ATROX® HT900-3

Electrically and Thermally Conductive Die Attach Adhesive

DESCRIPTION

ATROX HT900-3 is a thermosetting conductive die attach adhesive with high thermal conductivity designed for High Brightness LED die attach which require optimum lumen output and superior heat dissipation properties. **ATROX HT900-3** has low resin bleed out and low condensable organics which ensure excellent package reliability especially on oxidized surfaces.

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 0.5 RPM	ASTM D2196-99	~63,450 cps	Brookfield Spindle 51
Viscosity at 25 °C at 5.0 RPM	ASTM D2196-99	~ 12,500 cps	Brookfield Spindle 51
Thixotropic index (0.5 RPM/5.0 RPM)	ASTM D2196-99	4.5	Brookfield Spindle 51
Pot Life @ 23 °C (elapsed time for 25% increase in viscosity)	ISO 10364:1993	>24 hours	Brookfield Spindle 51
Storage Temperature		-40 (°C/°F)	
Shelf Life @ -40 (°C/°F)		12 months	
B. Cured			
Glass Transition (Tan δ Max)	DMA	70°C	
CTE1 (below Tg)	TMA	33 ppm	

Material Properties	Method	Value	Remarks
CTE2 (above Tg)	TMA	137 ppm	
Modulus at 25 ºC	DMA	4.71 GPa	
Modulus at 260 ºC	DMA	214 MPa	
Thermal Conductivity	Laser Flash	10.8 W/mK	
Bond Joint Resistance		0.0002 Ohm-cm	
TGA Weight Loss during Cure	TGA (175C/1hour)	1.7 %	

DIE SHEAR STRENGTH (1.8 mm x 2.5 mm)

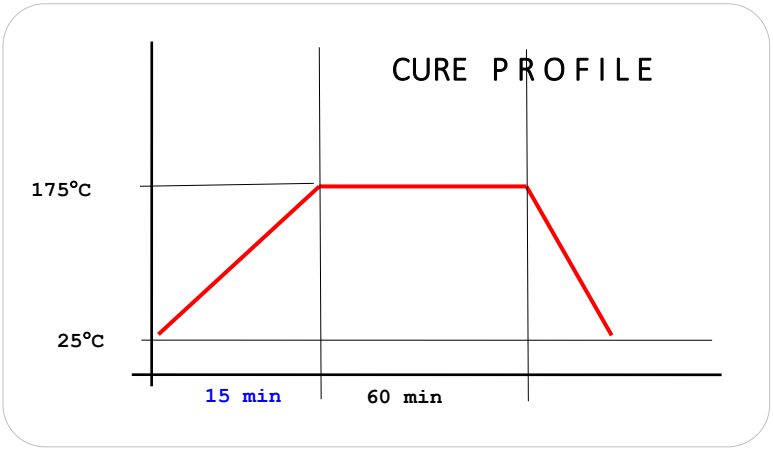
Lead Frame	Cure Condition	Measuring Temperature	Value
Cu	175 ºC/4hr	260 ºC	1.8 Kg_F
Ag	175 ºC/4hr	260 ºC	1.6 kg_F
PPF	175 ºC/4hr	260 ºC	1.5 Kg_F

MATERIAL APPLICATION

ATROX HT900-3 is formulated to be applied using a time pressure pump equipped on most die bonders. The material should be consistently dispensed over time with UPH in excess of 12,000, especially for small die applications. Equipment settings need to be optimized for desired material deposition response based on model and configuration.

CURE

ATROX HT900-3 cures ~60 minutes at 175°C. It is recommended that the cure schedule includes at ramp at 5 to 10 °C and a controlled cooling cycle to minimize thermal stresses. Alternatively, the material can be cured at 200 ºC for 60 minutes to develop higher thermal conductivity in the cured material. Depending on thermal mass of application cure times may vary and should be optimized by the end user.



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 re-use 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.

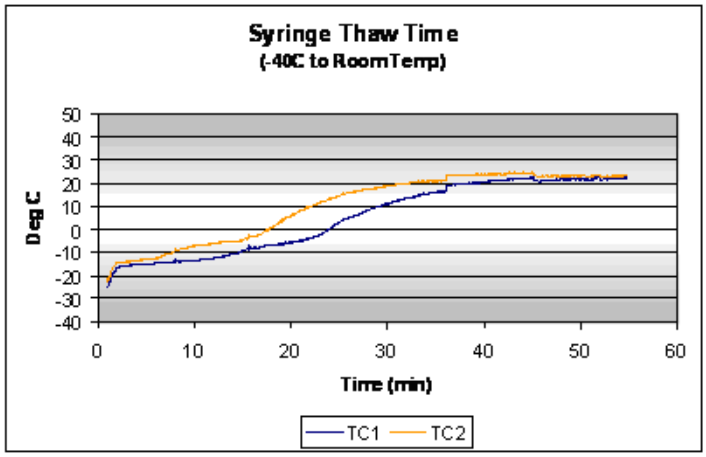
PACKAGING SIZES

ATROX HT900-3 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 HT900-3 maintains all its properties. On receipt, it must be ensured that dry-ice remnants are present in the insulated shipping box. If there is no dry ice, or if the material is not cold, then please contact MacDermid Alpha Electronics Solutions 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 chart below. Remove the syringe from freezer and set aside, allowing it to thaw at room temperature, until it reaches room temperature (90 minutes maximum for 30cc syringe). 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

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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