

# SILPAK, INC.

470 E. BONITA AVE. POMONA, CA 91767  
(909) 625-0056 FAX (909) 625-0082 WWW.SILPAK.COM

## E-108 WC CLEAR PRODUCT DATA SHEET

E-108 WC is an unfilled epoxy for high temperature applications with special additives for impact resistance.

- 1) Excellent impact resistance
- 2) Low viscosity
- 3) Very tough epoxy
- 4) Water Clear

**Applications:** E-108 WC is a castible epoxy with good transparency and low viscosity, which cures to hard surfaces. E-108 WC/H-403 is a good coating over polyester clear resin to improve a clear finish.

### Properties:

Shore D Hardness: 85D  
Viscosity CPS: 15,000 cps - unmixed  
Color: Transparent      Tensile: 5,000  
Shrinkage: Nil      Specific Gravity: 1.12  
Tensile Modulus @ 75F psi x 10 (6) : 0.42  
Compression Strength psi: 6,900  
Compressive Modulus psi x 10(6) : 0.45  
Izod Impact Strength FT-LB/in of notch: 0.47

### Hardener Selection:

Ratio of Hardener: Base E-108 WC @ 100%

**H-403 @ 40%** for thicker than 1/4 " pieces

Pot Life: 2-4 hours

Cure Time: 48 hours, (Accelerated cure @125F for 4 hours & allowed to cool 1-2 hours @ rt)

**H-33 @ 46%** for 1/4" or less pieces- (COLOR WILL YELLOW OVER 1/4INCH THICKNESS)

Pot Life: 20-30 minutes

Cure Time: 8 - 12 hours (80f)

### Mixing Instructions:

Mix epoxy base and hardener by specified ratio as listed above by weight. Mix well by hand or mechanical mixer. Be sure to scrape sides and bottom or transfer to another container for best mix. For best results, de-air at 29 inches of mercury before pouring. Thick pours may be successful in multiple pours, the first being thin to allow air to flow out. Allow one hour between pours. H-33 will yellow if cast in sections over 1/4 thickness. Pigments are available to color resin: red, yellow, blue and black.

### Storage:

Store at room temperature or below 90F. Keep out of sunlight or away from heat. When handling, please refer to MSDS.

**THE INFORMATION AND DATA CONTAINED HEREIN ARE BASED ON INFORMATION WE BELIEVE RELIABLE. EACH USER OF THE MATERIAL SHOULD THOROUGHLY TEST APPLICATION, AND INDEPENDENTLY CONCLUDE SATISFACTORY PERFORMANCE BEFORE COMMERCIALIZING. SUGGESTIONS OF USES SHOULD NOT BE TAKEN AS INDUCEMENTS TO INFRINGE ON ANY PARTICULAR PATENT.**

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## H-403 EPOXY CURING AGENT Product Data Sheet

H-403 curing agent is used with E-108 WC epoxy base to create water clear castings of hard resin. H-403 has long pot life and full cure in 48 hours at 75f 1/2" thick. This hardener has low viscosity, voc and good chemical resistance.

Color - Transparent/Translucent  
SPECIFIC GRAVITY- 0.98  
VISCOSITY, CPS - 70  
FLASH POINT - 385f  
VAPOR PRESSURE, mmHg/f - 5/207  
PH, 5% Aqueous solution - 11.6

Please do not hesitate to call for further information.

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WRS Part # 95005  
P.O. # S46502

## MATERIAL SAFETY DATA SHEET

### SECTION I

**MANUFACTURER:** SILPAK, INC.

**ADDRESS:** 470 E. BONITA AVE. POMONA, CA 91767

**EMERGENCY TELEPHONE #:** 909-625-0056

**CHEMICAL NAME AND SYNONYMS:** EPOXY RESIN HARDENER

**TRADE NAME AND SYNONYMS:** H-403, H-403 A, H-403 SP

**CHEMICAL FAMILY -** ALKYL ETHER AMINE

**MATERIAL CLASSIFICATION-** CORROSIVE LIQUID NOS (ALKYL ETHER AMINE) UN-1760, C:8, PG II

**NFPA -** HEALTH - 2, FIRE 1, REACTIVITY 0

**VOC CONTENT** < 1% BY ASTM D 2369

### SECTION II HAZARDOUS INGREDIENTS

POLY (OXYMETHY-1,2-ETHANEDIYL),ALPHA-HYDROMA-(2-AMINOMETHYTHOXY)- ETHER WITH  
2-ETHYL-2-(HYDROXYMETHYL)-1,3-PROPANEDIOL (3:1) - CAS # 39423-51-3 100%

SARA Title III Sect. 313: Not listed

CALIFORNIA PROP. 65- NOT LISTED

### SECTION III PHYSICAL DATA

**BOILING POINT (F):** NOT DETERMINE

**SPECIFIC GRAVITY:**0.98 @ 77F

**VAPOR PRESSURE (mm Hg):** NEGLIGIBLE

**VAPOR DENSITY (AIR=1):** Not Determined

**EVAPORATION RATE (nBuAc=1):** Not Determined

**APPEARANCE AND ODOR:** VISCOUS AMBER, OR CLEAR liquid, slight odor

**SOLUBILITY IN WATER -** SLIGHT

### SECTION IV

#### FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT (METHOD USED):** 385F (Closed Cup)

**EXTINGUISHING MEDIA:** Foam, Dry Chemical, Carbon Dioxide

**SPECIAL FIRE FIGHTING PROCEDURES:** Toxic fumes will be evolved when this material is involved in a fire. Self-contained breathing apparatus should be available for fire fighters. Cool fire- exposed containers with water.

### SECTION V HEALTH HAZARD DATA

**ACUTE:** Will cause burns to skin and eyes. High concentration of vapors can cause severe irritation of eyes and respiratory tract. Liquid causes severe damage to mucous membranes if swallowed.

**CHRONIC:** Prolonged or repeated exposure may cause asthma and skin sensitization or other allergic response.

**EYES:** Immediately flush with large amounts of water for at least 15 minutes, lifting upper and lower lids occasionally.

**GET IMMEDIATE MEDICAL ATTENTION.** If a physician is not immediately available; continue flushing with water.

**SKIN:** Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Launder clothing before re-use and discard contaminated leather articles. Get medical attention if swelling or reddening occurs.

**INHALATION:** Remove to fresh air if effects occur and administer oxygen, if necessary. GET MEDICAL ATTENTION if effects persist.

**INGESTION: DO NOT INDUCE VOMITING.** Vomiting will cause further damage to the throat. Dilute by giving water or milk to drink if victim is conscious. GET MEDICAL ATTENTION IMMEDIATELY.

**MEDICAL CONDITION AGGRAVATED BY EXPOSURE:** Not known.

## SECTION VI REACTIVITY DATA

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**STABILITY:** Stable under normal storage conditions

**COMPATIBILITY (MATERIALS TO AVOID):** Avoid contact with strong oxidizing agents, mineral acid (e.g. H<sub>2</sub>SO<sub>4</sub>, HCl), and epoxy resins under uncontrolled conditions.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide, carbon dioxide, oxide of nitrogen.

## SECTION VII

### SPILL OR LEAK PROCEDURES

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**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Avoid contact with material. Persons not wearing appropriate protective equipment should be excluded from the area of the spill until clean-up is complete. Stop spill at source, dike area to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on clay, diatomaceous earth or other absorbent, and shoveled into disposal containers.

**WASTE DISPOSAL METHOD:** Dispose of waste in accordance with Federal, state, and Local regulations.

## SECTION VIII

### SPECIAL PROTECTION INFORMATION

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**RESPIRATORY PROTECTION (SPECIFY TYPE):** NIOSH approved respiratory protection required in the absence of proper environmental control. For emergencies, a self-contained breathing apparatus, or a full-face respirator is recommended.

**VENTILATION:** Breathing of vapors must be avoided. Ventilation must be sufficient to control vapors. This material should be confined as far as possible within sealed or covered equipment in which case normal ventilation should be adequate. Special (local) ventilation will be needed in areas where vapors are expected to be vented.

**HAND PROTECTION:** Impervious gloves, neoprene or rubber.

**EYE PROTECTION:** Splash proof goggles or safety spectacles with side shields.

**OTHER PROTECTIVE EQUIPMENT:** Clean, body-covering clothing. Further safety equipment (apron, footwear, etc.) should be used as necessary to prevent contact with material.

## SECTION IX SPECIAL PRECAUTIONS

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**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** KEEP CONTAINER CLOSED. STORE IN A COOL PLACE AND KEEP AWAY FROM HEAT OR FLAME. DON'T LAY CONTAINER ON IT'S SIDE.

**OTHER PRECAUTIONS:** Prevent all skin and eye contact; avoid breathing vapors; re-seal partly used container; ensure that all containers are properly labeled to prevent accidental ingestion; wash with soap and water before eating, drinking, smoking or using toilet facilities; observe conditions of good industrial hygiene and safe working practices.

**PREPARED BY:** PHILIP J. GALARNEAU 1/4/2002

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## MATERIAL SAFETY DATA SHEET

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**EMERGENCY TELEPHONE #:** 909-625-0056

**CHEMICAL NAME AND SYNONYMS:** Bisphenol A/Epichlorohydrin Resin

**TRADE NAME AND SYNONYMS:** E-108 WC, E-108 REG, E-108 RF, EW108

**CHEMICAL FAMILY:** Epoxy Resin

**FORMULA:** Proprietary

**NFPA- HEALTH:** 2, **FIRE:** 1, **REACTIVITY:** 0

### SECTION I HAZARDOUS INGREDIENTS

**CATALYST:** Cresyl Glycidyl

Epoxy Resin: 100%

### SECTION III PHYSICAL DATA

**BOILING POINT (F):** N/A **SPECIFIC GRAVITY (H<sub>2</sub>O=1):** 1.17

**VAPOR PRESSURE (mm Hg):** N/A

**PERCENT VOLATILE BY VOLUME (%):** N/A

**VAPOR DENSITY (AIR=1):** N/A

**EVAPORATION RATE (nBuAc=1):** N/A

**SOLUBILITY IN WATER:** Negligible

**APPEARANCE AND ODOR:** Translucent-transparent

### SECTION IV

#### FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT (METHOD USED):** 242 (PMCC)

**FLAMMABLE LIMITS/% volume in air:** Lel - N/AV, Uel - N/AV

**EXTINGUISHING MEDIA:** Water fog, foam, dry chemicals or CO<sub>2</sub>.

**SPECIAL FIRE FIGHTING PROCEDURES:** Material will not burn unless preheated. 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.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None

## **SECTION V HEALTH HAZARD DATA**

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**EYE CONTACT:** Based on product testing, product is moderately irritation to the eyes.

**SKIN CONTACT:** Based on product testing, product is moderately irritating to the skin. Based on product testing, product may cause skin sensitization.

**INHALATION:** Because of its very low volatility, this product is not likely to produce any adverse effects by inhalation.

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

**SIGNS AND SYMPTOMS:** Irritation as noted. Skin sensitization (allergy) may be evidenced by rashes, especially hives.

**AGGRAVATED MEDICAL CONDITIONS:** Preexisting skin allergies may increase the chance of developing increased allergy symptoms from exposure to this product. Preexisting skin and eye disorders may be aggravated by exposure to this product.

**OTHER HEALTH EFFECTS:** No other health effects are known.

Although the significance is unknown, a similar product has been shown to be mutagenic in some microbial tests, but has failed to show mutagenicity in others. Chromosomal aberrations were observed in cultured rat liver cells.

## **SECTION VI REACTIVITY DATA**

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**STABILITY:** Stable

**CONDITIONS AND MATERIALS 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.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide, aldehydes and acids may be formed during combustion. Reaction with some curing agents may produce considerable heat.

## **SECTION VII SPILL OR LEAK PROCEDURES**

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**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** May burn, although not readily ignitable. Use cautious judgment when cleaning up large spills. When cleaning 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 an 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.

**WASTE DISPOSAL METHOD:** Place in an appropriate disposal facility in compliance with local regulations.

## **SECTION VIII SPECIAL PROTECTION INFORMATION**

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**RESPIRATORY PROTECTION (SPECIFY TYPE):** 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 accordance with 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

**PROTECTIVE CLOTHING:** Avoid contact with eyes. Wear safety glasses or goggles as appropriate. Avoid prolonged or repeated contact with skin. Wear chemical-resistant gloves and other clothing as required to minimize contact.

**ADDITIONAL PROTECTIVE MEASURES:** Use ventilation as required to control vapor concentrations. (If heated, vapors or mist may be produced.)

## **SECTION IX SPECIAL PRECAUTIONS**

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Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures. Handle in accordance with the hazard potential or curing agent(s) used. Caution: May cause irritation. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Avoid prolonged or repeated breathing of vapor. Wash thoroughly after handling. Launder contaminated clothing before reuse. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed.

**OTHER PRECAUTIONS: NONE KNOWN**

**Prepared by: Philip J. Galarneau 10/1/02**