



Safety Data Sheet

RF 475

Section 1. Identification

Product Identifier	RF 475
Synonyms	Bifunctional reactive diluent for epoxy
Manufacturer Stock Numbers	10614
Recommended use	Bifunctional reactive diluent for epoxy
Uses advised against	Avoid strong acids, strong bases, strong oxidizers, amines, mercaptans
Manufacturer Contact Address	Resin Formulators 18027 Bishop Avenue Carson, CA, 90746 USA
Phone	(310) 204-6159
Emergency Phone	(800) 424-9300 CHEMTREC
Fax	(310) 202-7247
Email	sales@evroberts.com
Website	http://www.evroberts.com

Section 2. Hazards Identification

Classification	EYE DAMAGE/IRRITATION - Category 2A SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (Single E - Category 3)
Signal Word	Warning
Pictogram	
Hazard Statements	Causes serious eye irritation May cause respiratory irritation

	Moderately irritating to skin
Precautionary Statements	
Response	Call a poison center/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.
Prevention	Avoid breathing dust/fume/gas/mist/ vapors/spray. Use only outdoors or in a well-ventilated area. Wash ...thoroughly after handling. Wear eye protection/face protection.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Refer to manufacturer/Supplier for information on recovery/recycling
Ingredients of unknown toxicity	0%
Hazards not Otherwise Classified	
Form	Liquid
OSHA/HCS Status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200)
EMERGENCY OVERVIEW	WARNING! CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE RESPIRATORY TRACT IRRITATION. HEATED MATERIAL CAN CAUSE THERMAL BURNS.
Potential Health Effects	
Inhalation	Slightly irritating to eyes and respiratory tract.
Ingestion	No hazard in normal industrial use.
Skin	Irritating to skin. May cause sensitization by skin contact. Heated material can cause thermal burns.
Potential Chronic Health Effects	
Chronic Health Effects	Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	No known significant effects or critical hazards
Mutagenicity	No known significant effects or critical hazards
Teratogenicity	No known significant effects or critical hazards
Developmental Effects	No known significant effects or critical hazards.
Fertility Effects	No known significant effects or critical hazards.
Target Organs	Review Section 2 and 11 for any additional assessments.
Over-exposure signs/symptoms	
Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing.
Ingestion	No specific data.
Skin	Adverse symptoms may include the following: irritation, redness.
Eye	Adverse symptoms may include the following: irritation, watering, redness.

Aggravated Medical Condition

Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to this product. Preexisting skin or respiratory tract allergies may increase the chance of developing increased allergy symptoms from exposure to this product.

Section 3. Ingredients

CAS	Ingredient Name	Weight %
17557-23-2	Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxyethylene)]bis-	100 %

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 Contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing 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	Move exposed person to fresh air. Keep person warm and at rest. If not breathing, breathing is irregular or respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if adverse health effects persist or are severe.
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	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Note to Physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
More details	See section 11 for more detailed information on health effects and symptoms.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media

Flammability of the product:

In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Extinguishing media:

Use alcohol-resistant foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.

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:

Decomposition products may include the following materials:

Carbon Oxides

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Unsuitable Extinguishing Media

None known.

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. 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. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. 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. 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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis-(oxymethylene)]bis-	N/A	none	N/A
<p>Personal Protective Equipment</p> <p>Consult local authorities</p> <p>Recommended Monitoring Procedures</p>	<p>Goggles, Gloves, Apron, Face Shield, Respirator, FULL SUIT</p> <p>Consult local authorities for acceptable exposure limits.</p> <p>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.</p>			
Engineering Measures	Use only with adequate ventilation. 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 containments below any recommended or statutory limits.			
Hygiene Measures	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.			
Respiratory	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.			
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.			
Eye protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicated this is necessary to avoid exposure to liquid splashed, mist or dusts.			
Skin Protection	Personal protective equipment for the body should be selected based on the task being performed and the risk involved and should be approved by a specialist before handling the product.			
Environmental Exposure Controls	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	Liquid
Color	Colorless
Odor	N/A
Odor Threshold	N/A
Solubility	Negligible
Partition coefficient Water/n-octanol	N/A
VOC%	N/A
Viscosity	N/A
Specific Gravity	1
Density lbs/Gal	1.05
Pounds per Cubic Foot	N/A
Flash Point	>93.33°C (199.99°F)
FP Method	Setaflash Close Cup ASTMD 3828
Ph	N/A
Melting Point	N/A
Boiling Point	Greater than 300°F
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	N/A
Flammability	N/A
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	Less than 1.33 mbar
Vapor Density	N/A

Section 10. Stability and Reactivity

Chemical Stability	Stable under recommended storage conditions
Hazardous Polymerization	Will not occur
Conditions to Avoid	Strong oxidizer. Avoid all possible sources of ignition (spark or flame). Extremes of temperature and direct sunlight.
Materials to Avoid	Reactive or incompatible with the following materials: Strong oxidizing agents, strong acids, aliphatic amines.
Other Hazards	Reacts with considerable heat release with some curing agents.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Acute Toxicity Ingredient name Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)]bis-
LD50 Oral - Rat - 4,500 mg/kg
LD50 Dermal - Rat - >2,000 mg/kg

Other Toxicological Information

Carcinogenicity Classification Ingredient name Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)]bis-
ACGIH: Not classified
IARC: Not classified
NTP: Not listed
OSHA: Not regulated

Section 12. Ecological Information

Environmental effects No known significant effects or critical hazards.
Other Adverse Effects No known significant effects or critical hazards.

Section 13. Disposal

Waste disposal The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport Information

UN Number N/A
UN Proper Shipping Name N/A
DOT Classification N/A
Packing Group N/A
All Regulatory Classification This product is not regulated by CFR, TDG, IMO, IMDG or IATA
Disclaimer The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

Section 15. Regulatory Information

HCS Classification	Irritating material, Sensitizing material, Target organ effects
U.S. Federal Regulations	SARA 311/312 CLASSIFICATION: Immediate (acute) health hazard. SARA 313 - SUPPLIER NOTIFICATION: This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372. None Required SARA 302 EXTREMELY HAZARDOUS SUBSTANCES: None required
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: Epichlorohydrin - 106-89-8.
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. Korea inventory (KECI): All components are listed or exempted. Philippines inventory (PICCS): All components are listed or exempted. Japan inventory (ENCS): 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

5/13/2015

HMIS Rating (Not Regulated) The HMIS Rating for this product is:
Health: 2 Flammability: 2 Reactivity: 0

0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

For Information Purposes Only - No Longer Regulated

Disclaimer

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