MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **THERMALBOND 4952 B**
Product Use/Class: **EPOXY HARDENER**
Reference: Also sold as Circalok 6252

Manufactured for AAVID THERMALLOY, LLC

70 COMMERCIAL STREET
CONCORD, NH 03301

INFORMATION TELEPHONE:
603 224-9988

TRANSPORTATION EMERGENCY:
CHEMTEL 24 HR EMERGENCY
800 225-3924

NON-TRANSPORTATION EMERGENCY:
800 225-3924

EFFECTIVE DATE: 09/28/2007

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	Skin
Polyoxypropylenediamine	9046-10-0	50.0 %	N.E.	N.E.	N.E.	N.E.	N.A.
Amine compound	PROPRIETARY	45.0 %	N.E.	N.E.	N.E.	N.E.	N.A.
Triethanolamine	102-71-6	10.0 %	5 mg/m3	N.E.	N.E.	N.E.	N.A.
Amine compound	PROPRIETARY	5.0 %	1 ppm	N.E.	N.E.	N.E.	S
Piperazine	110-85-0	5.0 %	N.E.	N.E.	N.E.	N.E.	N.A.
Amine curing agent	31326-29-1	5.0 %	N.E.	N.E.	N.E.	N.E.	N.A.
Bisphenol A	80-05-7	5.0 %	N.E.	N.E.	N.E.	N.E.	N.A.

N.A. - Not Applicable, N.E. - Not Established, S - Skin Designation

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW ***:** Amber Liquid, with Ammonia odor. Harmful if inhaled. Harmful if absorbed through skin. May cause skin and eye burns. May cause allergic skin reaction. May cause allergic respiratory reaction. Causes respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: May be corrosive to eyes; contact may cause eye burns. Eye contact may cause severe eye damage, including vision disturbances, corneal damage, and blindness.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May be absorbed through the skin in harmful amounts. May be corrosive to skin; contact may cause skin burns. May cause skin sensitization. May cause allergic skin reaction. May cause dermatitis.

EFFECTS OF OVEREXPOSURE - INHALATION: Possible irritation of the respiratory system can occur causing a variety of symptoms such as dryness of the throat, tightness of the chest, and shortness of breath. May cause headache and nausea. Vapors may cause irritation of nose, throat, and upper respiratory tract. May cause respiratory sensitization. May cause allergic respiratory reaction. May cause lung damage.

EFFECTS OF OVEREXPOSURE - INGESTION: Harmful if swallowed. Ingestion is not an expected route of entry in industrial or commercial uses.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: May cause conjunctivitis or other adverse eye effects. May cause skin sensitization. May cause respiratory sensitization. Extremely high vapor concentrations may cause lung damage. May cause liver or kidney damage. Chronic skin contact may cause dermatitis.

PRIMARY ROUTE(S) OF ENTRY: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

4. FIRST AID MEASURES

FIRST AID - EYE CONTACT: Flush eyes immediately with large amount of water for at least 15 minutes holding eyelids open while flushing. Get prompt medical attention.

FIRST AID - SKIN CONTACT: Flush contaminated skin with large amounts of water while removing contaminated clothing. Wash affected skin areas with soap and water. Get medical attention if symptoms occur.

FIRST AID - INHALATION: Move person to fresh air. Restore and support continued breathing. If breathing is difficult, give oxygen. Get immediate medical attention.

FIRST AID - INGESTION: If swallowed, do not induce vomiting. Give victim one or two glasses of water or milk. Call a physician or poison control center immediately for further instructions. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 201 °F, 93 °C
Setaflash Closed Cup

LOWER EXPLOSIVE LIMIT (%): Not Applicable
UPPER EXPLOSIVE LIMIT (%): Not Applicable

AUTOIGNITION TEMPERATURE: N.D.

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep containers tightly closed. Closed containers may rupture when exposed to extreme heat. Use water spray to keep fire exposed containers cool. During a fire, irritating and/or toxic gases and particulate may be generated by thermal decomposition or combustion.

SPECIAL FIREFIGHTING PROCEDURES: Wear full firefighting protective clothing, including self-contained breathing apparatus (SCBA). If water is used, fog nozzles are preferable.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Keep non-essential personnel a safe distance away from the spill area. Avoid breathing vapors. Use self-contained breathing equipment. Notify appropriate authorities if necessary. Avoid contact. Before attempting cleanup, refer to hazard caution information in other sections of the MSDS form. Scoop spilled material into an appropriate container for proper disposal. (If necessary, use inert absorbent material to aid in containing the spill).

7. HANDLING AND STORAGE

HANDLING: Keep closure tight and container upright to prevent leakage. Avoid skin and eye contact. Wash thoroughly after handling. Avoid breathing of vapor or spray mists. Do not handle until all safety precautions have been read and understood. Empty containers should not be re-used. Use with adequate ventilation.

STORAGE: Store only in well-ventilated areas. Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Sufficient ventilation in pattern and volume should be provided in order to maintain air contaminant levels below recommended exposure limits.

RESPIRATORY PROTECTION: Use a NIOSH approved air-purifying organic vapor respirator if occupational limits are exceeded. For emergency situations, confined space use, or other conditions where exposure limits may be greatly exceeded, use an approved air-supplied respirator. Observe OSHA regulations (29CFR 1910.134) for respirator use.

SKIN PROTECTION: Use neoprene, nitrile, or rubber gloves to prevent skin contact.

EYE PROTECTION: Use safety eyewear including safety glasses with side shields and chemical goggles where splashing may occur.

OTHER PROTECTIVE EQUIPMENT: Remove and wash contaminated clothing before reuse.

HYGIENIC PRACTICES: Wash hands before eating, smoking, or using toilet facility. Food or beverages should not be consumed anywhere this product is handled or stored. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	Ammonia	**BOILING RANGE:**	290 °F - 680 °F
APPEARANCE:	Amber	**VAPOR PRESSURE:**	N.D.
PHYSICAL STATE:	Liquid	**VAPOR DENSITY:**	Heavier than Air
ODOR THRESHOLD:	N.D.	**EVAPORATION RATE:**	Not Applicable
SOLUBILITY IN H2O:	Insoluble	**DENSITY, LB/GL:**	8.2059 lb/gal
pH:	N.A.	**VOLATILE BY WEIGHT:**	0.00 %
FREEZE POINT:	N.D.	**VOLATILE BY VOLUME:**	0.00 %
COEFFICIENT OF WATER/OIL DISTRIBUTION:	N.D.		

(See section 16 for abbreviation legend)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY: Strong acids, bases, and strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, organic or inorganic nitrogen compounds including traces of hydrogen cyanide.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

STABILITY: Product is stable under normal storage conditions.

11. TOXICOLOGICAL INFORMATION

PRODUCT LD50	**(ORAL)**	No Data
	(DERMAL)	No Data
PRODUCT LC50		No Data

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No Information

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be done in accordance with Federal (40CFR Part 261), state and local environmental control regulations. If waste is determined to be hazardous, use licensed hazardous waste transporter and disposal facility.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: Amines, liquid, corrosive, n.o.s.

DOT HAZARD CLASS:	8
SECONDARY HAZARD:	None
DOT UN/NA NUMBER:	2735
PACKING GROUP:	III
EMERGENCY RESPONSE GUIDE NUMBER:	153

The listed transportation classification applies to US DOT non-bulk road shipments. It does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors. For the most accurate shipping information, refer to your transportation/compliance department.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

This product is considered hazardous as defined by 29 CFR 1910.1200 (OSHA HazCom Standard.)

SARA SECTION 313
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number	Weight % Less Than
Bisphenol A	80-05-7	5.0 %

TOXIC SUBSTANCES CONTROL ACT:

INVENTORY STATUS
The chemical substances in this product are on the TSCA Section 8 Inventory.

EXPORT NOTIFICATION
This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

NONE

16. OTHER INFORMATION

HMIS RATINGS - HEALTH: 3* FLAMMABILITY: 1 PHYSICAL HAZARD: 1

* - Indicates a chronic hazard; see Section 3

VOLATILE ORGANIC COMPOUNDS
Calculated 0 lb/gal, 0 g/l

LEGEND: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

DISCLAIMER

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.