

MATERIAL SAFETY DATA SHEET

System Three Resins, Inc.

3500 W. Valley Hwy N; Suite 105

Auburn, Washington 98001

SECTION I - PRODUCT IDENTIFICATION

Product Name: **MetiWeld Adhesive (PART A)** Date of Prep: 5/06/98
MSDS Number: 20011 Previous Revision: None
Product Type: Epoxy Resin Mixture Reason Revised: New Product
24-hr. Emergency Phone: Prepared By: J. Bartlett
Call Chemtrec: (800) 424-9300

Hazard Ratings:
Health 2
Fire 1
Reactivity 0

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| HAZARDOUS COMPONENTS | AMOUNT | CAS NUMBER | OSHA PEL | ACGIH TLV |
|---|--------|------------|------------------|------------------|
| Diglycidyl Ether of Bisphenol A (DGEBCPA) | > 70% | 25068-38-6 | none established | none established |
| Alkylglycidyl Ether | < 30% | 68081-84-5 | none established | none established |

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Range: not applicable Specific Gravity: 1.1-1.3
Vapor Density: Heavier than Air Material V.O.C.: None
Evaporation Rate: Slower than Ether Water Solubility: Negligible
Appearance and Odor: Liquid or paste with little or no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: > 300°F Method: Pensky-Martens Closed Cup
Flammable Limits in Air By Volume - Lower: N/A Upper: N/A
Extinguishing Media: Foam, Carbon Dioxide, Dry Chemical, Water Fog

Special Firefighting Procedures: When fighting chemical fires wear full protective equipment with self-contained breathing apparatus. Water spray may be used to cool fire exposed containers. Toxic fumes may be evolved when this substance is burned.

SECTION V - REACTIVITY DATA

Stability: Stable. Hazardous Polymerization: Will not occur.
Incompatibility: Strong oxidizing agents, Lewis and mineral acids.

Hazardous Decomposition Products: Oxides of carbon, aldehydes, acids

Conditions to Avoid: Epoxy resins and epoxy resin hardeners react with each other producing heat. They should not be mixed with each other under uncontrolled conditions or in large mass as the ensuing exotherm may result in heat and smoke resulting in hazardous decomposition products.

SECTION VI - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

Acute: Slightly irritating to skin, moderately irritating to eyes. Odor may irritate nose, throat and respiratory tract of some persons.

Chronic: May cause skin sensitization from prolonged and repeated contact.

Carcinogenicity: Early studies with DGEBCPA have been negative. The IARC concluded in 1988 that DGEBCPA was not classifiable as a carcinogen.

EMERGENCY AND FIRST AID PROCEDURES:

Eyes: Flush with water for 15 minutes holding eyelids open. Seek medical attention.

Skin: Remove contaminated clothing and shoes and wipe excess off skin. Flush skin with water. Follow by washing in soap and water. If irritation occurs, seek medical attention. Do not reuse clothing until cleaned. Contaminated leather articles (shoes) can not be decontaminated and should be destroyed.

Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

Ingestion: Do not give liquids if victim is unconscious or very drowsy. Otherwise, give no more than 2 glasses of water and induce vomiting by giving 2 tablespoons syrup of ipecac (1 tablespoon and 1 glass of water for child). If ipecac is unavailable, give 2 glasses of water and induce vomiting by touching finger to back of throat. Keep head below hips while vomiting. Get medical attention.

Medical Conditions Generally Aggravated by Exposure: Other than skin sensitization which appears to be permanent, epoxy resin does not appear to cause long term health effects. Nor, does it appear to aggravate other medical conditions.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

If Material is Spilled: Avoid contact with material. Persons not wearing appropriate protective equipment should leave the area of the spill until cleanup is complete. Stop spill at source, dike area to prevent spreading, pump liquid to salvage tank or drum. Remaining liquid may be taken up on clay, diatomaceous earth, sawdust, or other absorbant, and shoveled into disposal containers.

Waste Disposal Method: Waste is not hazardous by RCRA criteria (40 CFR 261). Place in an appropriate disposal facility in compliance with local regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: Normally none is required when adequate ventilation is provided. In the absence of proper environmental control NIOSH approved respiratory is required. For emergencies, a self-contained breathing apparatus or full-faced respirator is recommended.

Ventilation: Provide adequate ventilation in work areas. Confine material in sealed containers when not in use.

Hand Protection: Always wear impervious gloves, neoprene, vinyl or rubber.

Eye Protection: Splash proof goggles or safety spectacles with side shields are recommended. Always wear eye protection when sanding cured epoxy resins to avoid dust in eyes.

Other Protective Equipment: Wear clean, body-covering clothing to avoid skin contact.

SECTION IX - TRANSPORTATION REQUIREMENTS

Department of Transportation Classification: Not Hazardous

D.O.T. Proper Shipping Name: Not Regulated

Other Requirements:

This product contains no toxic chemicals subject to the report requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

The information contained herein is based on the data available to us and is believed to be correct. However, System Three Resins, Inc. makes no warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use thereof. System Three assumes no responsibility for injury from the use of the product described herein.

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System Three Resins, Inc.

3500 W. Valley Hwy N; Suite 105

Auburn, Washington 98001

SECTION I - PRODUCT IDENTIFICATION

Product Name: **MetiWeld Adhesive (PART B)** Date of Prep: 10/06/97
MSDS Number: 20012 Previous Revision: None
Product Type: Epoxy Hardener Reason Revised: New Product
24-hr. Emergency Phone: Information: (253) 333-8118
Call Chemtrec: (800) 424-9300 Prepared By: J. Bartlett

Hazard Ratings:
Health 3
Fire 1
Reactivity 0

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| HAZARDOUS COMPONENTS | AMOUNT | CAS NUMBER | OSHA PEL | ACGIH TLV |
|---|--------|------------|----------|-------------|
| Modified Polyamide (Mixture is trade secret) | 50-60% | ----- | none | established |
| Butadiene/Acrylonitrile Copolymer | 5-10% | 68683-29-4 | none | established |
| Nonyl Phenol | 5-10% | 25154-52-3 | none | established |
| Benzyl Alcohol | 1-5% | 100-51-6 | none | established |

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Range: N/A Specific Gravity: 0.97
Vapor Density: Heavier than Air Material V.O.C.: None
Evaporation Rate: Slower than Ether Water Solubility: Negligible
Appearance and Odor: Tan, thick liquid with mild ammonia smell. Dead air space above liquid in containers may have strong ammonia smell.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: > 250F° Method: Pensky-Martins Closed Cup
Flammable Limits in Air By Volume: Lower: N/A Upper: N/A
Extinguishing Media: Foam, Carbon Dioxide, Dry Chemical, Water Fog

Special Firefighting Procedures:

When fighting chemical fires wear full protective equipment with self-contained breathing apparatus. Water spray may be used to cool fire exposed containers. Toxic fumes will be evolved when this substance is burned.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Epoxy resins and epoxy resin hardeners react with each other producing heat. They should not be mixed with each other under uncontrolled conditions or in large mass as the ensuing exotherm may result in heat and smoke.

Incompatibility: Strong oxidizing agents, mineral acids.

Hazardous Decomposition Products: Oxides of carbon, nitrogen

Hazardous Polymerization: Will not occur.

SECTION VI - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

Acute: May cause burns to skin and eyes. High vapor concentration can cause severe irritation of eyes and respiratory tract. Liquid causes severe damage to mucous membranes if swallowed.

Chronic: Prolonged and repeated skin contact may cause skin sensitization, asthma or other allergic responses.

Carcinogenicity: Results of in vitro mutagenicity tests on polyamides have been negative. It is not expected that any of the ingredients are carcinogenic.

EMERGENCY AND FIRST AID PROCEDURES:

Eyes: Flush thoroughly with water for at least 15 minutes. Get immediate medical attention.

Skin: Remove contaminated clothing and flood area with water. Wash affected skin with soap and water. Wash clothing before reuse. Discard shoes. Get medical attention if redness, soreness, or blistering occur or persist.

Inhalation: Remove to fresh air. Administer oxygen if necessary. Get medical attention if breathing is difficult or cough develops.

Ingestion: DO NOT INDUCE VOMITING. Vomiting will cause further damage to throat or respiratory tract. Dilute by giving water or milk to drink if victim is conscious. GET IMMEDIATE MEDICAL ATTENTION.

Medical Conditions Generally Aggravated by Exposure: This material may be a strong skin sensitizer in certain susceptible persons. Once sensitized, most persons are unable to work around amine cured epoxy resins without an allergic reaction. Sensitized persons are not known to have other health problems as a result of sensitization.

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Hand Protection: Always wear impervious gloves, neoprene, vinyl or rubber.

Eye Protection: Splash proof goggles or safety spectacles with side shields are recommended. Always wear eye protection when sanding cured epoxy resins to avoid dust in eyes.

Other Protective Equipment: Wear clean, body-covering clothing to avoid skin contact.

SECTION IX - TRANSPORTATION REQUIREMENTS

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