



# Safety Data Sheet

## RF 2222 Epoxy Resin

### Section 1. Identification

Product Identifier	RF 2222 Epoxy Resin		
Synonyms	Epoxy Resin		
Manufacturer Stock Numbers	12163		
Recommended use	Epoxy Resin		
Uses advised against	N/A		
Manufacturer Contact Address	Resin Formulators 18027 Bishop Avenue Carson, CA, 90746 USA		
	Phone	Emergency Phone	Fax
	(310) 204-6159	(800) 424-9300 CHEMTREC	(310) 202-7247
	Email	Website	
	sales@evroberts.com	http://www.evroberts.com	

### Section 2. Hazards Identification

Classification	EYE DAMAGE/IRRITATION - Category 2B SENSITIZATION - SKIN - Category 1A SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (Single E - Category 3
Signal Word	Warning
Pictogram	
Hazard Statements	Causes eye irritation

	<p>Heated material can cause thermal burns  May cause an allergic skin reaction  May cause respiratory tract irritation  Moderately irritating to skin</p>
<b>Precautionary Statements</b>	
<b>Response</b>	<p>Call a poison center or doctor if you feel unwell.  If eye irritation persists: Get medical advice/attention.  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  If inhaled: Remove person to fresh air and keep comfortable for breathing.  If on skin: Wash with plenty of soap and water for a minimum of 15 minutes  If skin irritation or rash occurs: Get medical advice/attention.  Specific treatment (see instructions on this label)  Wash contaminated clothing before reuse.</p>
<b>Prevention</b>	<p>Avoid breathing dust/fume/gas/mist/ vapors/spray.  Contaminated work clothing must not be allowed out of the workplace.  Use only outdoors or in a well-ventilated area.  Wash all exposed areas thoroughly after handling.  Wear protective gloves.</p>
<b>Storage</b>	<p>Store in a well-ventilated place. Keep container tightly closed.  Store locked up.</p>
<b>Disposal</b>	<p>Dispose of contents/container in accordance with local, state, national and federal regulations.</p>
<b>Ingredients of unknown toxicity</b>	0%
<b>Hazards not Otherwise Classified</b>	
<b>Form</b>	Viscous Liquid
<b>OSHA/HCS Status</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200)
<b>Emergency Overview</b>	Warning: Causes skin and eye irritation. May cause allergic skin reaction. May cause respiratory tract irritation. Heated material can cause thermal burns.
<b>Potential Acute Health Effects</b>	<p>Inhalation - Slightly irritating to respiratory system.</p> <p>Ingestion - Not expected to be harmful under normal conditions of use.</p> <p>Skin - Irritating to the skin. May cause sensitization by skin contact. Heated material can cause thermal burns.</p> <p>Eyes - Irritating to the eyes. Heated material can cause thermal burns.</p>
<b>Potential Chronic Health Effects</b>	<p>Chronic effects: No known significant effects or critical hazards.</p> <p>Carcinogenicity: No known significant effects or critical hazards.</p> <p>Mutagenicity: No known significant effects or critical hazards.</p> <p>Teratogenicity: No known significant effects or critical hazards.</p> <p>Developmental effects: No known significant effects or critical hazards.</p> <p>Fertility effects: No known significant effects or critical hazards.</p> <p>Target organs: Review Section 2 and 11 for any additional assessments.</p>

Target Organs Skin, Eyes, Respiratory System

Over-Exposure Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing

Signs/Symptoms Ingestion: No specific data

Skin: Adverse symptoms may include the following: irritation, redness

Eyes: Adverse symptoms may include the following: pain or irritation, watering, redness.

Medical conditions aggravated by over-exposure: Pre-existing skin disorders may be aggravated by over-exposure to this product.

### Section 3. Ingredients

CAS	Ingredient Name	Weight %
106-89-8	Oxirane, (chloromethyl)-	< 0.1 %
25068-38-6	Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane	30-70 %
68475-94-5	Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin	30-70 %

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First-Aid Measures

**Eye** Immediately flush with plenty of clean running water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes lifting eyelids occasionally. Have eyes examined immediately and tested by medical personnel.

**Skin** In case of contact, immediately flush contaminated skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. For hot product, flush contaminated skin with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze. Get medical attention immediately.

**Inhalation** Remove patient from exposure, keep warm and at rest. If breathing is labored, qualified personnel should administer oxygen. Apply artificial respiration if breathing has ceased or shows signs of failing.

**Ingestion** Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed Do NOT Induce Vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. In general, no treatment is necessary unless large quantities of product are ingested. Give 1 or 2 glasses of water to drink. Call medical personnel for immediate attention.

**Protection of First Aid Personnel** In the event of body contact with molten material, immediately cool with running water. Do not attempt to remove material from skin. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

**Note to Physician** No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## Section 5. Fire Fighting Measures

Suitable Extinguishing Media	Extinguishing media: Use alcohol-resistant foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.
Unsuitable Extinguishing Media	N/A
Flammability	In a fire or if heated, a pressure increase will occur and the container may burst.
Special Exposure Hazards	Special Exposure Hazards: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous Combustion Products	Hazardous Combustion Products: Decomposition products may include the following materials: Carbon Oxides
Protective Equipment	Use self-contained breathing apparatus and full protective clothing (Bunker Gear) due to toxic vapors and combustion products which can cause serious respiratory problems.

## Section 6. Accidental Release Measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8)
Environmental Precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air)
Large Spills	Stop leak if without risk. Move containers from spill area. 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 (e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Small Spills	Stop leak if without risk. Move containers from spill area. For molten material, allow the product to cool and solidify. Vacuum or sweep up material and place in a designated, labeled appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and Storage

### Handling

Put on appropriate personal protective equipment (see section 8). Do not eat, drink or smoke when using this product. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing.. Avoid breathing of dust created by cutting, sanding, grinding or machining. Avoid breathing of vapors or mist.. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion. dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Follow US NFPA 30, "Flammable & Combustible Liquids Code", or other national, state and local codes on safe handling of flammable liquids. Train workers in the recognition and prevention of hazards associated with the storage, handling and transfer of flammable liquids in the plant. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Note: This resin may be handled, shipped and stored at elevated temperatures in bulk.

## Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Oxirane, (chloromethyl)-	N/A	N/A	N/A
	Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane	N/A	N/A	N/A
	Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin	N/A	N/A	N/A
<b>Personal Protective Equipment</b>  VENTILATION RESPIRATOR FACE_SHIELD CHEMICAL_GOGGLES EYE WASH AND SAFETY SHOWER PROTECTIVE CLOTHING  RUBBER_BOOTS GLOVES	Goggles, Gloves, Apron, Face Shield, Respirator, PROTECTIVE CLOTHING, RUBBER BOOTS, VENTILATION, CHEMICAL GOGGLES, EYE WASH AND SAFETY SHOWER  Have proper ventilation DO NOT BREATHE FUMES! Use a NIOSH-approved respirator. Face Shield Chemical Safety Goggles with Side Shields. Indirect Vented Goggles. Eye bath and Safety Shower should be available when working with this material. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH. Please wear rubber boots at all times Neoprene, Nitrile-Butadiene rubber, butyl rubber. Thin disposable gloves should be avoided for repeated or long term use.			
<b>Recommended Monitoring Procedures</b>	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.			
<b>Engineering Measures</b>	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.			
<b>Hygiene Measures</b>	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.			
<b>Respiratory</b>	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.			
<b>Eye/Face Protection</b>	Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).			
<b>Skin Protection</b>	The following protective materials are recommended. Gloves - neoprene, nitrile-butadiene rubber, butyl rubber. Thin disposable gloves should be avoided for repeated or long term use. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.			
<b>Environmental Exposure Controls</b>	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.			

## Section 9. Physical and Chemical Properties

Physical State	Viscous Liquid
Color	Blue
Odor	Slight
Odor Threshold	N/A
Solubility	N/A
Partition coefficient Water/n-octanol	N/A
VOC%	Negligible
Viscosity	N/A
Specific Gravity	1.17
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A
Flash Point	484°F (251° C)
FP Method	PMCC ASTM D 93
Ph	N/A
Melting Point	N/A
Boiling Point	>500°F (>260°C)
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	N/A
Flammability	1
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	0.03 mbar @ 77°C (171°F)
Vapor Density	N/A

## Section 10. Stability and Reactivity

Chemical Stability	Stable under recommended storage conditions
Hazardous Polymerization	Will not occur
Incompatibilities	Strong oxidizing materials
Materials to Avoid	Reactive or incompatible with the following materials: Oxidizing materials, strong acids, strong alkalis.
Other Hazards	Reacts with considerable heat release with some curing agents.
Hazardous Decomposition Products	Decomposition products may include the following materials: Carbon Oxides

## Section 11. Toxicological Information

### Acute Toxicity Data

4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer:

LD50 Oral - Rat - 30,000 mg/kg

LD50 Dermal - Rat - >1,200 mg/kg

### Other Toxicological Information

Carcinogenicity

Classification

Ingredient Name: 4, 4' - Isopropylidenediphenol-Epichlorohydrin Copolymer

ACGIH: Not Classified

IARC: Not Classified

NTP: Not Listed

OSHA: Not Regulated

EU: Not Classified

Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin

LD50 Oral (Rat): 2,020 mg/kg

Oxiranemethanol

LD50 Oral (Rat): 420 mg/kg

LD50 Oral (Mouse): 431 mg/kg

LC50 Inhalation (Mouse): 450 ppm/4 h

LC50 Inhalation (Rat): 1.25 mg/4 h

LD50 Dermal (Rabbit): 1,980 mg/kg

Epichlorohydrin

LD50 Oral (Rat): 90 mg/kg

LD50 Oral (Mouse): 195 mg/kg

LD50 Oral (Rabbit): 345 mg/kg

LD50 Oral (Guinea Pig): 280 mg/kg

LC50 Inhalation (Rat): 250 ppm/8 h

LC50 Inhalation (Mouse): 3 mg/1/2 h

LC50 Inhalation (Rat): 3 mg/1/2 h

LD50 Dermal (Mouse): 250 mg/kg

LD50 Dermal (Rabbit): 515 mg/kg

Carcinogenicity

Classification

Ingredient Name: Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin

ACGIH: Not Classified

IARC: Not Classified

NTP: Not Listed

OSHA: Not Regulated

EU: Not Classified

Oxiranemethanol

ACGIH: Confirmed animal carcinogen with unknown relevance to humans.

IARC: IARC Group 2A, probably carcinogenic to humans

NTP: NTP reasonably anticipated to be carcinogenic

OSHA: Not Regulated

EU: May Cause Cancer

Epichlorohydrin

ACGIH: Confirmed animal carcinogen with unknown relevance to humans.

IARC: IARC Group 2A, probably carcinogenic to humans

NTP: Possible

OSHA: Not Regulated

EU: May Cause Cancer



## Section 12. Ecological Information

Environmental effects No known significant effects or critical hazards.

## Section 13. Disposal

Disposal This product is considered hazardous under RCRA 261D for general industrial waste.

Disclaimer The generation of waste should be avoided or minimized wherever possible.

Disclaimer Part 2 Disposal should be in accordance with local, state, provincial and national regulations. This material is not a hazardous waste under RCRA 40 CFR 261. Small quantities should be treated with a liquid decontaminate. The treated waste is not a hazardous material under RCRA 40 CFR 261. Chemical waste, even small quantities, should never be poured down drains, sewers or waterways.

Disclaimer Part 3 Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

## Section 14. Transport Information

UN Number N/A

UN Proper Shipping Name N/A

DOT Classification NOT REGULATED

Packing Group N/A

DOT NOT REGULATED This section is provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION - Not Regulated

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

All Regulatory Classification This product is not regulated by CFR, TDG, IMO, IMDG or IATA

## Section 15. Regulatory Information

HCS Classification	Irritating material, Sensitizing material
Sara 311/312 Hazards	Acute Health Hazard
SARA 313 Toxic Chemicals	None
SARA 302 Extremely Hazardous Substances	None
State Regulations	Massachusetts RTK Substances - None required  New Jersey RTK Hazardous Substances - None required  Pennsylvania RTK Hazardous Substances - None required  California Prop. 65: WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm: Oxirane,(phenoxyethyl)- 122-60-1
Regulatory for Canada	WHMIS (Canada) Class D-2B: Material causing other toxic effects (Toxic) Canadian Lists: Canadian NPRI: None required.
International Regulations	Chemical Inventories: Europe inventory: All components are listed or exempted. Australia inventory (AICS): All components are listed or exempted China inventory (IECSC): All components are listed or exempted Japan inventory (ENCSC): All components are listed or exempted Japan inventory (ISHL): Not determined. Korea inventory (KECI): All components are listed or exempted New Zealand Inventory of Chemicals (NZIoC): Not determined Philippines inventory (PICCS): All components are listed or exempted. Canada inventory: All components are listed or exempted United States inventory (TSCA 8b): All components are listed or exempted

## Section 16. Other Information

Revision Date	4/16/2015
HMIS Rating (Not Regulated)	The HMIS Rating for this product is: Health: 2 Flammability: 1 Reactivity: 0  0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe  For Information Purposes Only - No Longer Regulated
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