

Section 1 Identification

Product identifiers

Product name: Freeman 801 Resin

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Epoxy resin

Details of the supplier of the safety data sheet

Freeman Manufacturing and Supply Company
 1101 Moore Road, Avon, OH 44011
 Telephone (440) 934-1902

HMIS	
H	2
F	2
R	1
PPE	
Sec. 8	

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

Section 2 Hazards Identification

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

- Serious Eye Damage/ Irritation, Category 2A
- Skin Corrosion/Irritation, Category 2
- Skin Sensitization, Category 1
- Flammable Liquids, Category 4
- Germ Cell Mutagenicity, Category 2
- Carcinogenicity, Category 2
- Acute Aquatic Toxicity, Category 2
- Chronic Aquatic Hazard, Category 2

GHS Label elements, including precautionary statements



Signal word Danger

Hazard Statements

- Combustible Liquid
- Causes serious eye irritation.
- Causes skin irritation.
- May cause an allergic skin reaction
- Suspected of causing genetic defects
- Suspected of causing cancer
- Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

- Keep container tightly closed when not in use.
- Wear protective gloves/eye protection/face protection.
- Avoid breathing vapor. Wash hands thoroughly after handling.
- Keep away from flames and hot surfaces
- Do not eat, drink or smoke when using this product.
- Contaminated clothing should not be allowed out of the workplace.
- Avoid release to the environment

Section 2 Hazards Identification continued

Response

If exposed or concerned, get medical attention
 If on skin: Wash with plenty of soap and water.
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 If in eyes: Rinse continuously with water for at least 15 minutes.
 Remove contact lenses, if present and easy to do.
 If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep cool.

Disposal

Dispose of contents and container to an appropriate waste site in accordance with local and national regulations.

Hazards not otherwise classified (HNOC) or not covered by GHS

None known

Section 3 Composition/Information on Ingredients

Ingredient Name	CAS Number	Concentration (%)
Bisphenol A epoxy resin	25068-38-6	30 - 60
Butyl Glycidyl Ether	2426-08-6	3 - 7

Section 4 First Aid Measures

Description of first aid measures

If inhaled

Move person into fresh air. If unconscious, place in recovery position. If symptoms persist, get medical attention.

In case of skin contact

Wash with plenty of soap and water. Wash contaminated clothes/shoes before reuse. If skin irritation persist, get medical attention.

In case of eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Protect the unharmed eye. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.

If swallowed

Induce vomiting immediately and get medical attention. Keep respiratory tract clear. Take victim immediately to the hospital.

Notes to physician: Symptomatic treatment and supportive therapy as indicated.

Section 5 Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture

Do not allow run-off from firefighting to enter drains or courses.

Section 5 Fire-Fighting Measures continued

Hazardous thermal decomposition products

Carbon dioxide, carbon monoxide, nitrogen oxides, halogenated compounds, metal oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Section 6 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

Environmental precautions

Avoid contact with soil, waterways, drains, and sewers. Inform relevant authorities if the product has caused environmental pollution. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see section 13). Keep in suitable, closed containers for disposal.

Section 7 Handling and Storage

Precautions for safe handling

Keep away from open flames, hot surfaces and sources of ignition. Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage, including any incompatibilities

Store at ambient temperatures in closed containers in a well-ventilated area, away from chemical incompatibilities. Store locked up and sealed to prevent leakage.

Section 8 Exposure Controls/Personal Protection

Components with workplace control parameters

Ingredient	OSHA		ACGIH	
	PEL	STEL	TWA	STEL
Aluminum	15 mg/m ³ (total dust)	Not established	15 mg/m ³ (total dust)	Not established
Limestone	15 mg/m ³ (total dust)	Not established	Not established	Not established
Butyl Glycidyl Ether	50 ppm	Not established	3 ppm	Not established
Quartz (SiO ₂)	30 mg/m ³ / %SiO ₂ +2 (total dust)	Not established	0.025 mg/m ³ Silica (Respirable fraction)	Not established

Section 8 Exposure Controls/Personal Protection continued

Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits.

Personal protective equipment

Eye/face protection

Use chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

Use impervious gloves. Discuss suitability with glove manufacturer. Contaminated gloves should be replaced.

Body protection

Prevent skin contact when handling material.

Respiratory protection

No personal respiratory protective equipment required with normal use. In case of vapor formation use a respirator with an approved filter.

Safety stations

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General hygienic practices

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

Section 9 Physical and Chemical Properties

Appearance	Gray liquid
Odor	Slight ether-like
Odor threshold	No data available
pH	No data available
Boiling point	>93°C (>200°F)
Flash point (Pensky-Martens)	77°C (>170.6°F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability	No data available
Vapor pressure	1.4663 hPa (25°C)
Vapor density	No data available
Relative density (g/cc)	1.735
Water Solubility	Negligible
Coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
% Volatile	No data available

Section 10 Stability and Reactivity

Reactivity

Stable under recommended storage conditions.

Chemical stability

No decomposition if stored and applied as directed.

Possibility of hazardous reactions

Vapors may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks.

Incompatible materials

No specific data.

Hazardous decomposition products

Thermal oxidative decomposition can produce carbon oxides, and nitrogen oxides.

Section 11 Toxicological Information

Information on toxicological effects

Acute oral toxicity	LD50 >5000 mg/kg (Calculated)
Acute inhalation toxicity	LC50 34.34 mg/l, 4 h (Calculated)
Acute dermal toxicity	No data available
Skin corrosion/irritation	May cause skin irritation
Serious eye damage/eye irritation	May cause irreversible eye damage
Respiratory or skin sensitization	Sensitizer
Germ cell mutagenicity	No specific data
Carcinogenicity	
IARC	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
NTP	Quartz (SiO ₂) is known to be a human carcinogen.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
Reproductive Toxicity	No data available
STOT - single exposure	(Specific target organ toxicity) Respiratory irritation
STOT - repeated exposure	(Specific target organ toxicity) No data available
Aspiration Hazard	No data available

Section 12 Ecological Information

Toxicity	Harmful to aquatic life
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT & vPvB assessment	No data available

Section 13 Disposal Considerations

The product should not be allowed to enter drains, water courses or the soil. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on empty drums. Send to a licensed waste management company. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14 Transport Information

DOT: **Shipping Name:** Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin)
Hazard Class: 9
ID No.: UN 3082
Packing Group: III
Label: Class 9
Marine pollutant: Yes

Marine pollutants are only regulated for bulk and vessel shipments, per 49CFR171.4 (c) Exceptions. Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.

IATA: **Shipping Name:** Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin)
Hazard Class: 9
ID No.: UN 3082
Packing Group: III
Label: Miscellaneous
Packing instruction (cargo aircraft): 964
Packing instruction (passenger aircraft): 964

IMDG: **Shipping Name:** Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin)
Hazard Class: 9
ID No.: UN 3082
Packing Group: III
Label: 9
EmS Code: F-A, S-F
Marine pollutant: Yes

Section 15 Regulatory Information

US Federal Regulations

RCRA Hazardous Waste Number (40 CFR 261.33): Not listed
RCRA Hazardous Waste Classification (40 CFR 261): Not classified
CERCLA Hazardous Substance (40 CFR 302.4): Listed/unlisted specific per RCRA Sec. 3001
SARA 311/312 Codes: Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313 Toxic Chemical: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established.
TSCA Inventory Status: All ingredients listed on TSCA inventory requirements

US State Regulations

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

Section 16 Other Information

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.

Section 1 Identification

Product identifiers

Product name: Freeman 801 Hardener

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Epoxy system hardener

Details of the supplier of the safety data sheet

Freeman Manufacturing and Supply Company
 1101 Moore Road, Avon, OH 44011
 Telephone (440) 934-1902

HMIS	
H	3
F	1
R	0
PPE	
Sec. 8	

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 Corrosion/Irritation, Category 1C
 Serious Eye Damage/Eye Irritation, Category 1
 Skin Sensitization, Category 1
 Acute Aquatic Environment, Category 3
 Chronic Aquatic Environment, Category 2

GHS Label elements, including precautionary statements



Signal word

Danger

Hazard Statements

Causes severe skin burns and eye damage.
 May cause an allergenic skin reaction.
 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

Keep container tightly closed when not in use.
 Wear protective gloves/eye protection/face protection.
 Do not eat, drink or smoke when using this product.
 Avoid breathing vapor. Use in a well ventilated area.
 Avoid release to the environment.

Response

Get medical attention if you feel unwell.
 IF exposed or if you feel unwell: Call a POISON CENTER or physician.
 IF SWALLOWED: Rinse mouth. Do not induce vomiting. Get medical attention.
 IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.
 If skin irritation or rash occurs: Get medical attention.

Section 2 Hazards Identification continued

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical attention.
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention immediately.

Storage

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

Disposal

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

Hazards not otherwise classified (HNOC) or not covered by GHS

None known

Section 3 Composition/Information on Ingredients

Ingredient Name	CAS Number	Concentration (%)
Tetraethylenepentamine	112-57-2	13 - 30
2,4,6-tris(dimethylaminomethyl)phenol	90-72-5	13 - 30
Triethylenetetramine	112-24-3	3 - 7
Bis[(dimethylamino)methyl]phenol	71074-89-0	1 - 3

Section 4 First Aid Measures

Description of first aid measures

If inhaled

Move person into fresh air. If not breathing, give artificial respiration. Get medical attention.

In case of skin contact

Wash off with soap and plenty of water. Get immediate medical attention.

In case of eye contact

Flush eyes with water for at least 15 minutes. Get medical attention immediately. Continue rinsing eyes during transport to hospital.

If swallowed

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Section 5 Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture

Do not allow run-off from firefighting to enter drains or water courses.

Hazardous thermal decomposition products

Carbon dioxide, carbon monoxide, nitrogen oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Collect contaminated fire extinguishing water separately. Do not discharge into drains.

Section 6 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid breathing vapors, mist or gas. For personal protection see section 8.

Environmental precautions

Do not let product enter drains. If product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up

Dike and contain spill. Soak up with inert absorbent material (e.g. sand, silica gel, sawdust).
Keep in suitable, closed containers for disposal.

Section 7 Handling and Storage

Precautions for safe handling

Do not breathe vapors/dust. Avoid exposure. Obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry and well-ventilated place. Carefully reseal opened containers after use. No known incompatible materials.

Section 8 Exposure Controls/Personal Protection

Components with workplace control parameters

None known

Appropriate engineering controls

If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protective equipment

Eye/face protection: Use safety goggles.

Hand protection: Use impervious gloves. Discuss suitability with glove manufacturer.

Skin/body protection: Prevent skin contact when handling material. Wear impervious clothing.

Respiratory protection

The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used.

Safety stations

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General hygienic practices

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

Section 9 Physical and Chemical Properties

Appearance	Amber liquid
Odor	Amine-like
Odor threshold	No data available
pH	No data available
VOC	No data available
Freezing point	No data available
Boiling point	>148°C (>298°F)
Flash point (Pensky-Martens)	107°C (225°F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability	No data available
Vapor pressure	0.001333 hPa (25°C)
Relative vapor density	No data available
Relative density	0.96
Water solubility	Slightly soluble
Coefficient: n-octanol/ water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

Section 10 Stability and Reactivity

Reactivity
No known dangerous reaction if stored and applied as directed.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None known.

Conditions to avoid
None known.

Incompatible materials
None known.

Hazardous decomposition products
Thermal oxidative decomposition can produce carbon oxides, and nitrogen oxides.

Section 11 Toxicological Information

Information on toxicological effects	
Acute oral toxicity	4,489 mg/kg (calculated)
Acute inhalation toxicity	No data available
Acute dermal toxicity	2,850 mg/kg (calculated)
Skin corrosion/irritation	Extremely corrosive and destructive to tissue
Serious eye damage/eye irritation	May cause irreversible eye damage
Respiratory or skin sensitization	Causes skin sensitization
Germ cell mutagenicity	No data available

Section 11 Toxicological Information

Carcinogenicity

- IARC** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
- NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen.
- OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

- Reproductive toxicity** No data available
- STOT - single exposure** (Specific Target Organ Toxicity) No data available
- STOT - repeated exposure** (Specific Target Organ Toxicity) No data available
- Aspiration toxicity** No data available

Section 12 Ecological Information

- Toxicity** Harmful to aquatic life
- Persistence and degradability** No data available
- Bioaccumulative potential** No data available
- Mobility in soil** No data available
- Results of PBT & vPvB assessment** No data available

Section 13 Disposal Considerations

Do not allow product to enter drains, water courses, or soil. Contact a licensed waste management company for detailed recommendations. Follow applicable Federal, State, and local regulations.

Section 14 Transport Information

- DOT: Shipping Name:** AMINES, LIQUID, CORROSIVE, N.O.S. (2,4,6-TRIS(DIMETHYL AMINOMETHYL) PHENOL)
- Hazard Class:** 8
- ID No.:** UN 2735
- Packing Group:** III
- Label:** Corrosive
- ERG Code:** 153
- Marine pollutant:** no
- IATA: Shipping Name:** AMINES, LIQUID, CORROSIVE, N.O.S. (2,4,6-TRIS(DIMETHYL AMINOMETHYL) PHENOL)
- Hazard Class:** 8
- ID No.:** UN 2735
- Packing Group:** III
- Label:** Corrosive
- Packing instruction (cargo aircraft):** 856
- Packing instruction (passenger aircraft):** 852

Section 14 Transport Information continued

IMDG: Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (2,4,6-TRIS(DIMETHYL AMINOMETHYL) PHENOL)
Hazard Class: 8
ID No.: UN 2735
Packing Group: III
Label: 8
EmS Code: F-A, S-B
Marine pollutant: no

Section 15 Regulatory Information

US Federal Regulations

RCRA Hazardous Waste Number (40 CFR 261.33): Not listed
RCRA Hazardous Waste Classification (40 CFR 261): Not classified
CERCLA Hazardous Substance (40 CFR 302.4): Listed/unlisted specific per RCRA Sec. 3001
SARA 311/312 Codes: Acute Health Hazard
SARA 313 Toxic Chemical: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.
TSCA Inventory Status: All ingredients listed on TSCA inventory requirements.

State Regulations

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

Section 16 Other Information

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.