



Products / Interface Materials / Adhesives

Thermal Adhesives

Ther-O-Bond 1500

Epoxy casting system for potting and encapsulation

Ther-O-Bond 1600

Two part epoxy for bonding

Ther-O-Bond 2000

Rapid cure acrylic adhesive

Thermalbond™



High strength epoxy adhesive

Adhesives offer excellent heat transfer and high voltage isolation. Epoxy adhesives offer low shrinkage, and coefficients of thermal expansion comparable to copper or aluminum. They bond readily to metals, glass, ceramics, and most plastics.

Ther-O-Bond 1500

Ther-O-Bond 1500 is a versatile epoxy casting system developed for high performance, production potting and encapsulating applications where low shrinkage and rapid air evacuation are required. This formulation has a very low surface tension and a flowable viscosity, which affords excellent air release. Ther-O-Bond 1500 adheres to rigid plastics and laminates, metals and ceramics, has a low coefficient of thermal expansion and is readily machined and shaped with ordinary shop tools. The fully cured epoxy system is an excellent electrical insulator which provides good resistance to electrolysis, leakage and corrosion room water, weather, gases and chemical compounds.

Ordering Information

Description	Part Number	RoHS	PCN	Package/Kit	Size
Ther-O-Bond 1500	159900F00000G	RoHS  Compliant		Resin and Hardener	.946 liter (1 Qt.)

Handling Characteristics

Mix Ratio by Weight, Resin to Hardener:	100 to 15
Mixed Viscosity @ 25°C, cps:	1000 - 1500
Work-Life @ 25°C	45 Minutes
Gel Time @ 25°C	3-6 Hours
Cure Schedule @ 25°C	8 Hours
Cure Schedule @ 65°C	1 Hour
Cure Schedule @ 100°C	0.5 Hour

Physical Properties

Color	Black
Specific Gravity	1.50
Operating Temp, °C	-60 to 155
Heat Distortion Temp, °C	100
Hardness, Shore D:	88
Thermal Conductivity W/ (m°C)	1.26
Compressive Strength, psi	14,000
Dissipation Factor, 100 KHz @25°C	0.01
Self Extinguishing?:	yes
C.T.E. (ppm/°C)	25
Tensile Strength (@25°C)	9200 psi
Dielectric Strength (volts/mil)	800
Shelf Life (DOM)	18 months ¹

Ther-O-Bond 1500 Resistance Calculator

Enter the area of the device that will contact the heat sink:	mm ²
Enter the grease thickness:	mm
Interface Resistance =	

Formula

$$\text{interface resistance} = \frac{\text{interface thickness (mm)} * 1000}{\text{thermal conductivity (W/m-K)} * \text{contact area (mm}^2\text{)}}$$

(1) Stated shelf life is from date of manufacture. To allow for inventory cycle, product shipped from Aavid will have less than 18 months remaining shelf life. Aavid guarantees a minimum of 3 months remaining shelf life. Please adjust order quantity so all product will be consumed within 3 months of date of shipment.

RESIN TECHNOLOGY GROUP, LLC

MATERIAL SAFETY DATA SHEET

1. MATERIAL IDENTIFICATION

Product Name: **THER-O-BOND 1500 RESIN**

2. COMPOSITION

HAZARDOUS COMPONENTS	CAS NO.	PERCENT	Exposure Limits	
			ACGIH TLV-TWA	OSHA PEL
Epoxy Resin	25068-38-6	< 50	N.E.	N.E.
N - Butyl Glycidyl Ether	2426-08-6	< 5	133 mg/m ³	133 mg/m ³

Note: Due to this product's physical composition, the release or generation of dust is not expected to occur under normal conditions of use.
Abbreviations: N.E.: Not Established

3. HEALTH HAZARDS IDENTIFICATION

Primary Routes of Exposure: Eyes: Yes Skin: Yes Inhalation: Yes

Eye Contact: Contact can cause moderate irritation.

Skin Contact: Contact can cause moderate irritation; contact with this product at elevated temperatures can result in thermal burns.

Inhalation: May cause irritation to the respiratory tract.

Ingestion: May be slightly toxic and may be harmful if swallowed.

4. FIRST AID MEASURES

Eyes: Flush eyes thoroughly with water for 15 minutes while holding eyelids open. Seek medical attention immediately.

Skin: Remove contaminated clothing and shoes. Wipe excess from skin. Flush skin with water. Follow by washing with soap and water. If irritation occurs, seek medical attention. Do not reuse clothing until laundered.

Inhalation: Remove to fresh air, and provide oxygen if breathing is difficult. Consult a physician.

Ingestion: If large quantities are ingested, give no more than 2 glasses of water and induce vomiting by giving 30 cc (2 tablespoons) syrup of Ipecac, or by sticking finger to back of victim's throat. Seek medical attention promptly.

5. FIRE FIGHTING MEASURES**FLAMMABLE PROPERTIES**

Flashpoint:	270 °F (PMCC)
Explosive Limits:	Not available.
Auto-Ignition Temperature:	Not available.
Hazardous Decomposition Products:	Carbon monoxide, aldehydes, acids and other organic substances may be formed during combustion or elevated (>500 °F) temperature degradation.

Fire Fighting Instructions: Firefighters should wear full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

Extinguishing Media: Use water fog, foam, dry chemical, or carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Wear respirator and protective clothing as appropriate. Ventilate area if necessary, evacuate if airborne levels could exceed established limits. 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.

7. HANDLING AND STORAGE

Store in a cool dry place away from open flames and high temperatures. Heating this resin above 300 °F in the presence of air may cause slow oxidative decomposition above 500 °F, polymerization may occur. Some curing agents, e.g. aliphatic polyamines, can produce exothermic reactions, which in large masses can cause runaway polymerization. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity. Do not breathe fumes.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering/Ventilation Controls:	General ventilation and or local exhaust may be required to maintain airborne concentrations below established exposure limits when generating vapors or mists.
Respiratory Protection:	Where exposure exceeds established airborne limits, use a NIOSH approved respirator, or a self-contained breathing apparatus, or a supplied air respirator as necessary to control exposure.
Skin Protection:	Wear impervious gloves and protective clothing as necessary to prevent skin contact.
Eye Protection:	Wear chemical splash goggles or safety glasses with side shields.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Black liquid
Odor:	Sweet, pleasant odor
Boiling Point:	Not established.
Specific Gravity:	1.55
Vapor Pressure:	1
Vapor Density (air=1):	3.8
Evaporation Rate:	Not applicable
Solubility in Water:	Negligible

14. TRANSPORT INFORMATION

D.O.T. Classification: Combustible Liquid, N.O.S. (Butyl Glycidyl Ether)

Hazard Class: Combustible Liquid UN #: NA1993 PG: III ERG #: 128 Hazard Labels: None

Not regulated by D.O.T. if in a container of 119 gallons or less.

I.A.T.A. Classification: Not Regulated

Hazard Class: None UN #: None PG: None ERG #: None Hazard Labels: None

15. REGULATORY INFORMATION**US FEDERAL REGULATIONS**

TSCA: The chemical components of this product are contained on section 8(B) of the chemical substance inventory list (40CFR710).

SARA Title III InformationSection 313 - Toxic Chemicals:

This product contains the following chemicals subject to reporting requirements: None.

Section 302 - Extremely Hazardous Substances:

Pursuant to section 302 of SARA Title III, this product does not contain an extremely hazardous substance.

Section 311/312 - Hazard Categories:

Fire Hazard:	No	Immediate (Acute) Health Hazard:	Yes
Reactivity Hazard:	No	Delayed (Chronic) Health Hazard:	No
Sudden Release of Pressure Hazard:	No		

STATE REGULATIONS / RIGHT TO KNOW

California Proposition 65: This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive toxicity.

Pennsylvania: All of the materials in this product requiring identification by the Commonwealth of Pennsylvania are listed in section 2.

16. OTHER INFORMATION

HMIS Hazards:	Health: 2	Flammability: 1	Reactivity: 0
NFPA Hazards:	Health: 2	Flammability: 1	Reactivity: 0

This information is intended solely for the use of individuals trained in the use of this particular system.

Resin Technology Group, LLC urges each customer or recipient of this MSDS to study it carefully in order to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate in order to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1 - notify its employees, agents, contractors, and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety. 2 - furnish this same information to each of its customers for the product. 3 - request its customers to notify their employees, customers, and other users of the product of this information.

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