

ABLEBOND® 84-1LMI

ELECTRICALLY CONDUCTIVE EPOXY ADHESIVE

DESCRIPTION

ABLEBOND® 84-1LMI silver-filled, electrically conductive epoxy adhesive is designed for microelectronic chip bonding. This high purity adhesive exhibits low bleed tendency and low outgassing. ABLEBOND 84-1LMI ad-

hesive is ideal for application by automatic dispenser or hand probe. ABLEBOND 84-1LMI adhesive meets the requirements of MIL-STD-883, Method 5011.

<i>Typical Uncured Properties</i>		<i>84-1LMI</i>	<i>Test Description</i>	<i>Test Method</i>
Filler Type		Silver		
Viscosity @ 25°C		30,000 cP	Brookfield CP51 @ 5 rpm	ATM-0018
Thixotropic Index		4.0	Viscosity @ 0.5/Viscosity @ 5 rpm	ATM-0089
Work Life @ 25°C		2 weeks	25% increase in viscosity @ RT	ATM-0087
Storage Life		@ 5°C	3 months	ATM-0068
		@ -10°C	6 months	
		@ -40°C	1 year	
<i>Cure Process Data</i>		<i>84-1LMI</i>	<i>Test Description</i>	<i>Test Method</i>
Recommended Cure Condition		1 hour @ 150°C		
Alternate Cure Condition		2 hours @ 125°C		
<i>PHYSIOCHEMICAL PROPERTIES - Post Cure</i>		<i>84-1LMI</i>	<i>Test Description</i>	<i>Test Method</i>
Ionics	Chloride Sodium Potassium	1 ppm 3 ppm 2 ppm	Teflon flask, 5 gm sample/20-40 mesh, 50 gm DI water, 100°C for 24 hours	ATM-0007
Water Extract Conductivity		10 µmhos/cm	Conductometer	ATM-0044
pH		5.5	pHmeter	ATM-0002
Weight Loss @ 300°C		0.19%	Thermogravimetric Analysis	ATM-0073
Glass Transition Temperature		103°C	TMA penetration mode	ATM-0058
Coefficient of Thermal Expansion		Below Tg	55 ppm/°C	TMA expansion mode
		Above Tg	150 ppm/°C	

The figures shown above are typical values only. If you need to write a specification, please request our current Standard Release Specification.

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<i>THERMAL/ELECTRICAL PROPERTIES - Post Cure</i>	<i>84-1LMI</i>	<i>Test Description</i>	<i>Test Method</i>				
Thermal Conductivity	2.4 W/mK	C-MATIC conductance tester	ATM-0017				
Volume Resistivity	0.0001 ohm-cm	4-point probe	ATM-0020				
<i>MECHANICAL PROPERTIES - Post Cure</i>	<i>84-1LMI</i>	<i>Test Description</i>	<i>Test Method</i>				
Die Shear Strength @ 25°C	19 kg _f /die	2 x 2mm (80 x 80 mil) Si die on Ag/Cu leadframe	ATM-0052				
Lap Shear Strength	<table border="1"> <tr> <td>MPa</td> <td>12</td> </tr> <tr> <td>PSI</td> <td>1700</td> </tr> </table>	MPa	12	PSI	1700	Al to Al	ATM-0011
MPa	12						
PSI	1700						

APPLICATION GUIDELINES

SHIPMENT

This Ablestik product is packed and shipped in dry ice at -80°C. Inside every dry ice shipment of Ablestik's products is a small packet containing the ABLECUBE. This is a small blue cube which retains its shape at -40°C. If the ABLECUBE is exposed to temperatures higher than -40°C, the cube will melt.

Please check the state of the ABLECUBE to ensure the integrity of the shipment. If the ABLECUBE has melted upon Receiving inspection, place the entire shipment in a -40°C freezer and contact your Ablestik Customer Service or Sales Representative.

UNPACKING

Transfer the syringes from the dry ice to a -40°C freezer without ANY delays. Freeze-thaw voids will form in the syringes if the syringes are repeatedly thawed and refrozen.

STORAGE

This Ablestik product must be stored at -40°C. The shelf life of the material is only valid when the material has been stored at the specified storage condition. Incorrect storage conditions will degrade the performance of the material in both handling (e.g. dispensing or screen printing) and final cured properties.

THAWING

Allow the container to reach room temperature before use. After removing from the freezer, set the syringes to stand vertically while thawing. Refer to the Syringe Thaw Time chart for the thaw time recommendation.

DO NOT open the container before contents reach ambient temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.

DO NOT re-freeze. Once thawed to room temperature, the adhesive should not be re-frozen.

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ADHESIVE APPLICATION

Thawed adhesive should be immediately placed on dispense equipment for use. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.

Adhesive must be completely used within the product's recommended work life.

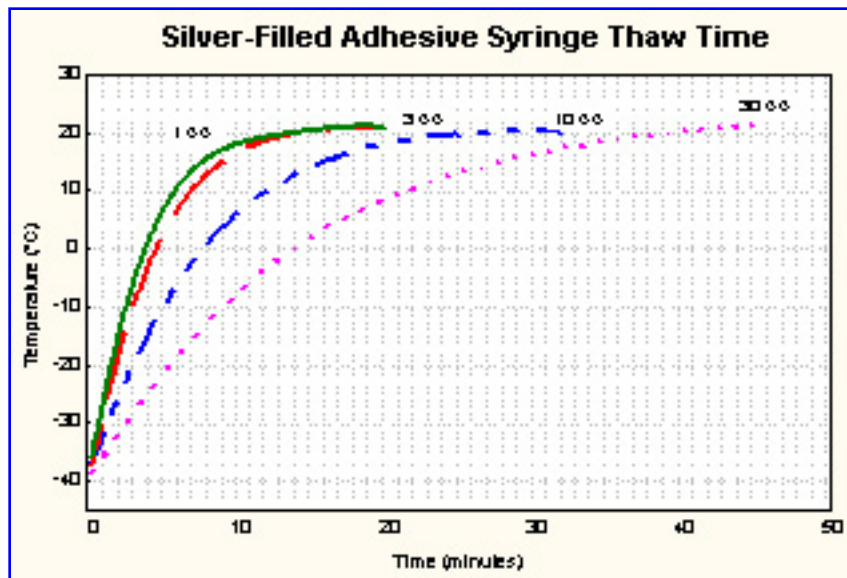
Contact your Ablestik Technical Service Department for detailed recommendation on adhesive application, including dispensing.

CURE

This adhesive can be cured in box or in-line ovens. The recommended box oven cure temperature for this adhesive is 1 hour @ 150°C. The oven should be pre-heated to this temperature before introducing the parts.

AVAILABILITY

ABLEBOND® adhesives are packaged in syringes or jars per customer specification. Available package sizes range from 1cc to 30cc and 1 ounce to 1 pound. For details, refer to the Ablestik Standard Package Data Set or contact your Customer Service Representative.



CAUTION: This product may cause skin irritation in sensitive persons. Avoid skin contact. If contact does occur, wash area immediately with soap and water. Please refer to the Material Safety Data Sheet for more details.



20021 Susana Road, Rancho Dominguez, CA 90221
(310) 764-4600 Fax (310) 764-2545 Customer Service Fax (310) 764-1783

For a technical contact nearest you, visit

www.ablestik.com

The information given and the recommendations made herein are believed to be accurate but no guarantee of their accuracy is made. In every case we recommend that purchasers before using any product conduct their own tests to determine whether the product is suitable for their particular purposes under their own operating conditions. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without the authority from the owner of this patent. These materials are not designed or manufactured for implantation in the human body. Approval from FDA for such use as part of any product to be implanted in the human body has NOT been sought nor received. We also expect purchasers to use our products in accordance with the guiding principles of the American Chemistry Council's Responsible Care® program.