

# ATROX<sup>®</sup> HT900-1

## Electrically and Thermally Conductive Die Attach Adhesive

### DESCRIPTION

**ATROX HT900-1** is a thermosetting conductive die attach adhesive designed for LED packages. The unique chemistry of the **ATROX HT900-1** allows the material to be cured at lower temperatures compared to standard die attach adhesives, while maintaining its material properties.

**ATROX HT900-1** 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
<b>A. Uncured</b>			
Chemical type		Thermosetting	
Color	Visual	Grey	
Viscosity at 25 °C at 10 RPM	ASTM D2196-99	~ 25,000 cps	Brookfield Spindle 51
Thixotropic index (1 RPM/10 RPM)	ASTM D2196-99	6	Brookfield Spindle 51
Pot Life @ 23°C (time to doubling of viscosity)	ISO 10364:1993	18 hours	Brookfield Spindle 51
Storage Temperature		-40 (°C/°F)	
Shelf Life @ -40 (°C/°F)		6 months	
<b>B. Cured</b>			
Glass Transition (Tg)	ASTM D3418-99	105°C	
Modulus at 25°C	DMA	4.1 GPa	

Material Properties	Method	Value	Remarks
Modulus at 260 °C	DMA	480 MPa	
CTE1(Below Tg)	TMA	54 ppm	
CTE2 (Above Tg)	TMA	164 ppm	
Thermal Conductivity	Laser Flash	>7 W/mK	
Volume Resistivity	4-Point probe	<0.0001 Ohm-cm	
Junction Resistivity	nVoltmeter	<0.5 mOhm	
Die Shear Strength	3mm x 3mm Si Die on Au	>10Kg-F	
Chemical type		Thermosetting	
Color	Visual	Grey	
Viscosity at 25 °C at 10 RPM	ASTM D2196-99	~ 25,000 cps	Brookfield Spindle 51

## MATERIAL APPLICATION

ATROX HT900-1 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 HT900-1 cures in 30 minutes at 130 °C. The material can also be snap cured at 165 °C in 3 minutes. It is recommended that the cure schedule includes at ramp at 5 to 10 °C and a controlled cooling cycle to minimize thermal stresses. 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 HT900-1 is available in 5 or 10 cc EFD or Musashi syringes.

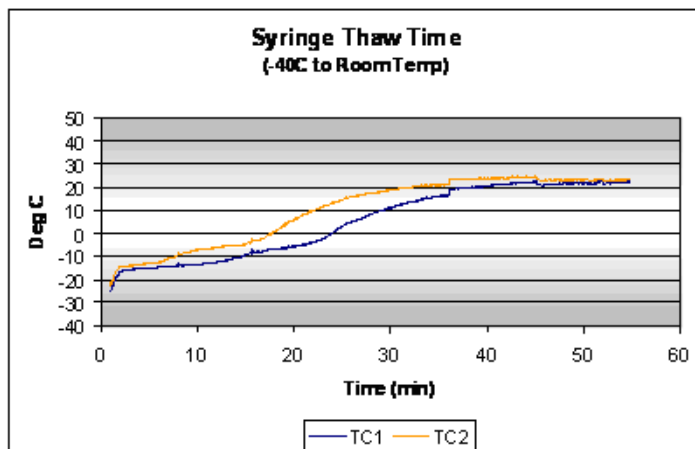
**SAFETY & WARNING**

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.**

**SHIPPING & STORAGE**

Material is normally shipped in insulated boxes using dry ice to ensure that the ATROX HT900-1 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

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### CONTACT INFORMATION

To confirm this document is the most recent version, please contact  
**techinfo@MacDermidAlpha.com**  
[www.macdermidalpha.com](http://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

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