



MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: THERMALBOND 4950 A		DATE: February 12, 2009					
PRODUCT NUMBER:		DATE: February 12, 2009					
TRADE NAME: THERMALBOND 4950 A GENERAL USE: EPOXY RESIN PRODUCT DESCRIPTION: Reference: Also sold as Circalok 6037 Green							
MANUFACTURER AAVID Thermalloy, LLC							
ADDRESS (NUMBER, STREET, P.O. BOX) 80 Commercial Street		DATE PREPARED: February 12, 2009 SUPERSEDES: November 7, 2005					
(CITY, STATE AND ZIP CODE) COUNTRY Concord, NH 03301 USA		CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBERS					
TELEPHONE NUMBER (General Inquiries) (603) 224-9988			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">1-800-255-3924</td> <td style="text-align: center;">813-248-0585</td> </tr> <tr> <td style="text-align: center;">North America (Toll Free)</td> <td style="text-align: center;">International and Local Calls</td> </tr> </table>	1-800-255-3924	813-248-0585	North America (Toll Free)	International and Local Calls
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SECTION 2 - HAZARDOUS INGREDIENTS

Hazardous Components	% (by Weight)	CAS #
Epoxy resin	25.0	PROPRIETARY
N-Butyl glycidyl ether	<5.0	2426-08-6

NOTES: This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS), and European Union Directive 91/155/EEC. Hazard symbols and risk phrases are based on maximum listed concentration of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS) or the European (GHS) directive 91/155/EEC and are considered trade secrets under US Federal Law (29CFR and 40CFR), Canadian Law (Health Canada Legislation), and European Union Directive 67/548/EEC.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
 Green Viscous Liquid, with No odor. May cause skin and eye irritation. May cause allergic skin reaction. May cause respiratory tract irritation.

POTENTIAL HEALTH EFFECTS

INHALATION:
 May cause respiratory tract irritation. Significant overexposure to n-butyl glycidyl ether by the inhalation route is unlikely under most ambient conditions due to its low volatility. However, vapors, aerosols, and mists may be formed during some applications such as heating or applications of uncured material on large surface areas.

SKIN:
 May cause skin irritation. May cause skin sensitization. May cause dermatitis.

EYES:
 May cause eye irritation.

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

CARCINOGENICITY:

NTP? NO	ARC MONOGRAPHS? NO	OSHA REGULATED? NO
CALIFORNIA, Prop.65? NO		ESIS NOTATION? NO

SECTION 4 - FIRST AID MEASURES

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

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

SKIN:
 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.

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 to an unconscious person.

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SECTION 5 - FIRE FIGHTING MEASURES

GENERAL HAZARDS:

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

EXTINGUISHING MEDIA:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

FIRE FIGHTING PROCEDURES:

Wear full firefighting protective clothing, including Self-Contained Breathing Apparatus (SCBA). If water is used, fog nozzles are preferable.

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.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon Oxides

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Avoid breathing vapors. Notify appropriate authorities if necessary. Avoid contact. Use appropriate respiratory protection for large spills or spills in confined area. Keep non-essential personnel away from spill area. Scoop spilled material into an appropriate container for proper disposal. (If necessary, use inert absorbent material to aid in containing the spill).

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep closure tight and container upright to prevent leakage. Avoid skin and eye contact. Wash thoroughly after handling. 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.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

HAZARDOUS COMPONENTS	NIOSH				ACGIH		OSHA		Skin
	TWA ppm	TWA mg/m3	REL ppm	REL mg/m3	TLV/TWA ppm	TWA mg/m3	PEL ppm	PEL mg/m3	
Epoxy resin	NE	NE	NE	NE	NE	NE	NE	NE	NA
N-Butyl glycidyl ether	NE	NE	5.6	30	3 ppm	NE	50	270	S

NA - Not Applicable, NE - Not Established, S - Skin Designation

PERSONAL PROTECTION

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.

PROTECTIVE GLOVES:

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 CLOTHING OR EQUIPMENT:

Use disposable or impervious clothing if work clothing contamination is likely. Remove and wash contaminated clothing before reuse.

WORK / 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.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR Odor: No, Appearance: Green, Odor Threshold: ND	VAPOR PRESSURE ND
pH NA	DENSITY (LB/GL): 19.99 lb/gal
BOILING RANGE: 244 °F - 340 °F	SOLUBILITY IN WATER Insoluble
FLASH POINT 201 °F, 93 °C Sctaflash Closed Cup	VISCOSITY Viscous Liquid
FLAMMABLE LIMITS LEL: NA UEL: NA	VAPOR DENSITY (AIR = 1) Heavier than Air
AUTOIGNITION TEMPERATURE: ND	EVAPORATION RATE (WATER = 1) NA
VOLATILE BY WEIGHT: 0.36%	VOLATILE BY VOLUME: 0.00%
VOLATILE ORGANIC COMPOUND (VOC) INFORMATION (Calculated): 0 lb/gal, 0 g/l	

NOTES: See section 16 for abbreviation legend

SECTION 10 - STABILITY AND REACTIVITY

STABILITY STABLE X	CONDITIONS TO AVOID: High temperatures.
INCOMPATIBILITY (MATERIALS TO AVOID): Amines, acids, water, hydroxyl, or active hydrogen compounds.	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Carbon Monoxide, Carbon Dioxide, aldehydes.	
HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.	CONDITIONS TO AVOID: None Related to Polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Components	CAS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Epoxy resin	PROPRIETARY	NR	NR
N-Butyl glycidyl ether	2426-08-6	NR	NR

SECTION 12 - ECOLOGICAL INFORMATION

No information regarding ecological toxicity is known for this substance. It is highly advisable not to release material into sewage systems or bodies of water.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE 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. It is the user's responsibility to follow all applicable rules and regulations regarding disposal of waste products.

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: Not Regulated	
DOT HAZARD CLASS / Pack Group: Not Regulated	IATA HAZARD CLASS / Pack Group: Not Regulated
REFERENCE: Not Regulated	IMDG HAZARD CLASS: Not Regulated
UN / NA IDENTIFICATION NUMBER: Not Regulated	RID/ADR Dangerous Goods Code: Not Regulated
LABEL: Not Regulated	UN TDG Class / Pack Group: Not Regulated
HAZARD SYMBOLS: Not Regulated	Hazard Identification Number (HIN): Not Regulated

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EU, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

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SECTION 15 - REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act): **This product is considered hazardous as defined by 29 CFR 1910.1200 (OSHA HazCom Standard.)**

SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):

Acute Health: NO	Chronic Health: Yes - Skin (dermatitis)
Fire: NO	Sudden Release of Pressure: NO
Reactive: NO	

SARA 313 REPORTABLE INGREDIENTS: None

CERCLA (USA - Comprehensive Response Compensation and Liability Act): **None**

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986: **Not Listed**

CPR (Canadian Controlled Products Regulations): **Not Listed**

IDL (Canadian Ingredient Disclosure List): **Not Listed**

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List): **Epoxy resin not researched.**

WGK Water Quality Index: **2**

SECTION 16 - OTHER INFORMATION

Legend:

- ACGIH - American Congress of Government Industrial Hygienists**
- CAS - Chemical Abstracts Service**
- EINECS - European Inventory of Existing Commercial Chemical Substances**
- HMIS - Hazardous Materials Identification System**
- IARC - International Agency for Research on Cancer**
- NA - Not Available**
- ND - Not Determined**
- NE - Not Established**
- NR - Not Reported**
- NIOSH - National Institute for Occupational Safety and Health**
- NTP - National Toxicology Program**
- OSHA - Occupational Safety and Health Administration**

HMIS HAZARD RATINGS	HEALTH:	2	0 = INSIGNIFICANT
	FLAMMABILITY:	1	1 = SLIGHT
	PHYSICAL HAZARD:	0	2 = MODERATE
	PERSONAL PROTECTIVE EQUIPMENT:	B	3 = HIGH
			4 = EXTREME

REVISION SUMMARY: Revised to GHS/E.U. protocols 2/12/2009 supersedes 11/7/2005 issue.

MSDS Prepared by:
 ChemTel Inc.
 1305 North Florida Avenue
 Tampa, Florida USA 33602-2902
 Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
 Website: www.chemtelinc.com



The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.