

ALPHA[®] HiTech AD13-9910B

Ultra-Low Temperature Adhesive

DESCRIPTION


ALPHA HiTech AD13-9910B is a one-component, ultra-low temperature cure epoxy system. It can be cured at temperatures as low as 60 °C, enabling excellent adhesion strength and a reduction in the defect rate on very temperature sensitive parts and substrates.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Suitable for plastic parts or substrates that are very sensitive to high temperature exposure
- Excellent dispensing performance – jetting [$< 35\text{ °C}$ at nozzle], time/pressure or auger
- Fast cure at very low temperatures
- Excellent adhesion strength on Stainless Steel (SUS), Nickel, PCBs, Magnets and Liquid Crystal Polymer (LCP).
- Meets market reliability requirements such as adhesion strength in high temperatures and high humidity.
- Halogen-Free & Complies with RoHS Directive 2015/863/EU

APPLICATION GUIDELINES

| Storage | Thawing | Application | Curing |
|---|--|---|--|
| <ol style="list-style-type: none"> 1. Freeze at $\leq -20\text{ °C}$ to guarantee product stability. 2. Upright position, tip facing bottom.  | <ol style="list-style-type: none"> 1. Remove the syringe from the freezer. 2. Set aside at room temperature for 2 hours. 3. Do not open the cap before the product is sufficiently thawed. 4. Product should not be refrozen after thawed. 5. To prevent contamination of unused product, do not return any material to its original container. | ALPHA HiTech AD13-9910B can be effectively dispensed at room temperature condition. | For full property development, cure at $\geq 60\text{ °C}$ and hold for a minimum of 30 minutes (Convection Oven). |

TECHNICAL DATA

| Category | Specification |
|--|-----------------------------|
| Typical Uncured Material Properties | |
| Appearance | Black |
| Viscosity (Malcom PC-10A, 30rpm @25 °C, cP) | 8,000 to 18,000 |
| Thixotropy Index | 5.0 to 6.5 |
| Specific Gravity | 1.0 to 1.2 |
| Filler Content (SiO ₂), % | < 5 |
| Average Filler Size, μm | ≤ 0.1 |
| Maximum Filler Size, μm | ≤ 0.1 |
| Pot Life @ 25 °C, days | 3 |
| Shelf Life @ ≤ -20 °C, months | 6 |
| Available Standard Packaging | 10cc, 30cc Musashi syringes |
| Typical Cured Materials Properties | |
| Glass Transition (T _g), °C via TMA | 40 ± 10 |
| CTE (α ₁), <T _g , ppm | 45 ± 10 |
| CTE (α ₂), >T _g , ppm | 185 ± 20 |
| Hardness (Shore D) | 50 to 65 |
| Young's Modulus, Mpa (via DMA), 25°C | 990 |
| Linear Shrinkage, % | 1.5 |
| Volume Shrinkage, % | 4.2 |
| Water Absorption, % | 25 °C for 24 hour: <1.0 |
| | 100 °C for 2 hour: 2.3 |
| Halogen, ppm (per 3rd Party Lab Testing) | Br: N.D |
| | Cl: 615 |
| Poisson's Ratio | 0.44 |

| Category | Specification | |
|--|------------------------|------|
| Tensile Modulus, N/mm ² (via UTM) | 9.6 | |
| Elongation, % | 124 | |
| Adhesion Strength, Kgf (High Temp/ High Humidity) | 0 hr @ 85 °C /85% RH | 22.3 |
| | 120 hr @ 85 °C /85% RH | 11.8 |
| | 240 hr @ 85 °C /85% RH | 10.8 |
| | 480 hr @ 85 °C /85% RH | 8.5 |

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 at MacdermidAlpha.com/assembly-solutions/knowledge-base.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
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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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