

ALPHA[®] HiTech EN31-4007 Series

Solder Joint Strengthening Encapsulants

DESCRIPTION

ALPHA HiTech EN31-4007 Series of encapsulants are one-component epoxy systems designed to improve the attachment strength of solder joints by encapsulating the material over the chip component. These products prevent chip, IC devices from dropping out. For glob top, these protect the chip/die from cracking.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS


Users of these materials can secure the following balanced set of the features and benefits from this material:

- Excellent Impact Bending
- Excellent Drop Shock
- Excellent Impact Resistance
- Impart Water Proofing Property
- Complies with RoHS Directive 2011/65/EU
- Halogen-free
- Available in Pale Yellow, Black and Fluorescent colors

TECHNICAL DATA

Category	Results
Typical Uncured Material Properties	
Chemistry	Epoxy
Appearance	Pale Yellow (EN31-4007); Black (EN31-4007B); Fluorescent (EN31-4007F)
Viscosity (Malcom PC-10A, 30rpm @25 °C, cP)	17,000 to 23,000
Specific Gravity	1.1 to 1.2
Thixotropic Index	≥ 3.5
Pot Life @ 25 °C, days	20
Shelf Life at 1 to 10 °C, months	6
Available Packaging	10cc, 30cc, 50cc Syringe
Typical Cured Material Properties	
Glass Transition (T _g), °C via TMA	25 ± 5
CTE (α ₁), <T _g , ppm	65 ± 15
CTE (α ₂), >T _g , ppm	200 ± 25
Hardness (Shore D)	30 to 40
Moisture Absorption, 24-hr @H ₂ O/25 °C, wt%	≤ 1.0

PROCESSING GUIDELINES

Storage & Handling	Printing	Application	Curing
<p>1. Store at 1 to 10 °C to guarantee product stability.</p> <p>2. Upright Position, tip facing the bottom</p> 	<ol style="list-style-type: none"> 1. Remove the syringe from refrigerator. 2. Set aside at room temperature for 2 hours. 3. Do not open the cap before the product is sufficiently thawed. 4. To prevent contamination of unused product, do not return any material to its original container. 	<p>ALPHA HiTech EN31-4007 Series can be effectively dispensed at room temperature condition.</p>	<p>For full property development, cure at 135 °C and hold for a minimum of 5 minutes (convection oven).</p>

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 AlphaAssembly.com**

CONTACT INFORMATION

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

<p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
---	---	---

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

DISCLAIMER: All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. No statement or recommendation shall constitute a representation unless set forth in an agreement signed by officers of seller and manufacturer. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY IS MADE. The following warranty is made in lieu of such warranties and all other warranties, express, implied, or statutory. Products are warranted to be free from defects in material and workmanship at the time sold. The sole obligation of seller and manufacturer under this warranty shall be to replace any noncompliant product at the time sold. Under no circumstances shall manufacturer or seller be liable for any loss, damage or expense, direct, indirect, incidental or consequential, arising out of the inability to use the product. Notwithstanding the foregoing, if products are supplied in response to a customer request that specifies operating parameters beyond those stated above, or if products are used under conditions exceeding said parameters, the customer by acceptance or use thereof assumes all risk of product failure and of all direct, indirect, incidental and consequential damages that may result from use of the products under such conditions, and agrees to exonerate, indemnify, defend and hold harmless MacDermid, Incorporated and its affiliates therefrom. No suggestion for product use nor anything contained herein shall be construed as a recommendation to use any product in a manner that infringes any patent or other intellectual property rights, and seller and manufacturer assume no responsibility or liability for any such infringement.

© 2019 MacDermid, Inc. and its group of companies. All rights reserved. "(R)" and "TM" are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.