Safety Data Sheet

RF 20 Epoxy Curing Agent

Section 1. Identification

Product Identifier	RF 20 Epoxy Curing Agent
Synonyms	10037; RF 20
Manufacturer Stock Numbers	10037
Recommended use	Epoxy Curing Agent
Uses advised against	Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated. CAUTION: Do not inhale as aerosol or vapors are TOXIC and can be FATAL
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 1 SENSITIZATION - SKIN - Category 1 SKIN CORROSION/IRRITATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (Single E - Category 3 TOXIC TO REPRODUCTION - Category 2
Signal Word	Warning

Pictogram	
Hazard Statements	Causes serious eye damage Causes severe skin burns and eye damage Corrosive to the respiratory tract. May cause an allergic skin reaction May cause respiratory irritation Suspected of damaging fertility or the unborn child.
Precautionary Statements	
Response	Call a poison center or doctor immediately if you feel unwell. Get medical advice/attention if you feel unwell. If exposed or concerned: 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 (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. If swallowed, do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side. If swallowed: Call a poison center or doctor immediately. Product is moderately toxic. If swallowed: Rinse mouth. Do NOT induce vomiting. Specific treatment is urgent (see specific instructions on this label) Wash contaminated clothing before reuse.
Prevention	Contaminated work clothing must not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/ vapors/spray. Do not eat, drink or smoke when using this product. Do not handle until all safety precautions have been read and understood. In case of inadequate ventilation wear respiratory protection. Obtain special instructions before use. Use only outdoors or in a well-ventilated area. Wash all exposed areas thoroughly after handling. Wear protective Butyl Gloves, Face Shield, Eye Bath and Safety Shower. Wear protective gloves/protective clothing/eye protection/face protection.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local, federal, national and state regulations. (see accidental release measures, section 6)
Ingredients of unknown toxicity	0%
Hazards not Otherwise Classified	
Emergency Overview	Warning: This product contains a component that is toxic by inhalation when aerosolized or sprayed. Please refer to Section 11 of the SDS for toxicity information. Review the toxicity information against your intended use. If product is not being aerosolized or sprayed, the inhalation toxicity may not be applicable.

This product:
May cause sensitization by skin contact
Is Corrosive
Is Very TOXIC by Inhalation
Is A Respiratory Irritant

Section 3. Ingredients

CAS	Ingredient Name	Weight %
80-05-7	Phenol, 4,4'-(1-methylethylidene)bis-	< 25 %
111-40-0	1,2-Ethanediamine, N-(2-aminoethyl)-	< 25 %
28063-82-3	1,2-Ethanediamine, N-(2-aminoethyl)-, polymer with oxirane	> 50 %

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

Section 4. First-Aid Measures

General advice	Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
Inhalation	If breathing has stopped or is labored, give assisted respirations and qualified personnel should administer oxygen. Apply artificial respiration if breathing has ceased or shows signs of failing. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.
Skin	CORROSIVE to the skin. May cause skin sensitization. Wash affected areas thoroughly with soap and water. Obtain medical attention IMMEDIATELY. Contaminated clothing should be thoroughly cleaned before reuse. Can not decontaminate leather articles.
Notes To Physician	Application of corticosteroid cream has been effective in treating skin irritation. Initiate an maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Flush immediately with copious amounts of water.
Eye	CORROSIVE to the eyes, may cause blindness. Immediately flush eyes with running water for a minimum of 1 hour. Hold eyelids open during flushing. Obtain medical attention IMMEDIATELY.
Ingestion	Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
Signs and Symptoms	Irritation as noted above. Lung damage (scarring, brochitis, emphysema) may be evidenced by shortness of breath, especially on exertion, and may be accopanied by evidenced by rashes, especially hives and may be evidenced by giddiness, headache, dizziness and nausea; in extreme cases, unconsciousness, respiratory depression and death may occur.
Most Important Symptoms/Effects - Acuate and Delayed	Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause sore throat and allergies along with skin disorders and/or eye disease, and can cause Asthma and/or Liver and Kidney Disorders.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	Extinguishing media: Use alcohol-resistant foam, carbon dioxide (CO2), dry chemical, dry sand, or limestone powder.
Unsuitable Extinguishing Media	Specific hazards: Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated.
Flash Point	280°F (138°C)
Fire and Explosion Hazards	Containers may burst under intense heat.
Extinguishing media	Carbon dioxide, dry chemical or appropriate foam. If water is used, very large quantities are required. Reaction between epoxies and this curing agent may be vigorous. Contain runoff water with temporary barriers.
Protective Equipment	Protective Equipment: Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear a NIOSH-approved respirator as required to prevent over-exposure in accordance with 29 CFR 1910-134 for fire fighting if necessary.
Further Information	Further Information: Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Hazardous Combustion Products	CO, CO2, NOx and some HCN
Extinguishing media	Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical

Section 6. Accidental Release Measures

Major Spills	For Major Spills, call CHEMTREC at 1-800-424-9300
Environmental Precautions	Construct a dike to prevent spreading
Spills, Leaks or Releases	Clean up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including respiratory protection. Evacuate the area. Prevent further leakage, spillage or entry into drains. Contain and absorb large spillages onto an inert, non-flammable absorbent carrier (such as earth or sand), Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spillage area clean with liquid decontaminant. Notify applicable government authorities if release is reportable.

Section 7. Handling and Storage

Handling	Avoid personal contact with the product or reaction mixture. Use only with adequate ventilation to ensure that the defined occupational exposure limit is not exceeded. The efficiency of the ventilation must be monitored regularly because of the possibility of blockage. Avoid breathing aerosols, mists and vapors. When the product is sprayed or heated, an approved MSHA/NIOSH positive-pressure, supplied-air respirator may be required.
CAUTION	SEVERE EYE IRRITANT, skin and respiratory tract. May cause skin sensitization. May cause CNS depression. Do not get into eyes, on skin or on clothing. Do not breathe vapors or mists.
Storage Requirements	Keep containers properly sealed stored indoors, in a cool dry well ventilated area. Keep contents away from open flames and high temperatures. Keep container upright and tightly closed. Do not pressurize drum containers to empty them. Heating this curing agent in the presence of air may cause thermal and oxidative decomposition. Containers, even those that have been emptied, can cause hazardous product residues. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather can not be decontaminated and should be destroyed to prevent reuse.
Storage Temperature	Ideal storage temperature is 60-100 Degrees F (16-38 Degrees C)
Storage	Store in a tightly closed container in a cool, well ventilated area
Shelf Life	12 Months @ 77°F (25°C)

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Phenol, 4,4'-(1-methylethylidene)bis-	N/A	N/A	N/A
	1,2-Ethanediamine, N-(2-aminoethyl)-	1ppm, 4mg/m3 Time Weighted Average (TWA)	N/A	N/A
	1,2-Ethanediamine, N-(2-aminoethyl)-, polymer with oxirane	N/A	N/A	N/A

Personal Protective Equipment	Goggles, Gloves, Apron, Face Shield, Respirator, PROTECTIVE CLOTHING, RUBBER BOOTS, VENTILATION, CHEMICAL GOGGLES, EYE WASH AND SAFETY SHOWER
Preventive Measures	Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.
Engineering Controls	Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. Follow guidelines in the ACGIH publication "Industrial Ventilation".
Eye Protection	Chemical safety goggles. If there is a potential for splashing, use a full-face shield.
Skin Protection	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.
Respiratory Protection	Use a NIOSH/MSHA approved positive pressure air-supplied respirator equipped with a full facepiece, or an air-supplied hood, if airborne concentrations exceed or are expected to exceed the TLV.
Exposure Guidelines	Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with this product. Once a person is diagnosed as sensitized, no further exposure to any sensitizer should be permitted.

Section 9. Physical and Chemical Properties

Physical State	Liquid
Color	Colorless to Light Yellow
Odor	Ammoniacal / Fishy
Odor Threshold	N/A
Solubility	Complete
Partition coefficient Water/n-octanol	N/A
VOC%	< 1
Viscosity	N/A
Specific Gravity	1.07
Density lbs/Gal	N/A
Pounds per Cubic Foot	N/A
Flash Point	280°F (>137.78°C)
FP Method	PMCC
Ph	Alkaline
Melting Point	-31°F (-35°C)
Boiling Point	500°F (260° C)
Boiling Range	N/A
LEL	N/A
UEL	N/A
Evaporation Rate	0.001
Flammability	1
Decomposition Temperature	N/A
Auto-ignition Temperature	N/A
Vapor Pressure	< 1.00 mmHg @ 70°F (21° C)
Vapor Density	N/A

Section 10. Stability and Reactivity

Chemical Stability	Stable at room temperature
Hazardous Decomposition Products	Highly unlikely under normal industrial use. See section 5.
Conditions to Avoid	Avoid high temperatures. Avoid flames and contact with strong oxidizing agents.
Hazardous Polymerization	Nitrogen oxides, carbon monoxide and unidentified organic compounds may be formed during combustion.

Section 11. Toxicological Information

Target Organs	Skin, Eyes, Respiratory System and possible Lung Damage
Toxicological Test Data	Diethylenetriamine (DETA): Inhalation: Severe Irritant LC50 (4h): <0.07-<0.3 mg/l, (Rat) Skin Contact: Severe Skin Irritant: LD50: <2,000 mg/kg, (Rabbit) Eye Contact: Severe Eye Irritant Ingestion: Severe Irritant: LD50: <2,000 mg/kg (Rat)

Section 12. Ecological Information

Environmental Fate and Distribution	It is unlikely that significant environmental exposure in the air or water will arise, based on consideration of the production and use of the substance.

Section 13. Disposal

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	2079
UN Proper Shipping Name	Diethylenetriamine
DOT Classification	8 (Corrosive Material)
Packing Group	II
Transport Information	DOT (US): UN Number: UN 2079 Class: 8 Packing Group: II Proper Shipping Name: Diethylenetriamine Label: Corrosive IMDG: UN Number: UN 2079 Class: 8 Packing Group: II Proper Shipping Name: Diethylenetriamine Label: Corrosive TDG: UN Number: UN 2079 Class: 8 Packing Group: II Proper Shipping Name: Diethylenetriamine Label: Corrosive IATA: UN Number: UN 2079 Class: 8 Packing Group: II Proper Shipping Name: Diethylenetriamine Label: Corrosive

Section 15. Regulatory Information

OSHA Hazard Communication Standard	OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Classes: Corrosive, Sensitizer
Regulatory Information	USA (TSCA) Included on inventory EU (EINECS) Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer Canadian (DSL) Included on Inventory. Australia (AICS) Included on Inventory. Japan (ENCS) Included on Inventory. South Korea (ECL) Included on Inventory. China (SEPA) Included on Inventory. Philippines (PICCS) Included on Inventory.
U.S. Federal Regulations	SARA 311/312 (40 CFR 370) Hazard Classification: Acute Health hazard EPA SARA Title III Section 313 (40 CFR 372) Component(s) above “de minimis” level: Phenol, 4,4’-(1-methylethylidene) bis- US. California Safe Drinking Water & Toxic Enforcement Act (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. WHMIS Hazard Classification: Very Toxic Material Causing Other Toxic Effects, Corrosive Material

Section 16. Other Information

Revision Date	4/16/2015
HMIS Rating (Not Regulated)	The HMIS Rating for this product is: Health: 3 Flammability: 1 Reactivity: 0 For Information Purposes Only - No Longer Regulated
Disclaimer	NOTICE: While the descriptions, designs data, and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. It is provided independently of any sale of the product for purpose of hazard communication as part of E.V. Roberts' product safety program. Many factors may affect processing or application/use. We recommend you make tests to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including warranties or merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sales. Further, you expressly understand and agree that the descriptions, designs, data and information furnished by E.V. Roberts hereunder are given gratis and E.V. Roberts assumes no obligation or liability for the description, designs, data and information given or results obtained, all such being given and accepted at your risk. To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency. E.V. Roberts does not undertake to furnish advice on such matters.