FREEMAN Manufacturing & Supply Company

Safety Data Sheet

Freeman 9600 Resin

Section 1 Identification

Product Identifiers

Product name: Freeman 9600 Resin

Relevant Identified uses of the Substance or Mixture and uses Advised Against

Identified uses: Epoxy Infusion System, Part A. For Industrial/Professional Use Only.

Details of the Supplier of the Safety Data Sheet:

Freeman Manufacturing and Supply Company
1101 Moore Road, Avon, OH 44011
Phone (440) 934-1902 **24 Hour Emergency Phone Number: (800) 424-9300**

Section 2 Hazards Identification

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910.1200 (OSHA HCS)

Skin Sensitization, Category 1
Skin Irritation, Category 2
Eye Irritation, Category 2
Acute Toxicity, Inhalation, Category 4
Acute Toxicity, Dermal, Category 4
Acute Toxicity, Oral, Category 4
Hazardous to Aquatic Environment, Chronic, Category 2

GHS Label Elements, Including Precautionary Statements

Hazard Symbols:

Signal Word: Warning

Hazard Statements

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P261 Avoid breathing fumes, mist, vapors and 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.
P273 Avoid release to the environment.
P280 Wear protective gloves, clothing, and eye/face protection.

Section 2 Hazards Identification continued

Response

P301+P312 IF SWALLOWD: Call POISON CETNER and/or doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
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.
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.

Supplemental Information

This is one part of a two-part system. Read and understand the hazard information on part B before using.

Section 3 Composition/Information on Ingredients

Ingredient Name	CAS Number	Concentration (%)
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	25068-38-6	70-90
Aliphatic Epoxy Resin	2425-79-8	10-20

Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

Section 4 First Aid Measures

Description of First Aid Measures

Eye Contact: Immediately flush eyes with plenty of clean water for an extended time, not less than 15 minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Get medical attention immediately.

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

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Dilute with large quantities of water. Get medical attention immediately.

Most Important Symptoms/Effects

Irritation. Sensitization. Pre-existing skin problems may be aggravated by prolonged or repeated contact. Persons with sensitive airways may react to vapors. See Section 11 for additional information.

Indication of Immediate Medical Attention/Special Treatment

Treat symptomatically.

Section 5 Fire-Fighting Measures

Extinguishing Media

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

Unsuitable: Do not use high volume water jet.

Specific Hazards Arising from the Chemical

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

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

Advice for Firefighters

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

Section 6 Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures

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

Environmental Precautions

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

Methods and Material for Containment and Cleanup

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

Section 7 Handling and Storage

Precautions for Safe Handling

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

Conditions for Safe Storage, Including any Incompatibilities

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

Section 8 Exposure Controls/Personal Protection

Control Parameters / Occupational Exposure Limits

Chemical Name	CAS Number	ACGIH-TWA	ACGIH-STEL
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	25068-38-6	Not available	Not available
Aliphatic Epoxy Resin	2425-79-8	Not available	Not available

Engineering Controls

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

Individual Protection Measures including Personal Protective Equipment (PPE)

Respiratory Protection

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

Skin Protection

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

Eye Protection

Full face shield with safety glasses or goggles underneath are required.

Safety Stations

Make emergency eyewash stations and washing facilities available in work area.

General Hygienic Practices

Avoid breathing dust, vapor or mist. Wash thoroughly after handling. Remove contaminated clothing promptly and clean thoroughly before reuse. Avoid contamination of food, beverages, or smoking.

Section 9 Physical and Chemical Properties

Appearance	Viscous amber liquid
Odor	Mild
Odor Threshold	No data available
pH	Not applicable
Melting Point	No data available
Boiling Point	>200°C
Flash Point	>110°C
Evaporation Rate	No data available
Flammability Limits	No data available
Vapor Pressure	<1 mm Hg @ 20°C
Vapor Density	Heavier than air
Relative Density	1.15
Solubility	Negligible
Coefficient: n-Octanol/Water	No data available
Auto-Ignition Temperature	No data available
Decomposition Temperature	>200°C
Viscosity	1,200 cP @ 25°C

Section 10 Stability and Reactivity

Reactivity

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

Chemical Stability

Stable under recommended conditions.

Possibility of Hazardous Reactions

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

Conditions to Avoid

Excessive heat and ignition sources.

Incompatible Materials

Avoid amines, strong acids, strong bases, alcohols, strong oxidizing agents

Hazardous Decomposition Products

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

Section 11 Toxicological Information

Symptoms related to likely routes of exposure

Eye Contact: Causes serious eye irritation.

Skin Contact: Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Repeated or prolonged contact may cause skin irritation and dermatitis.

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

Ingestion: Harmful if swallowed.

Delayed and Immediate Effects from Short- and Long-Term Exposure

Chronic Health Effects: Information is not available.

Acute Toxicity

Chemical Name	LC_{50} Inhalation	LD_{50} Oral (Rat)	LD_{50} Dermal (Rabbit)
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	Not available	>2,000 mg/kg	>2,000 mg/kg
Aliphatic Epoxy Resin	>250 ppm (6 hours)	1,134 mg/kg	1,130 mg/kg

Skin Corrosion/Irritation: Skin Irritation – Category 2

Serious Eye Damage/Irritation: Eye Irritation – Category 2

Respiratory Sensitization: Information is not available.

Skin Sensitization: Skin Sensitization – Category 1

Carcinogenicity: Information is not available.

Reproductive Toxicity: Information is not available.

Germ Cell Mutagenicity: Information is not available.

Specific Target Organ Toxicity (STOT)

Single Exposure: Information is not available.

Repeated Exposure: Information is not available.

Aspiration Hazard: Information is not available.

Section 12 Ecological Information

Toxicity

Chemical Name	Test	Species	Result
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	LC50 (96 hr) EC50 (24 hr)	Fish Daphnia	2.4 mg/L 3.6 mg/L
Aliphatic Epoxy Resin	LC50 (96 hr) EC50 (24 hr)	Fish Daphnia	24 mg/L 75 mg/L

Persistence and Degradability

Chemical Name	Test
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	OECD Derived from OECD 301F (Biodegradation Test)
Aliphatic Epoxy Resin	Not readily biodegradable

Bioaccumulative Potential

Chemical Name	Log P_{ow}	BCF	Potential
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	3.242	31	Low
Aliphatic Epoxy Resin	-0.15	Not available	Not available

Mobility in Soil

Chemical Name	Soil/Water Partition Coefficient (K_{OC})
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	445
Aliphatic Epoxy Resin	Not available

Section 13 Disposal Considerations

Disposal Methods

Dispose of unused contents (incineration) and container in accordance with federal, state, and local regulations. Ensure the use of properly authorized waste management companies, where appropriate. See Section 8 for recommendations on the use of personal protective equipment.

Section 14 Transport Information

UN Number: UN3082
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Epoxy Resin)
Transport Hazard Class
U.S. DOT Hazard Class: Not Regulated
Canada TDG Hazard Class: Not Regulated
Europe ADR/RID Hazard Class: 9
IMDG Code (Ocean) Hazard Class: 9
ICAO/IATA (Air) Hazard Class: 9
Packing Group: III
Environmental Hazards: Marine Pollutant: Yes

Other Information: For surface shipments within the United States: Not regulated.

Section 15 Regulatory Information

U.S. Federal Regulations

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Title III Section 313 Reporting requirements.

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV List of substances subject to authorization, substances of very high concern: None of the components are listed.

Annex XVII Restriction on the manufacture, placing on the market and use of certain dangerous substances, mixtures, and articles: None of the components are listed.

Inventories

Canadian Domestic Substances List (DSL): All intentionally added components are either listed or are otherwise compliant with the regulation

Canadian Non-Domestic Substances List (NDSL): For one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed

European Inventory of Existing Chemical Substances (EINECS): All intentionally added components are either listed or are otherwise compliant with the regulation

European List of Notified Chemical Substances (ELINCS): For one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed

U. S. Toxic Substance Control Act (TSCA): All intentionally added components are either listed or are otherwise compliant with the regulation

Section 16 Other Information

Training Advice

All personnel using/handling this product should be trained in proper chemical handling and the need for and use of engineering controls and protective equipment.

Recommended Uses and Restrictions

This product is intended for industrial/professional use only.

Disclaimer

The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict of liability arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled lab work and must be confirmed by Buyer by testing for its intended conditions of use. 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.

Date of Issue: June 16, 2022

Date of Revision: Not applicable

FREEMAN Manufacturing & Supply Company

Safety Data Sheet

Freeman 9604 Hardener

Section 1 Identification

Product Identifiers

Product name: Freeman 9604 Hardener

Relevant Identified uses of the Substance or Mixture and uses Advised Against

Identified uses: Epoxy Infusion System, Part B. For Industrial/Professional Use Only.

Details of the Supplier of the Safety Data Sheet:

Freeman Manufacturing and Supply Company
1101 Moore Road, Avon, OH 44011
Phone (440) 934-1902 **24 Hour Emergency Phone Number: (800) 424-9300**

Section 2 Hazards Identification

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910.1200 (OSHA HCS)

Eye Damage, Category 1
Skin Corrosion, Category 1B
Skin Sensitization, Category 1B
Reproductive Toxicity, Category 2
Specific Target Organ Toxicity, Single Exposure (Central Nervous System), Category 2
Aspiration Hazard, Category 1
Hazardous to Aquatic Environment, Chronic, Category 3
Hazardous to Aquatic Environment, Acute, Category 2

GHS Label Elements, Including Precautionary Statements

Hazard Symbols:

Signal Word: Danger

Hazard Statements

H304 May be fatal if swallowed or enters airways.
H314 Causes severe skin burns and eye damage.
H317 May cause allergic skin reaction.
H318 Causes serious eye damage.
H361 Suspected of damaging fertility or the unborn child.
H371 May cause damage to organs.
H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mists.
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.

Section 2 Hazards Identification continued

Response

P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

P303+P361+P364+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 or doctor/physician if you feel unwell.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call POISON CENTER.

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.

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.

Supplemental Information

This is one part of a two-part system. Read and understand the hazard information on Part A before using.

Section 3 Composition/Information on Ingredients

Ingredient Name	CAS Number	Concentration (%)
Polyoxypropylenediamine	9046-10-0	70-80
N-(2-aminoethyl)piperazine	140-31-8	5-15
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	5-15
4,4'-isopropylidenediphenol	80-05-7	1-10

Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

Section 4 First Aid Measures

Description of First Aid Measures

Eye Contact: Immediately flush eyes with plenty of clean water for an extended time, not less than 15 minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Get medical attention immediately.

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

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Dilute with large quantities of water. Get medical attention immediately.

Most Important Symptoms/Effects

Burns. Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. Persons with sensitive airways may react to vapors. See section 11 for additional information.

Indication of Immediate Medical Attention/Special Treatment

Treat symptomatically.

Section 5 Fire-Fighting Measures

Extinguishing Media

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

Unsuitable: Do not use high volume water jet.

Specific Hazards Arising from the Chemical

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

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

Advice for Firefighters

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

Section 6 Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures

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

Environmental Precautions

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

Methods and Material for Containment and Cleanup

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

Section 7 Handling and Storage

Precautions for Safe Handling

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

Conditions for Safe Storage, Including any Incompatibilities

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

Section 8 Exposure Controls/Personal Protection

Control Parameters / Occupational Exposure Limits

Chemical Name	CAS Number	ACGIH-TWA	ACGIH-STEL
Polyoxypropylenediamine	9046-10-0	Not available	Not available
N-(2-aminoethyl)piperazine	140-31-8	Not available	Not available
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	Not available	Not available
4,4'-isopropylidenediphenol	80-05-7	5 mg/m^3	5 mg/m^3

Engineering Controls

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

Individual Protection Measures including Personal Protective Equipment (PPE)

Respiratory Protection

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

Skin Protection

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

Eye Protection

Full face shield with safety glasses or goggles underneath are required.

Safety Stations

Make emergency eyewash stations and washing facilities available in work area.

General Hygienic Practices

Avoid breathing dust, vapor or mist. Wash thoroughly after handling. Remove contaminated clothing promptly and clean thoroughly before reuse. Avoid contamination of food, beverages, or smoking.

Section 9 Physical and Chemical Properties

Appearance	Straw-yellow liquid
Odor / Odor Threshold	Ammoniacal / No data available
pH	11
Melting Point	No data available
Boiling Point	>220°C
Flash Point	>99°C
Evaporation Rate	No data available
Flammability Limits	No data available
Vapor Pressure	<1 mm Hg @ 20°C
Vapor Density	No data available
Relative Density	0.95
Solubility	Miscible
Coefficient: n-Octanol/Water	No data available
Auto-Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	20 cP @ 25°C

Section 10 Stability and Reactivity

Reactivity

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

Chemical Stability

Stable under recommended conditions.

Possibility of Hazardous Reactions

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

Conditions to Avoid

Excessive heat and ignition sources.

Incompatible Materials

Avoid strong acids, strong bases, alcohols, strong oxidizing agents

Hazardous Decomposition Products

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

Section 11 Toxicological Information

Symptoms related to likely routes of exposure

Eye Contact: Causes serious eye damage.

Skin Contact: Causes severe skin burns. May cause allergic skin reaction. May be harmful in contact with skin. Repeated or prolonged exposure may cause irritation and dermatitis.

Inhalation: May be fatal if enters airways. May cause respiratory irritation.

Ingestion: May be fatal if swallowed.

Delayed and Immediate Effects from Short- and Long-Term Exposure

Chronic Health Effects: Information is not available.

Acute Toxicity

Chemical Name	LC_{50} Inhalation	LD_{50} Oral (Rat)	LD_{50} Dermal (Rabbit)
Polyoxypropylenediamine	Not available	2,885 mg/kg	2,978 mg/kg
N-(2-aminoethyl)piperazine	Not available	2,140 mg/kg	880 mg/kg
2,4,6-Tris(dimethylaminomethyl)phenol	Not available	2,169 mg/kg	Not available
4,4'-isopropylidenediphenol	Not available	3,250 mg/kg	3,000 mg/kg

Skin Corrosion/Irritation: Skin Corrosion – Category 1B

Serious Eye Damage/Irritation: Eye Damage – Category 1

Respiratory Sensitization: Information is not available.

Skin Sensitization: Skin Sensitization, Category 1B

Carcinogenicity: Information is not available.

Reproductive Toxicity: Reproductive Toxicity, Category 2

Germ Cell Mutagenicity: Information is not available.

Specific Target Organ Toxicity (STOT)

Single Exposure: Category 2 – May cause damage to central nervous system. May cause neurological disorders.

Repeated Exposure: Information is not available.

Aspiration Hazard: Category 1

Section 12 Ecological Information

Toxicity

Chemical Name	Test	Species	Result
Polyoxypropylenediamine	LC50 (95 hr) EC50 (48 hr) NOEC (3 hr)	Fish Daphnia Bacteria	772 mg/L 418 mg/L 310 mg/L
N-(2-aminoethyl)piperazine	LC50 (24 hr) EC50 (48 hr) EC50 (72 hr)	Fish Daphnia Algae	2,190 mg/L 58 mg/L >1,000 mg/L
2,4,6-Tris(dimethylaminomethyl) phenol	LC50 (24 hr) EC50 (96 hr) EC50 (72 hr)	Rainbow Trout Grass Shrimp Scenedesmus Subspicatus	222 mg/L 718 mg/L 84 mg/L
4,4'-isopropylidenediphenol	LC50 (96 hr) EC50 (48 hr) EC50 (72 hr)	Fish Daphnia Algae	7.5 mg/L 3.9-10.2 mg/L 2.5-3.1 mg/L

Persistence and Degradability

Chemical Name	Test	Period / Result
Polyoxypropylenediamine	OECD 301 B: CO_2 Evolution (Modified Sturm Test)	28 Days, 0%
N-(2-aminoethyl)piperazine	OECD 301 F: Manometric Respirometry	28 Days, 0%
2,4,6-Tris(dimethylaminomethyl)phenol	Not available	Not available
4,4'-isopropylidenediphenol	OECD 301 A: DOC Die-Away	28 Days, 0%

Bioaccumulative Potential

Chemical Name	Log P_{ow}	BCF	Potential
Polyoxypropylenediamine	1.34	Not available	Low
N-(2-aminoethyl)piperazine	<3	<100	Low
2,4,6-Tris(dimethylaminomethyl)phenol	Not available	Not available	Not available
4,4'-isopropylidenediphenol	Not available	Not available	Not available

Mobility in Soil

Chemical Name	Soil/Water Partition Coefficient (K_{OC})
Polyoxypropylenediamine	Not available
N-(2-aminoethyl)piperazine	150 - 500
2,4,6-Tris(dimethylaminomethyl)phenol	Not available
4,4'-isopropylidenediphenol	Not available

Section 13 Disposal Considerations

Disposal Methods

Dispose of unused contents (incineration) and container in accordance with federal, state, and local regulations. Ensure the use of properly authorized waste management companies, where appropriate. See Section 8 for recommendations on the use of personal protective equipment.

Section 14 Transport Information

UN Number: UN2735
Proper Shipping Name: Amines, Corrosive Liquid, N.O.S. (Polypropylenediamine/N-Aminoethylpiperazine Solution)
Transport Hazard Class

U.S. DOT Hazard Class: 8
Canada TDG Hazard Class: 8
Europe ADR/RID Hazard Class: 8
IMDG Code (Ocean) Hazard Class: 8
ICAO/IATA (Air) Hazard Class: 8

Packing Group: III
Environmental Hazards

Marine Pollutant: No
Hazardous Substance: No

Labels for Conveyance: Corrosive 8

Section 15 Regulatory Information

U.S. Federal Regulations

Section 313 Toxic Chemicals: This product contains chemicals subject to SARA Title III Section 313 Reporting requirements: 4,4'-isopropylidenediphenol (CAS 80-05-7)

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV List of substances subject to authorization, substances of very high concern: None of the components are listed.
Annex XVII Restriction on the manufacture, placing on the market and use of certain dangerous substances, mixtures, and articles: None of the components are listed.

California Proposition 65

⚠ WARNING: This product can expose you to 4,4'-isopropylidenediphenol, 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

Inventories

Canadian Domestic Substances List (DSL): All intentionally added components are either listed or are otherwise compliant with the regulation
Canadian Non-Domestic Substances List (NDSL): For one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed
European Inventory of Existing Chemical Substances (EINECS): All intentionally added components are either listed or are otherwise compliant with the regulation

Section 15 Regulatory Information continued

European List of Notified Chemical Substances (ELINCS): For one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed

U. S. Toxic Substance Control Act (TSCA): All intentionally added components are either listed or are otherwise compliant with the regulation

Section 16 Other Information

Training Advice

All personnel using/handling this product should be trained in proper chemical handling and the need for and use of engineering controls and protective equipment.

Recommended Uses and Restrictions

This product is intended for industrial/professional use only.

Disclaimer

The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict of liability arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled lab work and must be confirmed by Buyer by testing for its intended conditions of use. 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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