

## Kondux™ 7050A/B



### 2 PART ELECTRICALLY & THERMALLY CONDUCTIVE ADHESIVE

Kondux™ 7050A/B is a two-part silver filled epoxy system that provides a low mixed viscosity and excellent electrical and thermal conductivity. The system cures at room temperature or with heat to form strong, resilient adhesive bonds. The cured Kondux 7050 provides excellent adhesion as well as impact and thermal shock resistance. It is also heat resistance up to at least 100°C and has very good resistance to moisture, solvents, and many chemicals. The Kondux™ 7050A/B system provides a long pot life and demonstrates excellent adhesion to most materials including metals, composites including FR-4 and G-10, glass, and many rigid plastics.

#### SUGGESTED APPLICATIONS

- Multipurpose electrically & thermally conductive adhesive
- Excellent for low temperature solder replacement

<b>HANDLING PROPERTIES</b>	<u>VALUE</u>	<u>TEST METHOD</u>
<u>Kondux 7050A (resin)</u>		
Visual Appearance	Smooth flowing silver paste	Visual
Density, Part A	3.07 g/cm <sup>3</sup>	ASTM E-201
Particle size	< 45 microns	
Flash Point	>100°C	ASTM D-92
<u>Kondux 7050B (hardener)</u>		
Visual Appearance	Amber Liquid	Visual
Density,	0.95 g/cm <sup>3</sup>	ASTM E-201
Flash Point	>100°C	ASTM D-92
Mix Ratio (part by weight)	100A:10B	Calculated
Mix Ratio (part by volume)	100A:33B	Calculated
Viscosity, Mixed, at 25°C	30,000 cps	ASTM D-2393
Thixotropic Index	3.3	
Pot life at 25°C, 100 gram mass	4 hours	
Time to handling strength at 25°C	24 - 48 hours	
Cure Schedule: 72 hours at room temperature (25°C). May alternatively be heat cured for 3 hours at 80°C or 1 hour at 95°C or 15 minutes at 150°C.		

<b>PHYSICAL PROPERTIES</b> (Tested at 25°C unless otherwise noted)		<u>TEST METHOD</u>
Appearance	Silver - gray	Visual
Hardness, Shore D	41D	ASTM D-2240
Lap Shear Strength	1340 psi	ASTM D-1002
Die Shear Strength	> 3400 psi	
Glass Transition Temperature (T <sub>g</sub> )	> 40°C	ASTM E-1640

# Product Datasheet

Coefficient of Thermal Conductivity		
Alpha 1 (below Tg)	50 ppm /°C	
Alpha 2 (above Tg)	89 ppm /°C	
Thermal Conductivity	2.0 W/mK	ASTM D-2214
Insulation Resistance (ohms)	>1.0 x 10 <sup>15</sup>	ASTM D-150
Volume Resistivity (ohm-cm) @ 25°C		ASTM D-150
cured 72 hours at 25°C	≤0.009 ohm-cm	
cured 3 hours at 80°C	≤0.0005 ohm-cm	
cured 1 hours at 150°C	≤0.0005 ohm-cm	
Thermal Degradation Temperature:	> 340°C	

## PROCESSING AND APPLICATION INSTRUCTIONS

To use, first re-mixed the part A thoroughly as it may have settled or partially separated during shipment and storage. This is normal for epoxy resins filled with dense fillers such as silver and the resin must be thoroughly re-homogenized prior to use. When the part a is ready, weigh (or proportion by volume) Part A and Part B in the indicated ratio into a clean mixing container. Mixing containers should preferably be made of polypropylene, polyethylene, glass, or non-corroding metal. (Stainless steel, aluminum, etc.) Always use weighing equipment having accuracy that is ±1% or less of the smallest quantity that you will be weighing. Blend Part A & B thoroughly by using a spatula or stirring stick for at least 2-3 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture. Vacuum de-gassing after mixing is desirable to achieve the best electrical and physical properties. Apply to clean, dry surfaces.

## PACKAGING AVAILABLE

This product is available in a wide range of kits in sizes such as 22 grams, 55 grams, 132 grams and 500 grams. In addition, pre-mixed and frozen syringes are available in a wide variety of sizes (1ml, 3ml, 5ml, 10ml, 20ml and 30ml) in both manual and air operated syringe types.

Please call use with any special packaging requests, or for information on custom kitting.

## STORAGE GUIDELINES

Store these materials in a clean, cool and dry environment in their tightly closed original containers. Protect from extended exposure to temperatures below 10°C (50°F). Crystallization may occur if the material is exposed to cold for extend periods. If this occurs, heat the entire container for 4 hours at 60°C to re-liquefy the material. Allow to cool to ambient temperature prior to using. Also protect from exposure to moisture or high humidity. Tightly re-seal containers after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 12 months from the date of shipment.

## HANDLING PRECAUTIONS

# Product Datasheet



Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

## PERSONAL HYGIENE

**Kondux™ 7050A WARNING!** May cause eye & skin irritation. Prolonged or repeated skin contact or inhalation of vapors may cause allergic skin or respiratory reactions. Harmful if inhaled or swallowed. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

**Kondux™ 7050B WARNING!** May cause eye & skin irritation. Prolonged or repeated skin contact or inhalation of vapors may cause allergic skin or respiratory reactions. Harmful if inhaled or swallowed. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

## FIRST AID

In case of contact:

**Skin** – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather.

**Eyes** – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention.

**Inhalation** - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

**Ingestion** - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

## DISCLAIMER

**IMPORTANT:** The following supersedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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