



Freeman 945 Resin

Section 1 Identification

Product identifiers		HMIS
Product name: Freeman 945 Resin		H 3
Relevant identified uses of the substance or n	nixture and uses advised against	F 1
Identified uses: Epoxy resin		R 0
Details of the supplier of the safety data shee	t	PPE
Freeman Manufacturing and Supply Com	ipany	Sec. 8
1101 Moore Road, Avon, OH 44011		
Telephone (440) 934-1902		
24 Hour emergency telephone number: CHEM	MTREC (800) 424-9300, Customer Num	ber 8849
Section 2 Ha	azards Identification	
GHS Classification in accordance with 29 CFR	1910.1200 (OSHA HCS)	
Serious Eye Damage/Eye Irritation, Cate	gory 1	
Skin Sensitization, Category 1		
Skin Corrosion/Irritation, Category 2		
Acute Aquatic Toxicity, Category 2		
Chronic Aquatic Toxicity, Category 2		
GHS Label elements, including precautionary	statomonts	
Signal word Danger		
Hazard Statements Causes serious eye damage		
Causes skin irritation.		
May cause an allergic skin reaction.		
Toxic to aquatic life with long lasting effe	ect.	
Precautionary Statements		
Prevention		
Keep container tightly closed when not in	n use.	
Avoid breathing dust/fume/gas/mist/va		
Wear protective clothing/gloves/eye pro	otection/face protection.	
Wash skin thoroughly after handling.		
Do not eat, drink or smoke when using th	-	
Contaminated clothing should not be allo	owed out of the workplace.	
Avoid release to the environment.		
Response	water If drin irritation or reach accurate Cat	modical
advice/attention. Wash contaminated clo	water. If skin irritation or rash occurs: Get	meulcal
-	for at least 15 minutes. Remove contact le	enses if
present and easy to do. If eye irritation p		
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Safety Data Sheet

Freeman 945 Resin

Section 2 Hazards Identification continued

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 (%)
Aluminium	7429-90-5	30 - 50
Bisphenol A epoxy resin	25068-38-6	30 - 50
Epoxy phenol novolac resin	28064-14-4	10 - 20
1,4-Butanediol diglycidyl ether	2425-79-8	5 - 10
4-t-Butylphenyl glycidyl ether	3101-60-8	1 – 2.5
Quartz (SiO ₂)	14808-60-7	0.1 - 1

Section 4 First Aid Measures

Description of first aid measures

If inhaled

Move person into fresh air. Get medical attention if symptoms occur.

In case of skin contact

Wash off with soap and plenty of water. Get medical attention if symptoms occur.

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. Protect unharmed eye.

If swallowed

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Provided the patient is conscious, wash out mouth with water. Get medical attention immediately.

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

Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer, or drain. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazardous thermal decomposition products

Carbon dioxide, carbon monoxide

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

Stop leak if without risk. Move containers from spill area and approach release from upwind. Prevent entry into sewers, water courses, basements, or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material and place in closed container for disposal according to local regulations.

Section 7 Handling and Storage

Precautions for safe handling

Do not get in eyes or on skin/clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Provide appropriate exhaust ventilation. Keep in original container or an approved alternative and keep tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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/m³ (total dust)	Not established	15 mg/m ³ (total dust)	Not established

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.

Skin protection

Hand protection

Use impervious gloves. Consult glove manufacturer for suitable gloves.

Contaminated gloves should be replaced.

Body protection

Prevent skin contact when handling material.



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Section 8 Exposure Controls/Personal Protection

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.

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. Wash thoroughly after handling materials. Avoid contamination of food, beverages, or smoking. Clean contaminated clothing thoroughly before reuse.

Appearance	Gray liquid	
Odor	Mild	
Odor threshold	No data available	
рН	No data available	
Percent volatile materials	3-7	
Total Organics	>99%	
Freezing point	No data available	
Boiling point	>176°C (>350°F)	
Flash point (closed cup)	>149°C (>300°F)	
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	
Upper/lower flammability	No data available	
Vapor pressure	0.01333 hPa (25°C)	
Relative vapor density	No data available	
Relative density (g/cc)	1.5	
Product density (lb/gal)	12.43	
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	
Explosive properties	No data available	
Oxidizing properties	No data available	
VHAP Content	None	
Section 10 Stability and Reactivity		

Possibility of hazardous reactions

None known.



Safety Data Sheet

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Section 10 Stab	bility and Reactivity continued
Conditions to avoid and incompatible mat No specific data.	terials
Hazardous decomposition products	
Thermal oxidative decomposition car	n produce carbon ovides
Thermal oxidative decomposition car	i produce carbon oxides.
Section 11	Toxicological Information
Information on toxicological effects	
Acute oral toxicity	LD50 >5,000 mg/kg (Calculated)
Acute inhalation toxicity	LC50 130.53 mg/l, 4 h (Calculated)
Acute dermal toxicity	LD50 >5,000 mg/kg (Calculated)
Skin corrosion/irritation	Extremely corrosive and destructive to tissue
Serious eye damage/eye irritation	
Respiratory or skin sensitization	Sensitizer
Germ cell mutagenicity	No specific data
Carcinogenicity	
IARC Quartz, Group 1: Carc	-
ACGIH Quartz, Suspected hur	
NTP Quartz, Known to be h	
	product present at levels greater than or ified 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 Hazard	No data available
rispiration mazara	
Section 1	2 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
Contact a licensed contractor for deta	
Follow applicable Federal, State, and	local regulations.



Freeman 945 Resin

	Section 14 Transport Information
DOT:	
	Resin, Epoxyphenol Novolac Resin)
	Hazard Class: 9
	ID No.: UN 3082
	Packing Group: III
	Label: Class 9
	ERG Code: 171
	Marine pollutant: yes
IATA:	Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy
	Resin, Epoxyphenol Novolac Resin)
	Hazard Class: 9
	ID No.: UN 3082
	Packing Group: III
	Label: Miscellaneous
	Packing instruction (cargo/passenger aircraft): 964
IMDG:	Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy
	Resin, Epoxyphenol Novolac 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

Section 15 Regulatory Information

US Federal Regulations

SARA 311/312 Codes: Skin corrosion or irritation, Serious eye damage or irritation, Respiratory or skin sensitization

SARA 313 Toxic Chemical: This material does not contain any chemical components with CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III. Clean Air Act: This product does not contain Volatile Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act or as amended in the Federal Register (40 CFR 61). US Toxic Substance Control Act (TSCA) Inventory Status: All ingredients listed on TSCA inventory or in compliance.

TSCA – 5(a) Significant New Rule List of Chemicals: No substances are subject to a Significant New Use Rule.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt D): No substances are subject to TSCA 12(b) export notification requirements.

California Proposition 65

WARNING: This product can expose you to chemicals including silica and Epichlorohydrin, which is known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to <u>www.P65Warnings.ca.gov</u>.



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

HMIS **Product identifiers** Η Product name: Freeman 945 Hardener F 1 Relevant identified uses of the substance or mixture and uses advised against R 0 Identified uses: Epoxy system hardener **PPE** Details of the supplier of the safety data sheet Sec. 8 Freeman Manufacturing and Supply Company 1101 Moore Road, Avon, OH 44011 Telephone (440) 934-1902 24 Hour emergency telephone number: CHEMTREC (800) 424-9300, Customer Number 8849 Section 2 Hazards Identification GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS) Acute Toxicity (Dermal), Category 4 Serious Eye Damage/Eye Irritation, Category 1 Skin Sensitization, Category 1 Skin Corrosion/Irritation, Category 1B Acute Aquatic Toxicity, Category 3 Acute Chronic Toxicity, Category 3 **GHS Label elements, including precautionary statements** Signal word Danger **Hazard Statements** Harmful in contact with skin. Causes severe skin burns and eve damage. May cause an allergenic skin reaction. Harmful 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. Use in a well ventilated area. Avoid breathing vapor. Response Get medical attention if you feel unwell. IF exposed or if you feel unwell: Call a POISON CENTER or physician.

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Section 2 Hazards Identification continued

Section 3 Composition/Information on Ingredients
None known
Hazards not otherwise classified (HNOC) or not covered by GHS
Dispose of contents and container in accordance with all local, regional, national and international regulations.
Disposal
Store in a well-ventilated place. Keep container tightly closed.
Storage
Collect spillage.
Wash contaminated clothing before reuse.
Continue rinsing. Get medical attention immediately.
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses if present and easy to do.
attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical
If skin irritation or rash occurs: Get medical attention.
IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.
IF SWALLOWED: Rinse mouth. Do not induce vomiting. Get medical attention.

Ingredient Name	CAS Number	Concentration (%)
Triethylenetetramine	112-24-3	30 - 60
m-Xylylenediamine	1477-55-0	13 - 30
1-Methylimidazole	616-47-7	3 – 7
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	25513-64-8	0.1 - 1

Section 4 First Aid Measures

Description of first aid measures

If inhaled

Move person into fresh air. Get medical attention if symptoms persist.

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.



			Freeman	945 Harde	ener
		Section 5 Fire-Fi	i ghting Measures co	ontinued	
Ca Advice fo W Further i Co	arbon dioxide, c or firefighters Vear self-containe nformation ollect contaminat	ecomposition pro arbon monoxide, nit ed breathing apparatu ed fire extinguishing dance with local regu	rogen oxides us for firefighting if r water separately. D	-	e into drains.
		Section 6 Acci	dental Release Mea	asures	
Environn Do re Methods Di	nental precaution o not let product espective authorie and materials for ike and contain s	enter drains. If produ	uct contaminates riv cleaning up rt absorbent materia	ers and lakes o	or drains inform
		Section 7 I	Handling and Stora	ge	
Do see sus dis C ondition Ke	e section 8. Smok sceptible to skin s ease should not b ns for safe stora eep containers tig	ors. Avoid exposure. A	ing should be prohib s or asthma, allergie rocess inwhich this r compatibilities and well-ventilated p	ited in the app es, chronic or re mixture is bein	g used.
		Section 8 Exposure	Controls/Personal	Protection	
Compone	ents with workp	lace control param	eters		
Ingr	edient	OS	НА		ACGIH
		PEL	STEL	TWA	STEL
1-Me	ethylimidazole	None established	None established	0.1 mg/m ³	None established

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.





Section 8 Exposure Controls/Personal Protection continued

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	Blue liquid
Odor	Amine
Odor threshold	No data available
рН	No data available
Percent volatile materials	0
Total Organics	64.05%
Freezing point	No data available
Boiling point	204°C (400°F)
Flash point (Seta closed cup)	> 93°C (> 199°F)
Evaporation rate	No data available
Flammability (solid, gas)	Not applicable
Upper/lower flammability	No data available
Vapor pressure	0.0011997 hPa (20°C)
Relative vapor density	No data available
Relative density	1.045
Product density (lb/gal)	8.72
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
VHAP Content	None

Section 10 Stability and Reactivity

Reactivity

No known dangerous reaction if stored and applied as directed.



Section 10 Stat	oility and Reactivity continued				
Chemical stability					
Stable under recommended storage conditions.					
Possibility of hazardous reactions					
None known.					
Conditions to avoid and incompatible mat	erials				
None known.					
Hazardous decomposition products					
	n produce carbon oxides, and nitrogen oxides.				
Section 11	Tovicological Information				
Section 11	Toxicological Information				
Information on toxicological effects					
Acute oral toxicity	2,043 mg/kg (calculated)				
Acute inhalation toxicity	9.31 mg/l, 4 h (calculated)				
Acute dermal toxicity	1,478 mg/kg (calculated)				
Skin corrosion/irritation	Extremely corrosive and destructive to tissue				
Serious eye damage/eye irritation	May cause irreversible eye damage Causes skin sensitization				
Respiratory or skin sensitization Germ cell mutagenicity	No data available				
Carcinogenicity	NO UATA AVAIIADIE				
u	product present at levels greater than or equal to 0.1%				
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%					
	nogen 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. Do not re-use empty containers. Contact a licensed waste management company for detailed recommendations. Follow applicable Federal, State, and local regulations.					



Section 14 Transport Information
DOT: Shipping Name: Polyamines, liquid, corrosive, n.o.s. (Triethylene tetramine, m-Xylene diamine) Hazard Class: 8
ID No.: UN 2735
Packing Group: II
Labels: Corrosive ERG Code: 153
ATA: Shipping Name: Polyamines, liquid, corrosive, n.o.s.
(Triethylene tetramine, m-Xylene diamine)
Hazard Class: 8
ID No.: UN 2735 Packing Group: II
Labels: Corrosive
Packing instruction (cargo aircraft): 855
Packing instruction (passenger aircraft): 851
MDG: Shipping Name: Polyamines, liquid, corrosive, n.o.s.
(Triethylene tetramine, m-Xylene diamine) Hazard Class: 8
ID No.: UN 2735
Packing Group: II
Labels: 8
EmS Code: F-A, S-B
Marine pollutant: no
Section 15 Regulatory Information
JS Federal Regulations
SARA 311/312 Codes: Acute Health Hazard
SARA 313 Toxic Chemical: This material does not contain any chemical components with CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III.
Clean Air Act: This product does not contain Volatile Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act or as amended in the Federal Register (40 CFR 61).
US Toxic Substance Control Act (TSCA) Inventory Status: All ingredients listed on TSCA inventory or in compliance. TSCA – 5(a) Significant New Rule List of Chemicals: No substances are subject to a Significant
New Use Rule. TSCA Section 12(b) Export Notification (40 CFR 707, Subpt D): No substances are subject to
TSCA 12(b) export notification requirements.
JS State Regulations
California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.



Section 16 Other Information

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