ATROX® 800HT6B

Electrically and Highly Thermally Conductive Die Attach Adhesive

DESCRIPTION

ATROX 800HT6B is an ultra-low stress thermosetting conductive die attach with high thermal conductivity designed for high power exposed pad semiconductors. **ATROX 800HT6B** has low resin bleed-out and low condensable organics which ensure excellent package reliability.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

TYPICAL PROPERTIES

Material Properties	Method	Value	Remarks
A. Uncured			
Chemical type		Thermosetting	
Color	Visual	Grey	
Viscosity at 25 °C at 5.0 RPM	ASTM D2196-99	13,000 cps	Brookfield Spindle 51
Thixotropic index (0.5 RPM/5.0 RPM)	ASTM D2196-99	5.0	Brookfield Spindle 51
Pot Life @ 23 °C (time to doubling of viscosity)	ISO 10364:1993	>24 hours	Brookfield Spindle 51
Storage Temperature		-40 (°C/°F)	
Shelf Life @ -40 (°C/°F)		6 months	
B. Cured			
Glass Transition (Tg)	TMA	16 °C	
Modulus at 25 °C	DMA	9.6 GPa	
Modulus at 260 °C	DMA	1.4 GPa	
CTE 1 (below Tg)	TMA	65 ppm	
CTE 2 (below Tg)	TMA	113 ppm	

Material Properties	Method	Value	Remarks
Thermal Conductivity: Bulk	Laser Flash	92 W/mK	
Volume Resistivity	4-Point Probe	0.000025 Ohm-cm	
% Moisture Absorption	72 hrs @ 85%RH/85 °C	0.2%	
Thermal Stability at 300 °C	TGA of cured sample - Ramp to 450 °C	0.3%	

DIE SHEAR STRENGTH (5.0 MM X 5.0 MM BARE SILICON DIE)

Lead Frame	Cure Condition	Measuring Temperature	Value
Ag	Ramp to 150 °C in 30 minutes + Hold for 30 minutes + 200 °C for 120 min	260 °C	13 Kg
NiPdAu (PPF)	Ramp to 150 °C in 30 minutes + Hold for 30 minutes + 200 °C for 120 min	260 °C	12 Kg
Cu	Ramp to 150 °C in 30 minutes + Hold for 30 minutes + 200 °C for 120 min	260 °C	12 Kg

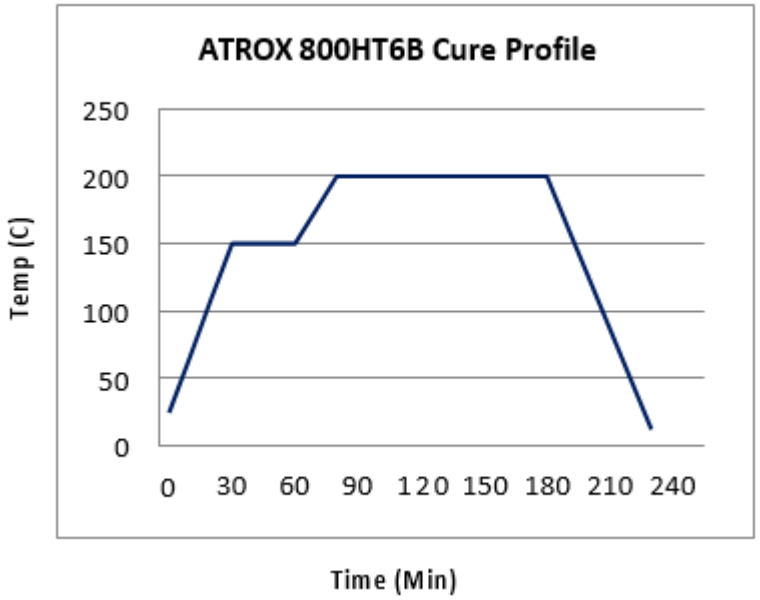
MATERIAL APPLICATION

ATROX 800HT6B is formulated to be applied using a time pressure pump equipped on most die bonders. The material should be consistently dispensed over time. Equipment settings need to be optimized for desired material deposition response based on model and configuration.

CURE

ATROX 800HT6B cures using a step cure profile of 30 minutes to 150 °C for 30 minutes followed by a slow ramp of 20 minutes to 200 °C followed by soaking for a minimum of 120 minutes. It is recommended that the cure schedule includes a controlled cooling cycle to minimize thermal stresses. It is possible to use a higher cure temperature such as 250 °C to increase the adhesion of the die attach. However, it is recommended to optimize the cure profile for void formation, especially for large die sizes.

Depending on the thermal mass of the application cure times may vary and should be optimized by the end user.



RELIABILITY PERFORMANCE

ATROX 800HT6B is recommended for excellent reliability with stable Electrical and Thermal performance during MSL and Thermal Cycling. There is no limitation on die size for metalized OR Bare Silicon die packages. However, it is recommended to consult with Customer Technical Service for optimizing critical parameters for specific packages.

For optimum results, it is recommended to set the Bond Line Thickness to approximately 1 mil after cure.

CLEAN-UP

Uncured material may be cleaned from dispenser components and surfaces with a variety of solvents, including IPA, acetone, MEK, methylene chloride, etc. Always wash and dry thoroughly prior to reuse of the dispenser components. The cleaning technique should be active cleaning of the components – flush, wash or wipe, followed by a drying step to ensure a clean, dry surface. Do not soak since this can solubilize the hardener within the uncured resin and curing (very difficult to remove). Contact your equipment supplier to ensure the solvent is compatible with their components. Clean and maintain dispense valves as recommended by the equipment manufacturer.

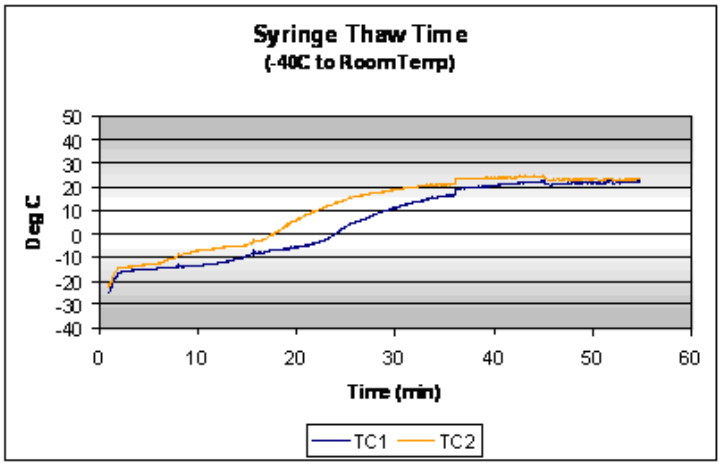
AVAILABILITY

ATROX 800HT6B is available in 5 or 10 cc EFD or Musashi syringes.

SHIPPING & STORAGE

Material is normally shipped in insulated boxes using dry ice to ensure that the ATROX 800HT6B maintains all its properties. On receipt, dry-ice remnants must be present in the insulated shipping box. If there is no dry ice or if the material is not cold, please contact Customer Service immediately. Exposing to elevated temperatures during shipment and storage will compromise on the performance aspect of the material adversely.

It is recommended to store the syringes of material at -40 °C for a maximum shelf life of 6 months. It is recommended that the material be allowed to thaw before usage. Typical thawing times for 5cc and 10cc syringes are presented in the chart below. Remove the syringe from the freezer and set it aside, allowing it to thaw at room temperature, until it reaches room temperature. To prevent contamination of unused product, do not return any material to its original container.



SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
techinfo@MacDermidAlpha.com
www.macdermidalpha.com

North America 3950 Johns Creek Ct, Suite 300 Suwanee, GA 30024 USA 908.791.2300	**Europe** Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400	**Asia** 14 Joo Koon Crescent, Singapore 629014 65.6430.0700

Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE . Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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