

MATERIAL SAFETY DATA SHEET

OB-100 (Part A - Resin)

Date Issued: 01/08/2009
MSDS No: A-4000-2 Resin

A-4000-2 Resin

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: A-4000-2 Resin**GENERAL USE:** Part A of a Two Component Epoxy**SUPPLIER**OMEGA ENGINEERING, Inc.
ONE Omega Drive - Box 4047
Stamford, CT. 06907
Phone: 203-359-1660
Fax: 203-359-7770
E-mail: 203-359-7770 WWW.OMEGA.COM**24 HR. EMERGENCY TELEPHONE NUMBERS****CHEMTEL (US Transportation) :** 1-800-255-3924
International (Call Collect) : +01-813-248-0585

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW**IMMEDIATE CONCERNS:** May cause sensitization, Mild skin irritant, Can cause mild eye irritation, Can be harmful if swallowed.**POTENTIAL HEALTH EFFECTS****EYES:** Contact may cause eye irritation.**SKIN:** May cause skin irritation. Allergic reactions are possible.**INGESTION:** Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.**SIGNS AND SYMPTOMS OF OVEREXPOSURE****EYES:** Eyes may become irritated, red or itchy.**SKIN:** Skin may become itchy, red or irritated.**INGESTION:** May cause vomiting.**ACUTE TOXICITY:** Prolonged contact with this product can cause reddening, swelling, rash scaling or blistering. In those who have developed skin sensitization, these symptoms can develop as a result of contact with very small amount of the liquid material.**CHRONIC EFFECTS:** Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).**SENSITIZATION:** May cause allergic skin reaction.**HEALTH HAZARDS:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.**COMMENTS:**Keep container closed when not in use
Keep away from heat and flame
Keep out of reach of children
Practice good housekeeping procedures

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS	Classification
Bisphenol A/epichlorohydrin Resin	< 95	25068-38-6	500-033-5	Xi,N; R36/38, R43, R51/53

(Full text of R-Phrases can be found under heading 16)

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

INGESTION: Swallowing less than an ounce will not cause significant harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get medical attention.

INHALATION: No specific treatment is necessary since this material is not likely to be hazardous by inhalation. If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: (220°F)

EXTINGUISHING MEDIA: Use foam, dry chemical, carbon dioxide, or fine water spray when fighting fires involving this material.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, aldehydes, amines, aniline, acids and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the conditions of combustion.

FIRE FIGHTING PROCEDURES: Firefighters / rescue personnel should wear positive pressure self-contained breathing apparatus and full protective equipment. Cool exposed containers with water to prevent pressure buildup. If large quantities are involved, evacuate area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Activate available exhaust ventilation equipment in the immediate spill area. Wipe up or absorb spilled material with paper towels or other absorbent material. Wash area with soapy water to remove residue. Collect absorbed material and water rinses in appropriate containers. Dispose of in accordance with Federal, State and local regulations.

LARGE SPILL: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on adsorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including ignitable vapors, have been removed thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for disposal.

RELEASE NOTES: Spill response operations must be conducted in accordance with the provisions of OSHA 29 CFR 1910.120. Review the entire MSDS before proceeding with spill response.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Minimize contact with unprotected skin and eyes and ensure that adequate ventilation is provided in the work area. Store material in a cool, dry place.

HANDLING: Keep container closed when not in use, avoid contact with eyes and prolonged or repeated contact with skin. Maintain good housekeeping practices.

STORAGE: Keep container closed when not in use, store in a cool dry place away from heat and flames. Keep out of the reach of children and do not re-use this container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³
Bisphenol A/epichlorohydrin Resin	TWA	[1]	[1]	[1]	[1]
	STEL	[1]	[1]	[1]	[1]
Footnotes:					
1. Not Established					

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN: Wear impervious gloves and appropriate protective clothing or equipment to prevent prolonged or repeated contact with skin. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using restroom facilities. Promptly remove contaminated clothing and launder thoroughly before reuse.

RESPIRATORY: Provide effective mechanical exhaust ventilation to draw vapors, mists or fumes generated during processing away from the worker and prevent routine inhalation, especially during elevated temperature processing. Ventilation must be sufficient to maintain airborne levels of Section 2 chemicals below their PEL/TLV values. Use an appropriate, properly fitted respirator if exposures exceed PEL/TLV values. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Maintain good housekeeping practices, minimize contact with skin and eyes, and provide appropriate ventilation.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: Clear

COLOR: Amber

FLASHPOINT AND METHOD: (220°F)

SOLUBILITY IN WATER: Slight

SPECIFIC GRAVITY: 1.170 gm/cm³

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

STABILITY: Stable under normal handling and storage conditions.

POLYMERIZATION: It will not vigorously polymerize, decompose, condense or not become self-reactive under conditions of shocks, pressure, or temperature. Uncontrolled mixing with curing agents may cause hazardous polymerization.

CONDITIONS TO AVOID: Contact with acidic, basic, or oxidizing materials. Avoid storage in open containers, exposure to open flame or uncontrolled heat, uncontrolled mixing or exposure to incompatible substances.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, aldehydes, amines, aniline, acids and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the conditions of combustion.

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)
Bisphenol A/epichlorohydrin Resin	> 2000 mg/kg	> 2000 mg/kg

EYE EFFECTS: Contains materials irritating to the eyes. Symptoms may include blurred vision, burning sensation and tearing.

SKIN EFFECTS: Contains materials that cause moderate skin irritation. Prolonged or repeated exposure to the liquid may exert a defatting or drying action on the skin, possibly resulting in dermatitis. This product may cause skin sensitization / allergic skin reactions that may be severe in certain individuals. Symptoms include rash, itching, hives, swelling.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Do not flush to sewer.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of container and unused contents in accordance with federal, state, and local requirements.

EMPTY CONTAINER: Do not re-use this container. Keep away from heat, flames or sparks. Do not cut, puncture or weld on or near this container.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not restricted by DOT

ROAD AND RAIL (ADR/RID)

PROPER SHIPPING NAME: Not restricted

AIR (ICAO/IATA)

SHIPPING NAME: Not restricted

VESSEL (IMO/IMDG)**SHIPPING NAME:** Not restricted**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****ACUTE:** Yes **CHRONIC:** Yes**CALIFORNIA PROPOSITION 65:** Phenyl Glycidyl Ether (CAS# 122-60-1) is present at <6 ppm. This material is known to the State of California to cause cancer.**16. OTHER INFORMATION****RELEVANT R-PHRASES:**

R36/38: Irritating to eyes and skin.

R43: May cause sensitization by skin contact.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

REVISION SUMMARY: New MSDS**HMIS RATING**

HEALTH:	2
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	C

MANUFACTURER DISCLAIMER: The information contained in this Material Safety Data Sheet is believed to be accurate at the time of preparation and is prepared from sources of information believed to be reliable. SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Nothing contained herein should be construed as a recommendation to use this product in conflict with Federal, State or local regulations or existing patents covering any material or its use. The customer assumes full responsibility for determining appropriate use and application of the product. All values stated are typical and should not be considered a specification for the product.

MATERIAL SAFETY DATA SHEET

OB-100 (Part B - Hardener)

Date Issued: 01/08/2009

MSDS No: A-4000-2 Hardener

A-4000-2 Hardener

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: A-4000-2 Hardener
GENERAL USE: Part B of a Two Component Epoxy

SUPPLIER

OMEGA ENGINEERING, Inc.
ONE Omega Drive Box 4047
Stamford, CT. 06907

Phone: 203-359-1660

Fax: 203-359-7770

E-Mail: INFO@OMEGA.COM WWW.OMEGA.COM

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTEL (US Transportation) : 1-800-255-3924

International (Call Collect) : +01-813-248-0585

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: Corrosive. Will cause eye burns and permanent tissue damage.

POTENTIAL HEALTH EFFECTS

EYES: Corrosive to the eyes and may cause severe damage including blindness.

SKIN: Causes skin burns, irritation and possible allergic reaction.

INGESTION: Can burn mouth, throat and stomach.

INHALATION: Prolonged or repeated inhalation may cause lung damage and/or central nervous system disturbances.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Eyes may become irritated, red or itchy.

SKIN: Skin may become itchy, red or irritated.

INGESTION: Ingestion of this material can cause mouth, throat, esophageal, and gastrointestinal tract irritation.

ACUTE TOXICITY: Symptoms of overexposure include: tearing of eyes, burning sensation in the throat, cough, chest discomfort or skin burning.

CHRONIC EFFECTS: Corrosive and may cause severe and permanent damage to mouth, throat and stomach.

SENSITIZATION: May cause allergic skin reaction.

HEALTH HAZARDS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

COMMENTS:

Keep container closed when not in use
Keep away from heat and flame
Keep out of reach of children
Practice good housekeeping procedures

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS	Classification
Mercaptan Terminated Polymer	< 95	Proprietary	Proprietary	
2,4,6-tris(dimethylaminomethyl)phenol	< 3	000090-72-2	202-013-9	Xn; R22, R36/38
Phenol, [(dimethylamino)methyl]-	< 3	025338-55-0		

(Full text of R-Phrases can be found under heading 16)

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use foam, dry chemical, carbon dioxide, or fine water spray when fighting fires involving this material.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, aldehydes, amines, aniline, acids and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the conditions of combustion.

FIRE FIGHTING PROCEDURES: Firefighters / rescue personnel should wear positive pressure self-contained breathing apparatus and full protective equipment. Cool exposed containers with water to prevent pressure buildup. If large quantities are involved, evacuate area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Activate available exhaust ventilation equipment in the immediate spill area. Wipe up or absorb spilled material with paper towels or other absorbent material. Wash area with soapy water to remove residue. Collect absorbed material and water rinses in appropriate containers. Dispose of in accordance with Federal, State and local regulations.

LARGE SPILL: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on adsorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including ignitable vapors, have been removed thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for disposal.

RELEASE NOTES: Spill response operations must be conducted in accordance with the provisions of OSHA 29 CFR 1910.120. Review the entire MSDS before proceeding with spill response.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Minimize contact with unprotected skin and eyes and ensure that adequate ventilation is provided in the work area. Store material in a cool, dry place.

HANDLING: Keep container closed when not in use, avoid contact with eyes and prolonged or repeated contact with skin. Maintain good housekeeping practices.

STORAGE: Keep container closed when not in use, store in a cool dry place away from heat and flames. Keep out of the reach of children and do not re-use this container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)			
		EXPOSURE LIMITS	
		ACGIH TLV	
Chemical Name		ppm	mg/m ³
2,4,6-tris(dimethylaminomethyl)phenol	TWA	[1]	[1]
Footnotes:			
1. Not Established			

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN: Wear impervious gloves and appropriate protective clothing or equipment to prevent prolonged or repeated contact with skin. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using restroom facilities. Promptly remove contaminated clothing and launder thoroughly before reuse.

RESPIRATORY: Provide effective mechanical exhaust ventilation to draw vapors, mists or fumes generated during processing away from the worker and prevent routine inhalation, especially during elevated temperature processing. Ventilation must be sufficient to maintain airborne levels of Section 2 chemicals below their PEL/TLV values. Use an appropriate, properly fitted respirator if exposures exceed PEL/TLV values. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Maintain good housekeeping practices, minimize contact with skin and eyes, and provide appropriate ventilation.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Pungent

APPEARANCE: Clear

VAPOR PRESSURE: < 1 mmHg at 25°C

VAPOR DENSITY: > 1

BOILING POINT: Not Determined

SOLUBILITY IN WATER: Slight

SPECIFIC GRAVITY: 1.130 at 25°C

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal handling and storage conditions.

POLYMERIZATION: It will not vigorously polymerize, decompose, condense or not become self-reactive under conditions of shocks, pressure, or temperature. Uncontrolled mixing with resins may cause hazardous polymerization.

CONDITIONS TO AVOID: Contact with acidic, basic, or oxidizing materials. Avoid storage in open containers, exposure to open flame or uncontrolled heat, uncontrolled mixing or exposure to incompatible substances.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, aldehydes, amines, aniline, acids and other organic substances may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the conditions of combustion.

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)
2,4,6-tris(dimethylaminomethyl)phenol	200 to 2000 mg/kg	200 to 2000 mg/kg

EYE EFFECTS: Contains materials irritating to the eyes. Symptoms may include blurred vision, burning sensation and tearing.

SKIN EFFECTS: Contains materials that cause moderate skin irritation. Prolonged or repeated exposure to the liquid may exert a defatting or drying action on the skin, possibly resulting in dermatitis. This product may cause skin sensitization / allergic skin reactions that may be severe in certain individuals. Symptoms include rash, itching, hives, swelling.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Do not flush to sewer.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of container and unused contents in accordance with federal, state, and local requirements.

EMPTY CONTAINER: Do not re-use this container. Keep away from heat, flames or sparks. Do not cut, puncture or weld on or near this container.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Amines, Liquid, Corrosive, N.O.S.

TECHNICAL NAME: dimethylamino(methyl) phenol

PRIMARY HAZARD CLASS/DIVISION: 8

UN/NA NUMBER: 2735

PACKING GROUP: III

ROAD AND RAIL (ADR/RID)

PROPER SHIPPING NAME: Amines, Liquid, Corrosive, N.O.S.**UN NUMBER:** 2735**HAZARD CLASS:** 8**PACKING GROUP:** III**AIR (ICAO/IATA)****SHIPPING NAME:** Amines, Liquid, Corrosive, N.O.S.**TECHNICAL NAME:** dimethylamino(methyl) phenol**PRIMARY HAZARD CLASS/DIVISION:** 8**PACKING GROUP:** III**15. REGULATORY INFORMATION****UNITED STATES****TSCA (TOXIC SUBSTANCE CONTROL ACT)**

Chemical Name	CAS
Phenol, [(dimethylamino)methyl]-	025338-55-0

16. OTHER INFORMATION**RELEVANT R-PHRASES:**

R22: Harmful if swallowed.

R36/38: Irritating to eyes and skin.

REVISION SUMMARY: New MSDS**HMIS RATING**

HEALTH:	3
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	C

MANUFACTURER DISCLAIMER: The information contained in this Material Safety Data Sheet is believed to be accurate at the time of preparation and is prepared from sources of information believed to be reliable. SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Nothing contained herein should be construed as a recommendation to use this product in conflict with Federal, State or local regulations or existing patents covering any material or its use. The customer assumes full responsibility for determining appropriate use and application of the product. All values stated are typical and should not be considered a specification for the product.