and/or physician.  
 P308+P313 IF exposed or concerned: Get medical attention.  
 P391 Collect spillage.

**STORAGE:** 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	%
Tetraethylenepentamine	112-57-2	30 – 60
Fatty Acids, C18-Unsaturated., Dimers, Polymers With polyethylenepolyamines	68082-29-1	25 – 55
Triethylenetetramine, propoxylated	26950-63-0	1 - 15
Triethylenetetramine	112-24-3	1 - 15
1-(2-Aminoethyl) piperazine (AEP)	140-31-8	1 - 5
4,4' Isopropylidenediphenol	80-05-7	< 1
4-Nonylphenol, branched	84852-15-3	< 1
Benzyl Alcohol	100-51-6	< 1
Benzyl dimethylamine	103-83-3	< 1

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. If medical care is not promptly available continue to irrigate for one hour.
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 immediate medical attention. If medical care is not promptly available, continue to irrigate for one hour.
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. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, prevent aspiration of vomit. Turn victim's head to the side. Get immediate medical attention.
Note to physician:	Application of corticosteroid cream has been effective in treating skin irritation. Treat symptomatically. Call poison control center if large quantities were ingested.

### 5. Fire-Fighting Measures

Flash point:	>93°C (>199.4°F) closed cup
Hazardous Thermal	Decomposition products may include the following materials: carbon dioxide, carbon

Decomposition Products:	monoxide, ammonia gas, phenolics, nitrogen oxide gases, nitric acid, nitrosamines, low molecular weight hydrocarbons, metal oxides and other oxides. Burning produces noxious and toxic fumes.
Extinguishing Media:	Carbon dioxide, foam, dry chemical, water spray as suitable for the surrounding fire. Do not use high volume water jet.
Special Exposure Hazards:	Promptly isolate the scene by removing all persons from the vicinity of the fire. Downwind personnel must be evacuated. 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. Do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## 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. 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 or less. 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

Ingredient	Exposure Limits
Tetraethylenepentamine	WEEL – TWA: 1 ppm / 5 mg/m <sup>3</sup>
Triethylenetetramine	WEEL – TWA: 1 ppm / 6mg/m <sup>3</sup>
4,4' Isopropylidenediphenol	<b>Derived No Effect Levels (DNEL):</b> <b>Workers:</b> DNEL (dermal, acute effects, systemic): 1.4 mg/kg bw/day DNEL (inhalation, acute effects, systemic): 10 mg/m <sup>3</sup> DNEL (inhalation, acute effects, local): 10 mg/m <sup>3</sup> DNEL (dermal, chronic effects, systemic): 1.4 mg/kg bw/day DNEL (inhalation, chronic effects, systemic): 10 mg/m <sup>3</sup>

	DNEL (inhalation, chronic effects, local): 10 mg/m <sup>3</sup> <b>Consumers:</b> DNEL (dermal, acute effects, systemic): 0.7 mg/kg bw/day DNEL (inhalation, acute effects, systemic): 5 mg/m <sup>3</sup> DNEL (oral, acute effects, systemic): 0.05 mg/kg bw/day DNEL (inhalation, acute effects, local): 5 mg/m <sup>3</sup> DNEL (dermal, chronic effects, systemic): 0.7 mg/kg bw/day DNEL (inhalation, chronic effects, systemic): 0.25 mg/m <sup>3</sup> DNEL (oral, chronic effects, systemic): 0.05 mg/kg bw/day DNEL (inhalation, chronic effects, local): 10 mg/m <sup>3</sup> <b>Predicted No Effect Concentration (PNEC):</b> PNEC (freshwater) 0.018 mg/l assessment factor = 1 PNEC (freshwater sediments) 2.2 mg/kg sediment dw assessment factor = 10 PNEC (marine water) 0.016 mg/l assessment factor = 1 PNEC (marine sediments) 0.44 mg/kg sediment dw assessment factor = 510 PNEC (sewage treatment plant; STP) 230 mg/l (assessment factor N/A) PNEC (soil) 3.7 mg/kg soil dw assessment factor = 10 PNEC (intermittent release) 0.01 mg/l assessment factor = 100
Benzyl Alcohol	WEEL – TWA: 10 ppm / 44.20 mg/m <sup>3</sup>

**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:	Not determined	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:	Not determined	Water Solubility:	Partially soluble
Specific Gravity:	0.984	Vapor Density:	Not determined
Evaporation Rate:	< 1 (butyl acetate =1)	VOC:	<15 g/ L (estimated)
Viscosity:	~500 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, strong reducing agents, nitrous acid, nitrosating agents, sodium hypochlorite, peroxides, acids, bases, and epoxy resins. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. 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. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
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, ammonia gas, phenolics, nitrogen oxide gases, nitric acid, nitrosamines, low molecular weight hydrocarbons, metal oxides and other oxides. Burning produces noxious and toxic fumes.

## 11. Toxicological Information

### Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Tetraethylenepentamine	-	LD50 Oral	Rat	2,140 mg/kg
	-	LD50 Dermal	Rabbit	> 660 mg/kg
Triethylenetetramine	OECD 401 Acute Oral Toxicity – Fixed Dose	LD50 Oral	Rat	> 1,716 mg/kg
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	> 550 mg/kg
	-	LC50 Inhalation	-	May cause allergic response
1-(2-Aminoethyl) piperazine (AEP)	-	LD50 Oral	Rat	2,108 mg/kg
	-	LD50 Dermal	Rabbit	>880 mg/m <sup>3</sup>
4,4'-isopropylidenediphenol	-	LD50 Dermal	Rat – Male	>3,000 mg/kg
	-	LC50 Inhalation Dust/mist	Rat – Male, Female	>170 mg/m <sup>3</sup>
4-Nonylphenol, branched	-	LD50 Dermal	Rat	2,031 mg/kg
	-	LD50 Oral	Rat	1,604 mg/kg
Benzyl Alcohol	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat-Male	1,620 mg/kg
	OECD 403 Acute Inhalation Toxicity	LC50 Inhalation Dust/mist	Rat	>4178 mg/m <sup>3</sup>
Benzyl dimethylamine	-	LD50 Oral	Rat	265 mg/kg
	-	LD50 Dermal	Rabbit	1660 mg/kg
	-	LC50 Inhalation	Rat	373 ppm

### Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
Tetraethylenepentamine	-	Rabbit	Skin – Severe irritation
	-	-	Eyes – Severe irritation
Triethylenetetramine	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin – Severe irritation
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Severe irritation
1-(2-Aminoethyl) piperazine (AEP)	-	Rabbit	Skin – Corrosive
	-	Rabbit	Eyes – Corrosive
4,4'-isopropylidenediphenol	Draize Test	Rabbit	Skin – Severe irritant
	Draize Test	Rabbit	Eyes – Severe irritant
4-Nonylphenol, branched	-	Rabbit	Skin – Corrosive
	-	Rabbit	Eyes – Corrosive
Benzyl Alcohol	-	Rabbit	Skin – Slight Irritant
	-	Rabbit	Eyes – Irritant
Benzyl dimethylamine	-	Rabbit	Skin – Severe irritant
	-	Rabbit	Eyes – Severe irritant

### Sensitizer

Product/Ingredient Name	Test	Species	Result
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Tetraethylenepentamine	-	-	Skin - Sensitizing
Triethylenetetramine	-	Skin / Guinea Pig	Strong sensitizing potential
1-(2-Aminoethyl) piperazine (AEP)	OECD 406 Skin Sensitization	Skin / Guinea pig	May cause sensitization by skin contact
4,4'-isopropylidenediphenol	OECD 429 Skin Sensitization: local lymph node assay	Skin / Mouse	Not sensitizing
4-Nonylphenol, branched	-	Skin / Guinea Pig	Not sensitizing
Benzyl Alcohol	-	Skin / Guinea Pig	Not sensitizing
Benzyl dimethylamine	-	Skin / Guinea Pig	Not sensitizing

#### Mutagenicity

Product/Ingredient Name	Test	Result
Triethylenetetramine	OECD Test Guideline 482 – In vitro, Concentration: 0 – 200 µg/l	negative
	OECD Test Guideline 474 – In vivo, Dose: 0 – 600 mg/kg, Intraperitoneal injection	negative
1-(2-Aminoethyl) piperazine (AEP)	Hamster ovary	Negative
	Mouse- male and female	Negative
4,4'-isopropylidenediphenol	Experiment – invitro, bacteria, metabolic activation +/-	Negative
	Experiment – in vivo, mammalian-animal	Negative
4-Nonylphenol, branched	Animal testing	Possible mutagen
	Bacterial and Mammalian cell cultures	Negative
Benzyl Alcohol	Experiment – In vitro, mammalian-animal, metabolic activation +/-	Positive
	Experiment – In vitro, mammalian-animal, somatic cell	Negative
	Experiment – In vitro, mammalian-animal, germ cell somatic	Negative
	Experiment – In vivo, Insect	Negative
	Experiment – In vivo, mammalian-animal, somatic	Negative
Benzyl dimethylamine	Ames test	Negative

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

#### Carcinogenicity

Product/Ingredient Name	Test	Species	Dose	Exposure	Result/Result type
Triethylenetetramine	OECD Test Guideline 451	Mouse-Male	42 mg/kg (Dermal)	3 days per week	Negative-Dermal
	OECD Test Guideline 451	Mouse-Male	16.8 mg/kg (Dermal)	104 weeks; 3 days per week	Negative-Dermal
4,4'-isopropylidenediphenol	-	Rat-Male, Female	-	103 weeks; 7 days per week	Negative-Oral-NOAEL
Benzyl Alcohol	-	Rat-Male, Female	-	103 weeks	Negative-Oral

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
4,4'-isopropylidenediphenol	OECD 416 Two-Generation Reproduction Toxicity Study	Rat – Male, Female	Positive	Negative	Negative
4-Nonylphenol, branched	Suspected of damaging fertility or the unborn child.				
Benzyl Alcohol	Mouse – Female; Oral: 550 mg/kg NOAEL, 10 days; 7 days per week				
	Mouse – Female; Oral: 750 mg/kg LOAEL, 8 days; 7 days per week				

#### Teratogenicity

Product/Ingredient Name	Test	Species	Results
Triethylenetetramine	OECD Test Guideline 414 (Oral NOEL > 750 mg/kg of bodyweight)	Rat	No teratogenic effects
	OECD Test Guideline 414 (Dermal NOEL 125 mg/kg of bodyweight)	Rabbit	No teratogenic effects
4,4'-isopropylidenediphenol	OECD 416 Two-Generation Reproduction Toxicity Study	Rat – Female	Negative – Oral
4-Nonylphenol, branched	Suspected of damaging fertility or the unborn child.		

#### Potential Acute Health Effects

Inhalation: Can cause severe eye, skin and respiratory tract burns. May be harmful if inhaled.  
Ingestion: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.  
Skin Contact: Causes skin burns. Harmful in contact with skin. May cause an allergic skin reaction.  
Eye Contact: Causes eye burns. May cause blindness. Severe eye irritation.

#### Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
Triethylenetetramine	Ingestion, 26 weeks, 7 days of exposure	Subchronic NOAEL	Rat – Male, Female	50 mg/kg/d
4,4'-isopropylidenediphenol	OECD 407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Sub-chronic NOAEL oral	Rat – Male, Female	600 mg/kg
	-	Sub-chronic NOEC Inhalation Dusts/mists	Rat – Male, Female	10 mg/m <sup>3</sup>

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 (liver, kidney, respiratory system, blood); reproductive effects.  
Carcinogenicity: No known significant effects or critical hazards  
Mutagenicity: No known significant effects or critical hazards  
Teratogenicity: May damage fertility or the unborn child.  
Developmental Effects: May damage fertility or the unborn child.  
Fertility Effects: May damage fertility or the unborn child.

## 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 EC50	3 hours Static	Bacteria	680 mg/L
	OECD 203 Fish, Acute toxicity test	Acute LC50	96 hours Static	Fish	570 mg/L
	-	Chronic EC10	21 days Static	Daphnia	1.9 mg/l
1-(2-Aminoethyl) piperazine (AEP)	-	Acute LC50	96 hours	Fish	2,190 mg/l
	OECD Test Guideline 202	Acute EC50	48 hours	Daphnia	58 mg/l
	OECD Test Guideline 201	Acute EC50	72 hours	Algae	495 mg/l
	Respiration inhibition	Acute EC50	2 hours	Bacteria	511 mg/l
4,4'-isopropylidenediphenol	-	Acute EC50	96 hours	Algae	2.5 to 3.1 mg/l
	-	Acute EC50	48 hours	Daphnia	1.0 to 16.0 mg/l
	-	Acute LC50	96 hours	Fish	7.5 mg/l
	-	Acute LC50	96 hours	Fish	4.6 mg/l
	EPA OPPTS	Chronic NOEC	444 days flow-through	Fish	0.016 mg/l
4-Nonylphenol, branched	-	Acute LC50	96 hours	Fish	0.14 mg/l
	-	Acute EC50	48 hours	Daphnia	0.035 mg/l
	-	Acute LC50	72 hours	Algae	0.056 mg/l
Benzyl Alcohol	ISO 8192	Acute EC50	24 hours	Bacteria	390 mg/l
	OECD Test Guideline 202	Acute EC50	48 hours	Daphnia	230 mg/l
	OECD Test Guideline 201	Acute IC50	72 hours	Algae	770 mg/l
	Mortality	Acute LC50	96 hours	Fish	460 mg/l
	OECD Test Guideline 201	Chronic NOEC	72 hours	Algae	310 mg/l
	OECD Test Guideline 211	Chronic NOEC	21 days	Daphnia	51 mg/l
Benzyl dimethylamine	-	Acute LC50	96 hours	Fish	35.8 – 39.9 mg/l
	-	Acute LC50	96 hours	Fish	10 – 22 mg/l

### Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
Triethylenetetramine	OECD Test Guideline 301D	162 days	0 %
1-(2-Aminoethyl) piperazine (AEP)	OECD Test Guideline 301F	28 days	0 %
4,4'-isopropylidenediphenol	-	28 days	93%
4-Nonylphenol, branched	-	28 days	78%
Benzyl Alcohol	OECD Test Guideline 301A	21 days	95 to 97%
	OECD Test Guideline 301C	14 days	92 to 96%

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
Triethylenetetramine	-	-	Not Readily
1-(2-Aminoethyl) piperazine (AEP)	-	-	Not readily
4,4'-isopropylidenediphenol	-	-	Readily
4-Nonylphenol, branched	-	-	Readily
Benzyl Alcohol	-	-	Readily

### Bioaccumulative potential

Product/Ingredient Name	Log P <sub>ow</sub>	BCF	Potential
Triethylenetetramine	-2.65	-	-
1-(2-Aminoethyl) piperazine (AEP)	-1.48	-	-
4,4'-isopropylidenediphenol	3.4	73	low
4-Nonylphenol, branched	4.8	740	high
Benzyl Alcohol	1.05	1.37	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:** Not regulated for transportation purposes under IATA

### 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):** Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e. GHS). Please refer to section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

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

4,4'-Isopropylidenediphenol (CAS 80-05-7), < 1 %

4-Nonylphenol, branched (CAS 84852-15-3), < 1 %

**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 contain one or more chemicals which are subject to Section 12(b) export notification.

4-Nonylphenol, branched (CAS 84852-15-3), < 1 %

**TSCA Chemical Action Plan (40CFR721):** This product contains 4-Nonylphenol which is subject to TSCA/SNUR requirements, Section 5; any use other than as an intermediate or as an epoxy cure catalyst would constitute a significant new use requiring notification to EPA.

#### State Regulations:

**California Proposition 65:** ⚠ **WARNING:** This product can expose you to chemicals including Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://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):** This product does contain one or more chemicals that are listed:

4,4'-Isopropylidenediphenol (CAS 80-05-7), < 1 %

4-Nonylphenol, branched (CAS 84852-15-3), < 1 %

**Reach Annex XVII (Restrictions on the manufacture, placing on the market & use of certain dangerous substances, mixtures, and articles):** This product does contain one or more chemicals that are listed:

4,4'-Isopropylidenediphenol (CAS 80-05-7), < 1 %

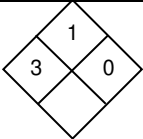
4-Nonylphenol, branched (CAS 84852-15-3), < 1 %

**WHMIS:** Class D-2A: Material causing other toxic effects  
Class D-2B: Material causing other toxic effects  
Class E: Corrosive material

**International Lists:**

Australia Inventory (AICS): all components are listed or exempt  
Canada Inventory (CEPA-DSL): all components are listed or exempt  
Japan Inventory: all components are listed or exempt  
Korea Inventory: all components are listed or exempt  
Philippines Inventory (PICCS): all components are listed or exempt  
European Inventory (EINECS): 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

**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.