Safety Data Sheet

1. Product and Company Identification

Product Name: HRD 22
Material Uses: High Performance Epoxy Hardener for Bonding & Encapsulation
(M)SDS#: 22-20180118
Validation Date: January-18-2018
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 1B, H314	Eye damage/irritation:	Category 1, H318
Skin sensitization:	Category 1, H317	Reproductive Toxicity:	Category 2, H361
Acute Toxicity (Oral):	Category 4, H302	Acute Toxicity (dermal):	Category 4, H312
Specific Target Organ Toxicity - Single Exposure:	Category 2, H371	Specific Target Organ Toxicity - Repeated Exposure:	Category 1, H372
Respiratory sensitization:	Category 1, H334	Aquatic Hazard, chronic	Category 1, H410
Aquatic Hazard, acute	Category 1, H400		

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:

SIGNAL WORDS: Danger!

HAZARD STATEMENTS:

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H302 Harmful if swallowed.
H371 Causes damage to organs (eyes, central nervous system, nervous system).
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H400 Very toxic to aquatic life.
H318 Causes serious eye damage.
H361 Suspected of damaging fertility or the unborn child.
H312 Harmful in contact with skin.
H372 Causes damage to organs through prolonged or repeated exposure (skin, kidneys, lungs, liver).
H410 Very 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 mists.
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.

P271 Use only outdoors or in a well-ventilated area.
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.
P281 Use personal protective equipment as required.
P284 [In case of inadequate ventilation] wear respiratory 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 POISION CENTER or doctor/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 a POISON CENTER or doctor/physician.
P342+P311 If experiencing respiratory symptoms: call a POISON CENTER or doctor/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 a POISON CENTER or doctor/physician.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
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	%
1-(2-Aminoethyl) piperazine (AEP)	140-31-8	30 – 60
Polyoxypropylenediamine	9046-10-0	30 – 60
Diethylenetriamine	111-40-0	1 – 10
4,4'-isopropylidenediphenol	80-05-7	1 – 10
4-Nonylphenol, branched	84852-15-3	1 – 10
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-	25322-69-4	1 – 10

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 immediate medical attention.

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. In case of inhalation of decomposition products in a fire, symptoms may be delayed.The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion:	Wash out mouth with water. If swallowed dilute by giving two (2) glasses water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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:	>115°C (>239°F)
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds, metal oxides and other oxides, ammonia gas.
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. Do not allow run-off from fire fighting to enter drains or water courses. Use of water may result in the formation of very toxic aqueous solutions. In a fire or if heated, a pressure increase will occur, and the container may burst.
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. Avoid exposure during pregnancy. 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 10°C – 40°C (50°F – 104°F). 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

Diethylenetriamine	ACGIH TLV (Skin) – TWA: 4.2 mg/m^3 (1ppm) NIOSH REL – TWA: 4 mg/m^3 (1ppm) OSHA PEL – TWA: 4 mg/m^3 (1ppm)
4,4'-isopropylidenediphenol	ACGIH TLV – TWA: 5 mg/m^3 OSHA PEL – TWA: 5 mg/m^3 (respirable particulate) 15 mg/m^3(total dust)

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-	US WEEL – TWA: 10 mg/m^3

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 googles. 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:	Not determined
Flash Point:	>115°C (>239°F)	pH:	Not determined
Auto-ignition Temperature:	Not available	Flammable Limits:	Not determined
Vapor Pressure:	< 0.05 mm Hg at 20°C (68 °F)	Water Solubility:	Minor
Specific Gravity:	0.986	Vapor Density:	>1 (Air = 1)
Evaporation Rate:	<1 (butyl acetate =1)	VOC:	<20 g/ L (estimated)
Viscosity:	~50 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, sodium hypochlorite, and bulk epoxy resins. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
Hazardous Decomposition	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Other Hazards: Heating this substance above 150°C in the presence of air may cause slow oxidative decomposition; above 260°C polymerization may occur. Fumes and vapors from thermal and chemical decompositions vary widely in composition and toxicity.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
1-(2-Aminoethyl) piperazine (AEP)	-	LD50 Oral	Rat	2,108 mg/kg
	-	LD50 Dermal	Rabbit	>880 mg/m^3
Polyoxypropylenediamine	OECD 403 Acute Inhalation Toxicity	LC0 Inhalation Vapor	Rat – Male & Female	>0.74 mg/l
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat – Male & Female	2,980 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat – Female	2,885 mg/kg
Diethylenetriamine	-	LD50 Oral	Rat	1,080 mg/kg
	-	LD50 Dermal	Rabbit	1,090 mg/kg
4,4'-isopropylidenediphenol	-	LC50 Inhalation Dust/mist	Rat – Male, Female	>170 mg/m^3
	-	LD50 Dermal	Rat – Male	>3,000 mg/kg
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat – Male, Female	>2,000 – 5,000 mg/kg
4-Nonylphenol, branched	-	LD50 Dermal	Rat	2,031 mg/kg
	-	LD50 Oral	Rat	1,604 mg/kg

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
1-(2-Aminoethyl) piperazine (AEP)	-	Rabbit	Skin – Corrosive
	-	Rabbit	Eyes – Corrosive
Polyoxypropylenediamine	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin – Corrosive
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Corrosive
Diethylenetriamine	-	Rabbit	Skin – Moderate irritant
4,4'-isopropylidenediphenol	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin – Non-irritant
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Severe irritant
4-Nonylphenol, branched	Draize Test	Rabbit	Skin – Severe irritant
	Draize Test	Rabbit	Eyes – Severe irritant
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-	-	Rabbit	Skin – Non-irritant
	-	Rabbit	Eyes – Non-irritant

Sensitizer

Product/Ingredient Name	Test	Species	Result
1-(2-Aminoethyl) piperazine (AEP)	OECD 406 Skin Sensitization	Skin / Guinea pig	May cause sensitization by skin contact
Diethylenetriamine	-	-	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

Mutagenicity

Product/Ingredient Name	Test	Result
1-(2-Aminoethyl) piperazine (AEP)	Hamster ovary	Negative
	Mouse- male and female	Negative
Polyoxypropylenediamine	Experiment – invitro, bacteria, metabolic activation +/-	Negative
	Experiment – invitro, mammalian-animal, somatic cells, metabolic activation +/-	Negative
	Experiment – invivo, mammalian-animal	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

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
4,4'-isopropylidenediphenol	-	Rat-Male, Female	-	103 weeks; 7 days per week	Negative-Oral-NOAEL

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 or:

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
Polyoxypropylenediamine	OECD 21 Reproduction / Developmental Toxicity Screening Test	Rat – Male, Female	Negative	Negative	Negative
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.				

Teratogenicity

Product/Ingredient Name	Test	Species	Result/Result type
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: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: May cause burns to mouth, throat, and stomach. Harmful if swallowed.

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

Eye Contact: Causes serious eye damage. May cause blindness. Severe eye irritation.

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
Polyoxypropylenediamine	OECD 411 Subchronic Dermal Toxicity: 90-day Study	Sub-chronic NOAEL - Dermal	Rat – male, female	250mg /kg / day
	OECD 407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Sub-chronic NOAEL - Oral	Rat – male, female	239mg /kg / day
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^3

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

Target Organs: Causes damage to organs through prolonged or repeated exposure: (skin, kidneys, lungs, liver).

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: Suspected of damaging fertility or the unborn child.

Developmental Effects: Suspected of damaging fertility or the unborn child.

Fertility Effects: Suspected of damaging fertility or the unborn child.

12. Ecological Information

Environmental Effects: Very 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
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
Polyoxypropylenediamine	OECD 202 Daphnia Sp. Acute Immobilization Test	Acute EC50	48 hours Static	Daphnia	80 mg/l
	ISO	Acute EC50	48 hours Static	Daphnia	418.34 mg/l
	OECD Fish, Acute Toxicity Test	Acute EC50	96 hours Semi-static	Fish	>15 mg/l
	OECD 201 Algae, Growth Inhibition Test	Acute ErC50	72 hours Static	Algae	15 mg/l
	OECD Fish, Acute Toxicity Test	Acute LC50	96 hours Static	Fish	772.14 mg/l
	OECD 208 Seedling Emergence and Seedling Growth Test	Chronic EC50	3 hours Static	Bacteria	750 mg/l
	OECD 201 Algae, Growth Inhibition Test	Chronic NOEC	72 hours Static	Algae	0.32 mg/l
	OECD 209 Activated Sludge, Respiration Inhibition test	Chronic NOEC	3 hours Static	Bacteria	310 mg/l
	ISO 10253:2006- Marine algal growth inhibition test	Chronic NOECb	72 hours Static	Algae	100 mg/l

Diethylenetriamine	-	Acute LC50	48 hours	Daphnia	16 mg/l
	-	Acute LC50	48 hours	Flea	53.5 mg/l
	-	Acute EC50	72 hours	Algae	1,164 mg/l
	-	Acute EC50	96 hours	Algae	345.6 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

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
1-(2-Aminoethyl) piperazine (AEP)	OECD Test Guideline 301F	28 days	0 %
Polyoxypropylenediamine	OECD 301B Ready Biodegradability	28 days	0 %
4,4'-isopropylidenediphenol	-	28 days	1 to 2%

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
1-(2-Aminoethyl) piperazine (AEP)	-	-	Not readily
Polyoxypropylenediamine	Fresh water 360 days	0.02 to 0.03 days	Not readily
4,4'-isopropylidenediphenol	-	-	Not readily
4-Nonylphenol, branched	-	-	Not readily

Bioaccumulative potential

Product/Ingredient Name	Log P_{ow}	BCF	Potential
1-(2-Aminoethyl) piperazine (AEP)	-1.48	-	-
Polyoxypropylenediamine	1.34	-	low
Diethylenetriamine	-1.3	0.65 – 2.80	low
4,4'-isopropylidenediphenol	3.4	73	low
4-Nonylphenol, branched	4.8	740	High

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 always 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: Non-Bulk **Label:** Corrosive

Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine, Diethylenetriamine)

Hazard Class: 8 **ID Number:** UN2735 **Packing Group:** PGII

IATA: Non-Bulk **Label:** Corrosive

Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine, Diethylenetriamine)

Hazard Class: 8 **ID Number:** UN2735 **Packing Group:** PGII

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 contain a toxic chemical for routine annual Toxic Chemical Release Reporting under section 313 (40 CFR 372).

4,4'-isopropylidenediphenol (CAS 80-05-7)

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)

State Regulations:

California Proposition 65: This product does contain a chemical currently on the California list of Known Carcinogens and Reproductive Toxins.

Ingredient	Cancer	Reproductive
4,4'-isopropylidenediphenol	No	Yes

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), < 3%
4-Nonylphenol, branched (CAS 84852-15-3), 1 – 10%

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), < 3%
4-Nonylphenol, branched (CAS 84852-15-3), 1 – 10%

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

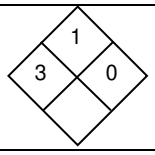
International Lists:

Australia Inventory (AICS):	all components are listed or exempt	Malaysia Inventory (EHS register):	not determined
Canadian Inventory (CEPA-DSL):	all components are listed or exempt	New Zealand Inv. of Chem. (NZIoC):	all components are listed or exempt
China Inventory (IECSC):	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	
Health	3
Flammability	1
Physical Hazards	0
Personal Protection	C*

National Fire Protection Association (USA):



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

Reason Issued: update
Prepared By: Chris Meyer **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.