

Safety Data Sheet

Freeman 850 Epoxy Resin

Section 1 Identification

Product Identifiers

Freeman 850 Epoxy Resin (Part A)

Relevant Identified Uses of the Substance or Mixture

High-Temperature Epoxy Casting Resin, For Professional / Industrial Use Only

Details of the Supplier of the Safety Data Sheet

Freeman Manufacturing & Supply Company
1101 Moore Road, Avon, OH 44011-4043 USA
Telephone: +1 (440) 934-1902
Email: contactus@freemansupply.com

24 Hour emergency telephone number:
CHEMTREC (800) 424-9300

Section 2 Hazards Identification

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

Skin Irritation, Category 2
Serious Eye Damage, Category 1
Skin Sensitizer, Category 1
Specific Target Organ Toxicity – Single Exposure Category 3

Label Elements



Danger

Hazard statements

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness.

Precautionary statements

P261 Avoid breathing fumes, vapors, or mists.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves, protective clothing, eye protection and face protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P317 Get medical help.
P319 Get medical help if you feel unwell.
P333+P317 If skin irritation or rash occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents and container in accordance with local, regional, and national regulations.

Supplemental Information

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

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Freeman 850 Epoxy Resin

Section 3 Composition/Information on Ingredients

Ingredient Name	CAS Number	Concentration (%)
Bisphenol A Epoxy Resin	25068-38-6	20-30
2,2'-[1,4-Butanediylbis(oxymethylene)]bis[oxirane]	2425-79-8	0-10

Other ingredients are not listed because they are either not hazardous or are below cut-off / concentration thresholds.

Section 4 First-Aid Measures

Description of First Aid Measures

Eye Contact: Rinse thoroughly with water, holding the eyelids open to be sure the material is washed out. Remove contact lenses if safe and easy to do. Continue rinsing. Get medical attention immediately.

Skin Contact: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse. Discard clothing that cannot be decontaminated.

Inhalation: Remove person to fresh air. Get medical attention if symptoms develop or persist.

Ingestion: Do not induce vomiting unless instructed to do so by a medical professional. Get medical attention if you feel unwell.

Most Important Symptoms/Effects

Causes serious eye damage.

Indication of Immediate Medical Attention/Special Treatment

Get immediate medical attention if in eyes.

Section 5 Fire-Fighting Measures

Extinguishing Media

Use water fog, foam, carbon dioxide, or dry chemical. Do not use solid water stream. Solid stream of water into hot product may cause violent steam generation or spread fire.

Special Hazards

Not classified as flammable or combustible. Product will burn under fire conditions. Combustion products include oxides of carbon, phenolics, aldehydes, and other toxic organic compounds.

Special Protective Equipment & Precautions for Fire-Fighters

Wear positive pressure, self-contained breathing apparatus, and full-body protective clothing.

Section 6 Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures

Clear unnecessary, unprotected personnel from the area. Wear appropriate protective clothing to prevent eye and skin contact. Avoid breathing vapors.

Environmental Precautions

Avoid releases to the environment.

Methods and Materials for Containment and Cleanup

Cover with an inert absorbent material and collect into an appropriate container for disposal.

Avoid releases to the environment.

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Freeman 850 Epoxy Resin

Section 7 Handling and Storage

Safe Handling

Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not eat, drink, or smoke in the work area. Keep container closed when not in use.

Safe Storage

Store indoors at temperatures below 120°F (49°C). Store in original containers. Avoid getting moisture into containers. Keep containers tightly closed.

Section 8 Exposure Controls/Personal Protection

Occupational Exposure Limits

None established.

Ventilation

Use with adequate general or local exhaust ventilation to minimize exposure levels.

Personal Protective Equipment

Respiratory Protection: If needed, an approved respirator with organic vapor cartridges may be used. Respirator selection and use should be based on contaminant type, form, and concentration. For higher exposures or in an emergency, use a supplied-air respirator. Use respirators in accordance with OSHA's Respiratory Protection Standard (29 CFR 1910.134)

Skin Protection: Wear impervious gloves, such as butyl rubber or nitrile rubber.

Eye Protection: Wear chemical safety glasses or goggles.

Other Protective Measures

Prevent skin contact and contamination of personal clothing. An eye wash facility and washing facility should be available in the work area. Follow applicable regulations and good Industrial Hygiene practice.

Section 9 Physical and Chemical Properties

Appearance	Viscous gray liquid
Odor	Mild
Odor Threshold	No data available
pH	No data available
Melting/Freezing Point	No data available
Boiling Point	No data available
Flash Point	>230°F (>110°C)
Evaporation Rate	No data available
Flammability Limits	No data available
Vapor Pressure	<1 mm Hg at 20°C
Vapor Density	No data available.
Relative Density	1.71
Solubility	Nil to slightly soluble in water.
Coefficient: n-Octanol/Water	No data available
Auto-Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	166,000 cP at 25°C
Volatile Organic Content (VOC)	1.62 g/L
% Volatile	0.10

Section 10 Stability and Reactivity

Reactivity

Not normally reactive.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Masses of ≥ 1 lb. (0.5 kg) plus aliphatic amine will cause irreversible polymerization with considerable heat build-up. Material will polymerize with sodium hydroxide.

Conditions to Avoid

Excessive heat.

Incompatible Materials

Avoid contact with strong acids, bases, oxidizing agents, and amines.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, and oxides of nitrogen.

Section 11 Toxicological Information

Acute Toxicity Values

Chemical Name	LC ₅₀ Inhalation (Rat)	LD ₅₀ Oral (Rat)	LD ₅₀ Dermal (Rabbit)
Epoxy Phenol Novolac Resin	Not available	>2,000 mg/kg	>2,000 mg/kg
Bisphenol A Epoxy Resin	Not available	>2,000 mg/kg	>2,000 mg/m ³
Aliphatic Epoxy Resin	>250 ppm, 6hr	1,134 mg/kg	1,130 mg/kg

Acute Health Effects

Eye Contact: Causes serious eye damage.

Skin Contact: Causes severe skin irritation. May cause allergic skin reaction.

Inhalation: May cause respiratory irritation.

Ingestion: No data available

Chronic Health Effects

Respiratory Sensitization: Components are not respiratory sensitizers.

Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Components are not mutagens.

Carcinogenicity: Components are not carcinogens.

Reproductive Toxicity: Components are not reproductive toxins.

Specific Target Organ Toxicity

Single Exposure: No data available.

Repeated Exposure: No data available.

Aspiration Hazard: No data available.

Section 12 Ecological Information

Ecotoxicity: No data available. Avoid release to the environment.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

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Freeman 850 Epoxy Resin

Section 13 Disposal Considerations

Dispose of according to local, state, and federal regulations. Do not release into drains or sewers.

Section 14 Transport Information

DOT

Non-bulk packages (<882 lb. or <119 gallons) not regulated for transport

IATA/IMDG

UN3082, Environmentally hazardous substance, liquid, n.o.s (epoxy resin), 9, III, MARINE POLLUTANT
Excepted from IMDG and IATA regulations if shipped in quantities of 5L (1.32gal) or less. (See IATA SP A197 and IMDG 2.10.2.7)

Section 15 Regulatory Information

US Federal Regulations

CERCLA 103 Reportable Quantity: This product is not subject to reporting under CERCLA. Some states have more stringent reporting requirements.

SARA Title III Section 311/312: See Section 2

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

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status

All of the components of this product are listed on TSCA.

Canadian Environmental Protection Act (CEPA) Status

All components are listed on either the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

US State Regulations

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

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.

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.

Issue Date: March 11, 2022

Previous Revision Date: September 2, 2022

Current Revision Date: December 16, 2024

Safety Data Sheet
Freeman 51 Epoxy Hardener

Section 1 Identification

Product Identifiers

Freeman 51 Epoxy Hardener (Part B)

Relevant Identified Uses of the Substance or Mixture

High-Temperature Epoxy Casting System Catalyst, For Professional / Industrial Use Only

Details of the Supplier of the Safety Data Sheet

Freeman Manufacturing & Supply Company
1101 Moore Road, Avon, OH 44011-4043 USA
Telephone: +1 (440) 934-1902
Email: contactus@freemansupply.com

24 Hour emergency telephone number:
CHEMTREC (800) 424-9300

Section 2 Hazards Identification

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

Flammable Liquid, Category 4
Acute Toxicity (Oral), Category 4
Acute Toxicity (Dermal), Category 4
Skin Corrosion, Category 1
Serious Eye Damage, Category 1
Skin Sensitization, Category 1
Carcinogenicity, Category 2
Specific Target Organ Toxicity – Single Exposure, Category 3
Specific Target Organ Toxicity – Repeated Exposure, Category 2
Hazardous to the Aquatic Environment – Acute Hazard, Category 1
Hazardous to the Aquatic Environment – Chronic Hazard, Category 1

Label Elements



Danger

Hazard statements

H227 Combustible liquid.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P203 Obtain, read and follow all safety instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe fumes, vapors, mists, or sprays.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Safety Data Sheet

Freeman 51 Epoxy Hardener

Section 2 Hazards Identification continued

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, protective clothing, eye protection, and face protection.

P301+P317 +P330+P331 IF SWALLOWED: Get medical help. Rinse mouth. Do NOT induce vomiting.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P302+P361+P354 IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P316 Get emergency medical help immediately.

P318 IF exposed or concerned, get medical advice.

P319 Get medical help if you feel unwell.

P333+P317 If skin irritation or rash occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

P403 Store in a well-ventilated place.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents and container in accordance with local, regional, and national regulations.

Supplemental Information

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

Section 3 Composition/Information on Ingredients

Ingredient Name	CAS Number	Concentration (%)
1,2-Diaminocyclohexane	694-83-7	50-60
Diethylmethylbenzenediamine	112-24-3	30-40
2-Ethyl-4-methylimidazole	931-36-2	10-20

Other ingredients are either not listed because they are not hazardous, or are below cut-off / concentration thresholds.

Section 4 First-Aid Measures

Description of First Aid Measures

Eye Contact: Rinse thoroughly with water, holding the eyelids open to be sure the material is washed out. Remove contact lenses if safe and easy to do. Continue rinsing. Get medical attention immediately.

Skin Contact: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention immediately. Wash contaminated clothing before reuse. Discard clothing that cannot be decontaminated.

Inhalation: Remove person to fresh air. Get medical attention if symptoms develop or persist.

Ingestion: Rinse mouth. Do NOT induce vomiting. Get medical attention immediately.

Most Important Symptoms/Effects

Harmful if swallowed and in contact with skin.

Indication of Immediate Medical Attention/Special Treatment

Get immediate medical attention if swallowed, on skin, or in eyes.

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Freeman 51 Epoxy Hardener

Section 5 Fire-Fighting Measures

Extinguishing Media

Use water fog, foam, carbon dioxide, or dry chemical. Do not use solid water stream. Solid stream of water into hot product may cause violent steam generation or spread fire.

Special Hazards

Combustible liquid.

Special Protective Equipment & Precautions for Fire-Fighters

Wear positive pressure, self-contained breathing apparatus, and full-body protective clothing.

Section 6 Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures

Clear unnecessary, unprotected personnel from the area. Wear appropriate protective clothing to prevent eye and skin contact and avoid breathing vapors.

Environmental Precautions

Avoid releases to the environment.

Methods and Materials for Containment and Cleanup

Cover with an inert absorbent material and collect into an appropriate container for disposal.

Section 7 Handling and Storage

Safe Handling

Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not eat, drink, or smoke in the work area. Keep container closed when not in use.

Safe Storage

Store indoors at temperatures below 120°F (49°C). Store in original containers. Avoid getting moisture into containers. Keep containers tightly closed. Store locked up.

Section 8 Exposure Controls/Personal Protection

Occupational Exposure Limits

None established

Ventilation

Use with adequate general or local exhaust ventilation to minimize exposure levels.

Personal Protective Equipment

Respiratory Protection: If needed, an approved respirator with organic vapor cartridges may be used. Respirator selection and use should be based on contaminant type, form, and concentration. For higher exposures or in an emergency, use a supplied-air respirator. Use respirators in accordance with OSHA's Respiratory Protection Standard (29 CFR 1910.134)

Skin Protection Wear impervious gloves, such as butyl rubber or nitrile rubber.

Eye Protection: Wear chemical safety glasses or goggles.

Other Protective Measures

Prevent skin contact and contamination of personal clothing. An eye wash facility and washing facility should be available in the work area. Follow applicable regulations and good Industrial Hygiene practice.

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Freeman 51 Epoxy Hardener

Section 9 Physical and Chemical Properties

Appearance	Pale liquid
Odor	Amine-like
Odor Threshold	No data available
pH	No data available
Melting/Freezing Point	No data available
Boiling Point	No data available
Flash Point	>167°F (>75°C)
Evaporation Rate	No data available
Flammability Limits	No data available
Vapor Pressure	<1 mm Hg at 25°C
Vapor Density	No data available
Relative Density	0.98
Solubility	Nil to slightly soluble in water
Coefficient: n-Octanol/Water	No data available
Auto-Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	40 cP at 25°C

Section 10 Stability and Reactivity

Reactivity

Not normally reactive.

Chemical Stability

Stable under recommended storage 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 sources of ignition.

Incompatible Materials

Avoid contact with strong oxidizing agents, acids, and bases.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, aldehydes, and oxides of nitrogen.

Section 11 Toxicological Information

Acute Toxicity Values

Ingredient Name	LC₅₀ Inhalation (Rat)	LD₅₀ Oral (Rat)	LD₅₀ Dermal (Rabbit)
1,2-Diaminocyclohexane (CAS 694-83-7):	1.23 mg/L, 4hr.	1,170 mg/kg	1,870 mg/kg
Diethylmethylbenzenediamine (CAS 68479-98-1):	Not available	756.92 mg/kg	1,129 mg/kg
2-Ethyl-4-methylimidazole (CAS 931-36-2):	Not available	731 mg/kg	>400 mg/kg

Acute Health Effects

Eye Contact: Causes serious eye damage.

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

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Freeman 51 Epoxy Hardener

Section 11 Toxicological Information

Inhalation: May cause mild respiratory irritation.

Ingestion: Harmful if swallowed.

Chronic Health Effects

Respiratory Sensitization: Components are not respiratory sensitizers.

Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Components are not mutagens.

Carcinogenicity: Suspected of causing cancer

Reproductive Toxicity: Components are not classified as reproductive toxins.

Specific Target Organ Toxicity

Single Exposure: May cause respiratory irritation, drowsiness or dizziness.

Repeated Exposure: May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard: No data available.

Section 12 Ecological Information

Ecotoxicity: Very toxic to aquatic life with long lasting effects. Avoid release into waterways.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Section 13 Disposal Considerations

Dispose of unused contents and container according to local, state, and federal regulations. Do not dump in drains or sewers.

Section 14 Transport Information

DOT

UN1760, Corrosive liquid, n.o.s., (1,2-diaminocyclohexane, diethylenetoluenediamine), 8, II

LTD QTY if shipped in quantities of 1L (0.30 gal) or less.

IATA/IMDG

UN1760, Corrosive liquid, n.o.s., (1,2-diaminocyclohexane, diethylenetoluenediamine), 8, II, MARINE POLLUTANT

Section 15 Regulatory Information

US Federal Regulations

CERCLA 103 Reportable Quantity: This product is not subject to reporting under CERCLA.

Some states have more stringent reporting requirements.

SARA Title III Section 311/312: See Section 2

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

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status

All of the components of this product are listed on TSCA.

US State Regulations

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Safety Data Sheet

Freeman 51 Epoxy Hardener

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.

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.

Issue Date: March 11, 2022

Previous Revision Date: September 2, 2022

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