

Raychem

MATERIAL SAFETY DATA SHEET

Issue No.: 11

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PRODUCT IDENTIFICATION

Product Name: Thermofit S-1009 Adhesive,
Parts A & B

Manufacturer: Raychem Corporation
300 Constitution Drive
Menlo Park, CA 94025

Chemical Name: Not applicable, mixture
CAS #: Not applicable, mixture
DOT Proper Shipping Name: Not regulated
DOT Identification No.: Not regulated
DOT Hazard Classification: Not regulated
TSCA Inventory Status: All ingredients are listed.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE or ACCIDENT

Call CHEMTREC - Day or Night - 1-800-424-9300 Toll free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska or Virgin Islands. For calls originating elsewhere: (703) 527-3887 (collect calls accepted)

For non-emergency health and safety information, call: (650) 361-4907

HAZARDOUS INGREDIENTS

This product is a two-part epoxy resin.

Part A: Bisphenol A/Epichlorohydrin Epoxy Resin (CAS # 25068-38-6)

Part B: Aliphatic Polymercaptan (CAS # proprietary); Polyamide/Amine Blend (CAS # 68410-23-1);
n-Aminoethylpiperazine (CAS # 140-31-8)

PHYSICAL PROPERTIES

Appearance and Odor: Part A: Viscous purple liquid. Slight odor.
Part B: Viscous tan liquid. Mercaptan odor.

Boiling Point: Part A: >500°F (260°C)
Part B: Not Available

Vapor Pressure: Part A: 0.03 mmHg @77°C
Part B: Not Available

Volatility (% by volume): Part A: Not Available
Part B: 0.3% @ 70°F

Vapor Density: Part A: Not Applicable
Part B: Not Applicable

Specific Gravity (Water = 1): Part A: 1.17
Part B: 1.15

Evaporation Rate: Part A: Not Applicable
Part B: Not Applicable

Flash Point/Method: Part A: 480°F (249°C)/Closed Cup
Part B: 495°F (257°C)/Closed Cup

Solubility in Water (%): Part A: Negligible
Part B: Negligible

Flammable Limits in Air (volume%): lower Not Established upper Not Established

HEALTH HAZARD INFORMATION

Exposure Limits:

Part A:	Bisphenol A/Epichlorohydrin Epoxy Resin:	None Established
Part B:	Aliphatic Polymercaptan:	None Established
	Polyamide/Amine Blend	None Established
	n-Aminoethylpiperazine	None Established

Health Effects/Symptoms of Exposure:

The health effects described below refer to the uncured resin, Parts A & B. The information presented below corresponds to the individual components of this product. Toxicity studies have not been performed on the mixture as a whole.

Acute (Short-Term Exposure):

- Eye Contact:**
- Part A: This material is an eye irritant. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing, redness, and swelling. Persons with pre-existing eye disorders may be more susceptible to the effects of this material. Contact with molten material may cause thermal burns.
 - Part B: A component of this material is corrosive to the eyes. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing, redness, swelling, and eye damage. Persons with pre-existing eye disorders may be more susceptible to the effects of this material.
- Skin Contact:**
- Part A: This material is a skin irritant. Direct contact or exposure to vapors or mists may cause redness and burning and skin damage. Repeated contact may cause an allergic skin reaction in sensitized individuals. Persons with pre-existing skin disorders may be more susceptible to the effects of this material. No harmful effects are expected from skin absorption of this material. Contact with molten material may cause thermal burns.
 - Part B: A component of this material is a severe skin irritant. Direct contact or exposure to vapors or mists may cause redness and burning, and skin damage. Repeated contact may cause an allergic skin reaction in sensitized individuals. Persons with pre-existing skin disorders may be more susceptible to the effects of this material. A minor component of this material is toxic when absorbed through the skin.
- Ingestion (Swallowing):**
- Part A: Ingestion of this material is highly unlikely. However, if swallowed, this material has a low degree of toxicity by ingestion.
 - Part B: This material may be harmful or fatal if swallowed. Ingestion may result in severe irritation and burns of the mouth, throat, and digestive tract. Severe abdominal pain, nausea, vomiting, and collapse may also result from ingestion.
- Inhalation (Breathing):**
- Part A: Because of its low volatility, exposure to vapors is unlikely. In common with most organic materials, degradation and combustion byproducts may be toxic and should not be inhaled. See comments below and the Thermal Degradation and Combustion Byproducts sections for more specific information.
 - Part B: Breathing vapors or mists may cause severe irritation and burns of the nose, throat, and respiratory tract. Symptoms of toxicity may include coughing, chest discomfort, and an allergic response in the lungs with asthma-like symptoms in sensitized individuals. Pre-existing lung disorders (e.g., asthma-like conditions) may be aggravated by exposure to this material.

Chronic (Long-Term Exposure):

The ingredients of this product, present at equal to or greater than 0.1% of the product, are not listed by OSHA, NTP, or IARC as suspect carcinogens.

A component of Part A of this product (Bisphenol A-Epichlorohydrin Epoxy Resin) is positive in *in vitro* microbial mutagenicity screening tests and has produced chromosomal aberrations in cultured rat liver cells. It has, however, proven to be inactive when tested in *in vivo* mutagenicity assays. (Note: Mutagenicity assays are a means to identify if a chemical may cause changes in the genetic material (DNA) of a cell). A component of Part B of this product (polyamide resin) is also suspected of being able to cause changes in the genetic material (DNA) of a cell. Another minor component of Part B (n-aminoethylpiperazine) has caused weak mutagenic activity in *in vitro* test systems. What these findings mean to humans is uncertain.

Comments: Overheating the material to temperatures above 300°F (149°C) may produce vapors that may cause eye, skin, nose, and throat irritation. Respiratory symptoms associated with pre-existing lung disorders (e.g., asthma conditions) may be aggravated by exposure to overheated material.

STORAGE, HANDLING, AND PREVENTATIVE MEASURES

Stability at room temperature: Stable.

Conditions to Avoid: Avoid excessive heat for prolonged periods of time.

Incompatibilities: Part A: Avoid contact with strong oxidizers, acids and bases, especially primary and secondary aliphatic amines. Reaction with some curing agents may produce considerable heat. Part B: Avoid contact with strong oxidants and epoxy resin/amine mixtures, especially when hot. Contact with large masses of epoxy resin generates large quantities of heat due to exothermic reaction.

Hazardous Polymerization: Hazardous polymerization will not occur. Polymerization may occur above 500°F. Some curing agents, e.g., aliphatic polyamines, can produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants.

Thermal Degradation and Combustion Byproducts: Degradation and combustion byproducts may be toxic and should not be inhaled. Thermal degradation is not significant at temperatures achieved during proper application, as directed by product instructions. At temperatures above 300°F, or most significantly if the products are burned, the thermal degradation products may include, but are not limited to, carbon monoxide, carbon dioxide, aldehydes, acids and other organic substances, hydrogen sulfide, and oxides of sulfur and nitrogen.

Handling: Do not get in eyes. Do not take internally. Do not breath vapors. Avoid contact with skin or clothing. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse. Wash thoroughly after handling. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse. Application of adhesive (Parts A & B) should be done in a well-ventilated area.

Other Precautions: Containers, even those that have been emptied, can contain hazardous product residues. Handle in accordance with the precautions outlined in the Handling Section above. Parts A and B release heat when combined. Protect packets from physical damage to avoid leaks and spills.

Heating resin above 300°F in the presence of air may cause slow oxidative decomposition. Above 500°F polymerization may occur. Some curing agents, e.g. aliphatic polyamines, can produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity. Do not breathe fumes or vapors.

Storage: Store in a cool, dry area. Keep away from open flames and high temperatures. Keep container closed.

Ventilation: In accordance with good industrial hygiene practice, ensure adequate ventilation during application.

Respiratory Protection: Depending on the airborne concentration of material, use a NIOSH/MSHA-approved air purifying respirator with organic vapor cartridges. At temperatures above 300°F (149°C), hazardous thermal degradation products may be released. Therefore, if temperatures exceed 300°F (149°C), air-supplied respirators are recommended.

Protective Clothing: Use safety glasses with side shields or goggles to prevent contact. Avoid prolonged or repeated contact with skin. Wear rubber gloves to prevent or minimize contact.

Disposal: This product is a non-hazardous waste in accordance with U.S. EPA regulations. Classification according to all local and state hazardous waste regulations is required before disposal.

EMERGENCY AND FIRST AID PROCEDURES

This product is a two-part epoxy resin. The first aid instructions below refer to exposure to Part A or Part B of the uncured resin.

Eyes: Hold eyelids apart and flush affected eye(s) immediately with clean water for at least 15 minutes. Seek immediate medical attention.

Skin: Flush skin with plenty of water and wash affected area(s) with soap and water. Remove contaminated clothing and wash before reuse. Thoroughly clean shoes before reuse. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse. If irritation persists, seek medical attention. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Carefully remove clothing; if clothing is stuck to a burned area do not pull it off, but cut around it. Cover burned area with a clean material and seek medical attention immediately.

Ingestion: Not a normal route of exposure. DO NOT induce vomiting. If vomiting occurs spontaneously, keep airway clear. If victim is conscious and alert, immediately rinse mouth with water and dilute the ingested material by giving one glass of water to drink. Seek immediate medical attention.

Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim to fresh air. If symptoms persist, seek medical attention. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention. If victim is not breathing, immediately begin artificial respiration. Keep victim warm and quiet; seek immediate medical attention.

Steps to be Taken in Case of Release or Spill: Wear appropriate personal protection when responding. Contain spill with inert absorbent. Take measures to stop spillage at the source. Transfer contaminated absorbent into a container and dispose in accordance with local, state and federal laws. Wash area with dilute (5%) acetic acid, pickup with inert absorbent and dispose of properly.

Unusual Fire and Explosion Hazards: Toxic fumes may be given off in a fire. See sections on Thermal Degradation Products and Other Precautions.

Special Fire Fighting Procedures: Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires. Use water spray to cool nearby containers and structures exposed to fire.

Extinguishing Media: carbon dioxide X water ___ dry chemical X foam X other use water spray; no solid stream

This information is supplied in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the California Safe Drinking Water and Toxics Enforcement Act of 1986 (California Health & Safety Code 25249.6). Users are advised that they may have additional disclosure obligations under other federal, state, and local laws. Users are advised to ensure that this information is brought to the attention of the employees, agents, or contractors handling this product. Distributors of this product are advised to forward this document, or the information contained herein, to their purchaser. Raychem makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. Raychem's obligations shall be only as set forth in Raychem's standard terms and conditions of sale for this product and in no case will Raychem be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of Raychem products should make their own evaluation to determine the suitability of each such product for the specific application and to establish safe handling and installation procedures.

Data Sheet Prepared By: Linda Massey, Corporate Toxicology

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Data Sheet Approved By: Ron Watson, Thermofit Division

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