



Safety Data Sheet

RF 281 (Mod 2)

Section 1. Identification

Product Identifier RF 281 (Mod 2)
Synonyms Epoxy adhesive
Manufacturer Stock Numbers 30666

Recommended use Epoxy Adhesive
Uses advised against Avoid high temperatures. Avoid flames. Avoid strong acids, strong bases, strong oxidizers, amines, mercaptans

Manufacturer Contact
Address Resin Formulators
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Carson, CA, 90746
USA

Phone
(310) 204-6159

Emergency Phone
(800) 424-9300
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(310) 202-7247

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<http://www.evroberts.com>

Section 2. Hazards Identification

Classification ACUTE TOXICITY - INHALATION - Category 5
ACUTE TOXICITY - ORAL - Category 4
EYE DAMAGE/IRRITATION - Category 2B
SKIN CORROSION/IRRITATION - Category 2

Signal Word Warning

Pictogram



Hazard Statements	Causes eye irritation Harmful if swallowed May be harmful if inhaled Moderately irritating to skin
Precautionary Statements	
Response	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: Call a POISON CENTER or doctor/... if you feel unwell If swallowed: Call a poison center/doctor/ ... / if you feel unwell. Rinse mouth.
Prevention	Do not eat, drink or smoke when using this product. Wash ...thoroughly after handling.
Storage	N/A
Disposal	Dispose of contents/container to ...

Ingredients of unknown toxicity 0%

Hazards not Otherwise Classified

EMERGENCY OVERVIEW	WARNING! Possible cancer hazard. Suspected of causing genetic defects. HARMFUL IF INHALED. EYE IRRITANT. HARMFUL IF SWALLOWED. CARDIAC SENSITIZER. SEVERE SKIN IRRITANT. SKIN SENSITIZER. Black Liquid Slight Odor.
Eye	Severely irritating. If not removed promptly, will injure eye tissue, which may result in permanent damage.
Skin Contact	Repeated or prolonged skin contact may result in severe irritation. Repeated and/or prolonged contact may cause skin sensitization.
Inhalation	Vapors and/or aerosols which may be formed at elevated temperatures may cause systemic effect.
Ingestion	Irritant and may cause nausea and vomiting.

Section 3. Ingredients

CAS	Ingredient Name	Weight %
1333-86-4	Carbon black	<0.5 %
1344-28-1	Aluminum oxide (Al ₂ O ₃)	>50 %
330-54-1	Urea, N'-(3,4-dichlorophenyl)-1,1-dimethyl-	1-5 %
2426-08-6	butyl glycidyl ether	1-5 %
Proprietary2	** Epoxy Resin	20-35 %
	silicon dioxide	Unknown

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	Remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation, redness, or a burning sensation develops and persists, obtain medical advice. Contaminated clothing should be thoroughly cleaned before reuse. Contaminated leather articles can not be decontaminated and should be destroyed.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
Ingestion	Do not induce vomiting. The victim should drink several glasses of water to dilute the ingested substance. If vomiting occurs naturally, keep airway clear. Get medical attention. Never give anything by mouth if the victim is rapidly losing consciousness, or is unconscious or convulsing.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media	<p>Auto Ignition Temperature: Not Available</p> <p>Flash Point: >200°F</p> <p>Extinguishing media: Use alcohol-resistant foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.</p> <p>Special Fire Fighting Procedures: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.</p> <p>Hazardous Combustion Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, low molecular weight hydrocarbons and unknown organics.</p> <p>Flammable or Explosive Limits: Lower Limits : Not determined. Upper Limits : Not determined.</p>
Unsuitable Extinguishing Media	N/A

Section 6. Accidental Release Measures

Spill and Leak Procedures	Evacuate and ventilate immediate area and dike area to contain spill. Use cautious judgment when cleaning up large spills. Clean up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including respiratory protection, gloves and splash goggles. All spilled material, absorbed waste and wash water must be disposed of in accordance with all federal, state and local regulations.
Environmental Precautions	For safety and environmental precaution, please review the entire Safety Data Sheet for necessary information.

Section 7. Handling and Storage

Storage Temperature	Ideal storage temperature is 25°C
Shelf Life	90 Days
Storage	Do not store near acids. Keep containers tightly closed in a dry, cool and well ventilated place.
Sensitivity to Static Electricity	No
Special Sensitivity	No
Sensitivity to Mechanical Impact	No

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limits	Ingredient Name	ACGIH TLV	OSHA PEL	STEL
	Carbon black	3.5 mg/m3 TWA	3.5 mg/m3 TWA	N/A
	Aluminum oxide (Al2O3)	10 mg/m3	10 mg/m3	N/A
	Urea, N'-(3,4-dichlorophenyl)-1,1-dimethyl-	N/A	N/A	N/A
	butyl glycidyl ether	N/A	N/A	N/A
	** Epoxy Resin	N/A	N/A	N/A
	silicon dioxide	N/A	N/A	N/A
Personal Protective Equipment Exposure Guidelines	Goggles, Gloves, Apron, Face Shield, Respirator, PROTECTIVE CLOTHING			
	COMPONENTS			
	<p>*** Aluminum Oxide *** Exposure Limits ACGIH : 10 mg/m3 PEL (total dust) ; 5 mg/m3 PEL (respirable fraction, listed under Particulates not otherwise regular). OSHA : 15 ppm TWA (respirable fraction); 5 mg/m3 TWA (respirable fraction); 50 ppm TWA (total dust) Mfg, Working Standard : Manufacturer 6 mg/m3</p>			
	<p>*** 3-(3,4-DICHLOROPHENYL -1,01 DEMETHYLUREA *** Exposure Limits ACGIH : ACCGIH-TWA: 10 MGM3 OSHA : OSHA- PEL; 10mg/me</p>			
	<p>*** SILICON DIOXIDE, CRYSTALLINE FREE *** Exposure Limits ACGIH : 10 mg/m3 PEL (total dust) ; 5 mg/m3 PEL (respirable fraction, listed under Particulates not otherwise regular). OSHA : 15 ppm TWA (respirable fraction); 5 mg/m3 TWA (respirable fraction); 50 ppm TWA (total dust)</p>			
	<p>*** BUTYL GLYCIDYL ETHER *** Exposure Limits ACGIH : Skin – potential significant contribution to overall exposure by the cutaneous route 3 ppm TWA. OSHA : 50 ppm TWA; 270 mg/m3 TWA</p>			
	<p>*** CARBON BLACK *** Exposure Limits ACGIH : 3.5 mg/m3 TWA. OSHA : 3.5 mg/m3 TWA</p>			
Engineering controls	Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.			
Eye Protection	Chemical safety goggles. If there is a potential for splashing, use a full-face shield.			
Hand protection	Neoprene gloves. Butyl-rubber. EVAL-Laminate			
Body Protection	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.			

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.

Section 9. Physical and Chemical Properties

Physical State	Liquid
Color	Black
Odor	Slight
Odor Threshold	N/A
Solubility	Insoluble
Partition coefficient Water/n-octanol	N/A
VOC%	N/A
Viscosity	N/A
Specific Gravity	2.35
Density lbs/Gal	19.6
Pounds per Cubic Foot	N/A
Flash Point	> 200°F
FP Method	N/A
Ph	N/A
Melting Point	N/A
Boiling Point	N/A
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	<0.1
Vapor Density	N/A

Section 10. Stability and Reactivity

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid high temperatures. Material may emit toxic or irritation fumes.
Materials to Avoid	Amines, Acids, Oxidizers, Polyamide resins, Alcohols
Hazardous Decomposition Products	Hydrocarbons, Carbon Monoxide, Carbon Dioxide and Aniline
Hazardous Polymerization	Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

Section 11. Toxicological Information

Route of Entry	Eye Contact, Skin Contact, Inhalation, Ingestion
Carcinogenicity	*** COMPONENT = CARBON BLACK *** IARC : Yes (2B) NTP : No OSHA : Not Listed
POTENTIAL HEALTH EFFECTS:	
Skin Irritation	Severe skin irritant. Repeated and/or prolonged contact may cause skin sensitization.
Oral Toxicity	*** COMPONENT = ALUMINUM OXIDE *** No hazard in normal industrial use. Ingestion may cause irritation of the gastrointestinal tract. Non-toxic. *** COMPONENT = EPOXY RESIN *** Oral LD50: Rat > 5000 mg/kg Unlikely to be hazardous if swallowed. *** COMPONENT = 3-(3,4-Dichlorophenyl) -1,1-dimethylurea *** Oral LD50: Rat 3.4 g/kg Low oral toxicity. *** COMPONENT = Butyl Glycidyl ether *** Oral LD50: Rat 1000 mg/kg May cause nausea, vomiting and diarrhea. *** COMPONENT = Carbon Black *** Oral LD50: Rat > 8000 mg/kg Unlikely to be hazardous if swallowed. Ingestion may cause irritation of the gastrointestinal track.
Dermal Toxicity	*** COMPONENT = ALUMINUM OXIDE *** Slight/mild irritant. *** COMPONENT = EPOXY RESIN *** Dermal LD50: Rabbit > 6000 mg/kg Repeated or prolonged skin contact may result in moderate irritation. Repeated and/or prolonged contact may cause skin sensitization. *** COMPONENT = 3-(3,4-Dichlorophenyl) -1,1-dimethylurea *** Dermal LD50: Rabbit > 2 g/kg Repeated or prolonged skin contact may result in moderate irritation. May cause methemoglobinemia. *** COMPONENT = Butyl Glycidyl ether *** Dermal LD50: Rabbit 788 mg/kg Severely irritating; may cause permanent skin damage. Repeated and/or prolonged contact may cause irritation and skin sensitization.
Inhalation Toxicity	*** COMPONENT = Carbon Black *** Non-irritant. *** COMPONENT = ALUMINUM OXIDE *** Dust may cause irritation. *** COMPONENT = EPOXY RESIN *** Unlikely to be hazardous by inhalation because of the low vapor pressure of the

material at ambient temperature.

*** COMPONENT = 3-(3,4-Dichlorophenyl) -1,1-dimethylurea ***
May cause irritation to eyes and respiratory system.

*** COMPONENT = Butyl Glycidyl ether ***
Inhalation LC50: (8hr) Rat 1030 ppm
Vapor or aerosol, if generated, can cause irritation of the eyes, nose and respiratory tract.

*** COMPONENT = Carbon Black ***
Inhalation LC50: (1hr) Rat 6750 mg/m3
Inhalation of high concentrations of dust may cause mechanical irritation and discomfort. Repeated exposure to dust may aggravate pre-existing respiratory conditions. Prolonged or frequent breathing of excess dust may cause an adverse respiratory effect.

Eye Toxicity

*** COMPONENT = ALUMINUM OXIDE ***
Slight/mild irritant. Particulates may scratch eye surfaces and cause mechanical irritation.

*** COMPONENT = EPOXY RESIN ***
May cause eye irritation.

*** COMPONENT = 3-(3,4-Dichlorophenyl) -1,1-dimethylurea ***
Will cause eye irritation. May cause permanent damage if eye is not immediately irrigated.

*** COMPONENT = Butyl Glycidyl ether ***
Severe/very severe irritant.

*** COMPONENT = Carbon Black ***
Particulates may scratch eye surfaces and cause mechanical irritation.

Section 12. Ecological Information

Potential Effect on Environment	Unknown.
Potential to Bioaccumulate	Unknown.
Ecotoxicity Effects	Unknown.
Aquatic Toxicity	None Established

Section 13. Disposal

WASTE DISPOSAL METHOD:	Dispose of in accord with local, state and federal regulations
Empty Container Precautions	Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

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.
Further Information	This 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/or 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.

Section 15. Regulatory Information

Regulatory Information	TSCA: All components are on the TSCA inventory. Canadian Domestic Substance List (DSL): Is on DSL China (IECSC): On the IECSC Inventory. SARA – Section 313 (Superfund Amendments and Reauthorization Act of 1986 – 40CFR 372) Aluminum oxide : CAS # 1344-28-1 Diuron : CAS # 330-54-1
California Prop. 65 Components	WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm. Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts: Diuron – CAS # 330-54-1 Carbon black – CAS # 1333-86-4 Phenyl Glycidyl ether – CAS # 122-60-1 Epichlorohydrin – CAS # 106-89-8

Section 16. Other Information

Revision Date

5/14/2015

HMIS Rating (Not Regulated) The HMIS Rating for this product is:
Health: 2 Flammability: 1 Reactivity: 1

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

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