

RESIN FORMULATORS CO.
MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION

Trade Name - RFC-2317 Part A

Manufactured By:

Cirrus Enterprises, LLC
 dba E.V. Roberts, Resin Formulators and Chemical Packaging Solutions
 18027 Bishop Avenue Carson, CA 90746-4019

24 HOUR EMERGENCY PHONE CHEMTREC: 800-424-9300

Revision Date: 10/18/96

SECTION 2 - HAZARDOUS INGREDIENTS

Chemical Name	CAS Number	%	Exposure Limits in Air		
			ACGIH TLV	OSHA PEL	Other
Bisphenol A/Epichlorohydrin Resin	25068-38-6	91	None established		
Silica Filler*	763-18-69	9			

*Note: The particles of solids are completely wetted by the resin components. It would not be possible to produce a dust from this material unless it were cured into a plastic and then sanded or ground.

SECTION 3 - PHYSICAL PROPERTIES

Vapor density (air=1)	No Data	Melting Point or range, °F	No Data
Specific gravity	1.1	Boiling point or range, °F	Not Available
Solubility in water	Negligible	Evaporation rate	No Data (butyl acetate = 1)
Vapor pressure	Not applicable (mmHg at 20°C)		Not applicable
Volatile Organic Content <1 gram/L (100% Solids)			

Appearance and odor: Light yellow, viscous liquid. This material does not contain any Ozone Depleting Substance.

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MATERIAL SAFETY DATA SHEET**SECTION 4 - FIRE AND EXPLOSION**

Flash Point, °F (method): 480 (TOC)
Auto ignition temperature, °F: No Data

Flammable limits in air, volume %: lower(LEL): Upper(UEL):
No data No data

Fire extinguishing materials:

water spray carbon dioxide other
 foam dry chemical water fog

SECTION 5 - HEALTH HAZARD INFORMATION

Symptoms of Overexposure for each potential route of exposure.

Inhaled: Because of its very low volatility this product is not likely to produce any adverse effect by inhalation.

Contact with skin or eyes: Based on product testing product is moderately irritating to the eyes.

Absorbed through skin: Based on product testing product is moderately irritating to the skin. Based on product testing product may cause skin sensitization, indicated by redness, itching, or even open sores.

Swallowed: Based on product testing product is generally considered to have a low order of acute oral toxicity.

Health Effects or Risks from Exposure.

Acute: See section 5.

Chronic: Skin sensitization.

First Aid: Emergency Procedures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.

Skin Contact: Immediately remove contaminated clothing or shoes. Wipe excess from skin and flush with plenty of water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse clothing until thoroughly cleaned. Get medical attention. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed.

Inhaled: Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

Swallowed: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical advice.

Note to Physician: In general, emesis induction is unnecessary in high viscosity, low volatility products.

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Suspected Cancer Agent?

NO: This product's ingredients are not found in the lists below.

YES: Federal OSHA NTP IARC

Medical Conditions Aggravated by Exposure

Pre-existing skin allergies may increase the chance of developing increased allergy symptoms from exposure to this product. Pre-existing skin and eye disorders may be aggravated by exposure to this product.

SECTION 6 - REACTIVITY DATA

Stability: Stable Unstable

Conditions to avoid: Can react vigorously with strong oxidizing agents and strong Lewis or mineral acids. In reactions with many curing agents, considerable heat is released.

Incompatibility (materials to avoid): Strong oxidizing agents, strong Lewis or mineral acids.

Hazardous decomposition products: Carbon monoxide, aldehydes and acids may be formed during combustion. Reaction with some curing agents may produce considerable heat.

Hazardous polymerization: May occur Will not occur

Conditions to avoid: Can react vigorously with strong oxidizing agents and strong Lewis or mineral acids. In reactions with many curing agents, considerable heat is released.

SECTION 7 - SPILL, LEAK, AND DISPOSAL PROCEDURES

Spill response procedures: May burn although not readily ignitable. Use cautious judgment when cleaning up large spills. Large Spills - Wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with absorbent such as clay, sand or other suitable material; dispose of properly. Flush area with water to remove trace residue. Small Spills - Take up with an absorbent material and dispose of properly.

Preparing wastes for disposal: Solidify with clay or other absorbent in a steel drum. Consult your local authorities for an appropriate disposal facility.

SECTION 8 - SPECIAL HANDLING INFORMATION

Ventilation and engineering controls: Store material in a cool dry place with adequate ventilation.

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Respiratory protection: Not ordinarily required. If resin is warmed or heated, vapors or mists may be produced. In such cases, use a NIOSH-approved respirator as required to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

Eye protection: Wear safety glasses or goggles as appropriate.

Gloves: Wear chemical-resistant gloves and other clothing as required to minimize skin contact

Other clothing and equipment: Avoid prolonged or repeated contact with the skin. Wear chemical-resistant gloves and other clothing as required to minimize skin contact.

Work practices, hygienic practices: Launder contaminated clothes before wearing. Do not smoke or eat where this material is being used. Wash hands before smoking, eating or going to the bathroom.

Other handling and storage requirements: Use ventilation as required to control vapor concentrations. (If heated, vapors or mist may be produced.)

Protective measures during maintenance of contaminated equipment: Same as above.

State Regulations

The State of California regulation, Proposition 65, requires the State to identify and list specific chemicals known to cause cancer or birth defects/reproductive harm. Proposition 65 requires a disclosure for products sold within the State of California containing any Proposition 65 listed chemical. The requirement for disclosure is independent of concentration, thus disclosure is required for any detectable amount. Federal regulations require disclosure for carcinogens if the concentration is 0.1% or higher. The following information is required by the State of California for this product:

This product contains chemicals known to the State of California to cause cancer.

Phenyl Glycidyl Ether CAS No: 122-60-1 (6 ppm or 0.0006%)

Epichlorohydrin CAS No: 106-89-8 (2 ppm or 0.0002%)

Prepared By: Ray Darby
Technical Director

THESE DATA ARE OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.

RESIN FORMULATORS CO. - MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION

Trade Name RFC-2317 Part B

Manufactured By:

Cirrus Enterprises, LLC

dba E.V. Roberts, Resin Formulators and Chemical Packaging Solutions

18027 Bishop Avenue Carson, CA 90746-4019

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SECTION 2 - HAZARDOUS INGREDIENTS

Chemical Name	%	Exposure Limits in Air		
		ACGIH TLV	OSHA PEL	Other
Triethylenetetramine (1,2-Ethanediamine, N,N,-bis(2-aminoethyl)) CAS Number - 00112243	6-16			None established
Polyamide Resin CAS Number - 68410231	84-94			None established

SECTION 3 - PHYSICAL PROPERTIES

Vapor density (air=1)	Not Available	Melting point or range, N/A
Specific gravity	.970	Boiling point or range, N/A
Solubility in H ₂ O	moderate	Evaporation rate
Vapor pressure		(butyl acetate = 1) N/A
mmHg at 20°C	Not Available	
Appearance and odor	Tan paste; mild ammoniacal odor.	

Percent Volatiles at 70°F - None

SECTION 4 - FIRE AND EXPLOSION

Flash Point, °F (method) >365°F Cleveland Open Cup
 Auto ignition temperature, Not Available
 Flammable limits in air, volume %: lower(LEL)_N/A_ upper(UEL)_N/A_
 Not determined (nonvolatile fluid)

Fire extinguishing materials:

water spray carbon dioxide _____ other
 foam dry chemical

Special fire fighting procedures: Use self-contained breathing apparatus and protective clothing.

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Unusual fire and explosion hazards: May produce hazardous fumes or hazardous decomposition products.

SECTION 5 - HEALTH HAZARD INFORMATION

Symptoms of Overexposure for each potential route of exposure.

Inhaled: CAUTION! May cause irritation to upper respiratory tract. Avoid prolonged or repeated inhalation.

Contact with eyes: Causes severe eye irritation or burns. Do not get product in eyes. Wash thoroughly after handling.

Contact with skin: Can cause severe irritation or burns.

Absorbed through skin: Prolonged or repeated exposure may result in the absorption of harmful amounts of material, resulting to allergic effects such as rashes, itching, hives, or even open sores.

Swallowed: DANGER! Do not take internally. May cause gastrointestinal irritation or ulceration. May cause burns of mouth and throat.

Other: Polyethylene amines are suspected mutagens. No effects of chronic exposure or target organ effects are known. No exposure limits have been established for this product as formulated.

Health Effects or Risks from Exposure

Acute: See section 5.

Chronic: Possible sensitization resulting in skin irritation, hives and even open sores. The effect on the individual may become more serious with repeated exposure. The effect of sensitization depends on the individual, where a safe exposure for one person may cause an allergic reaction to a person who is or has become sensitive.

First Aid: Emergency Procedures

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention promptly.

Skin Contact: Remove contaminated clothing and flush skin with plenty of water.

Inhaled: Remove the person to fresh air. Give oxygen if breathing is difficult. Call a physician.

Swallowed: Do not induce vomiting. Give a large quantity of milk or water. DO NOT GIVE FLUIDS TO AN UNCONSCIOUS PERSON. Get medical attention.

Animal Testing

Test Type	Result	Species	Hazard Description
Oral Tox	>16 ML/KG LD50	Rat	Relatively Harmless
Dermal Tox	6.5 ML/KG LD50	Rabbit	Relatively Harmless
Skin Irr.	1.2 0-8 Range	Rabbit	Slight
Eye Irr.	105 0-110 Range	Rabbit	Severe

Suspected Cancer Agent?

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_X___NO: This product's ingredients are not found in the lists below.

YES: Federal OSHA NTP IARC

Medical Conditions Aggravated by Exposure

Because of the presence of triethylenetetramine, existing allergenic skin problems or respiratory problems such as asthma could be aggravated.

SECTION 6 - REACTIVITY DATA

Stability: _X___ Stable Unstable

Conditions to avoid: Exposure to temperatures of around 300_C and above.

Incompatibility(materials to avoid): Avoid contamination with acids and oxidizing materials.

Hazardous decomposition products: Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide, nitrogen oxides and ammonia.

Hazardous polymerization: May occur _X___ Will not occur

Conditions to avoid: None

SECTION 7 - SPILL, LEAK, AND DISPOSAL PROCEDURES

Spill response procedures: Wear suitable protective equipment! Small spills should be flushed with dilute (5%) acetic acid for sewer disposal. Large spills should be absorbed with a suitable absorbent material and containerized for disposal.

Preparing wastes for disposal: Normal solidification and disposal as a industrial waste per federal, state, and local regulations. This material as shipped is not a hazardous waste as specified in 40 CFR 261.

Note: Dispose of all wastes in accordance with federal, state and local regulations.

SECTION 8 - SPECIAL HANDLING INFORMATION

Ventilation and engineering controls: Local exhaust should be adequate. If material is heated or used in large quantities where ventilation is poor, then a respirator with an organic vapor cartridge should be used.

Respiratory protection: Self-contained breathing apparatus in high vapor concentrations.

Eye protection: Monogoggles, Face Shield.

Gloves: Butyl

Other clothing and equipment: Face shield, eye bath, and safety shower.

Work practices, hygienic practices: Launder contaminated clothes before wearing. Do not smoke or eat where this material is being used. Wash hands before smoking, eating, or going to the bathroom.

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Other handling and storage requirements: None

Protective measures during maintenance of contaminated equipment: Same as above.

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Technical Director

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