

## EpoPro<sup>®</sup> 8765A/B



### 2 COMPONENT, HIGH PURITY, LOW SHRINKAGE EPOXY ENCAPSULANT

EpoPro<sup>®</sup> 8765A/B is 2-part, high performance epoxy encapsulant. It features high ionic purity, extremely low shrinkage and low coefficient of thermal expansion and excellent thermal and environmental resistance. In addition, the cured polymer meets UL 94VO flame retardance standards at 6mm and provides good thermal conductivity.

The EpoPro<sup>®</sup> 8765 system can be widely used where a high performance, low shrinkage or low CTE system is required. It has been designed not to transfer stress to embedded components. It is commonly used for encapsulating IGBTs and other power semi-conductors, will not damage embedded wire bonds and lead-wires. It can be used to coat and seal over a silicone buffer coats or in some cases can even be used for directly encapsulating bare dies. It can also be used to bond dies to various substrates.

#### SUGGESTED APPLICATIONS:

- Encapsulating IGBT and other Power Semi-conductors
- Encapsulating stress sensitive components
- Encapsulating applications where low CTE and low shrinkage are required

HANDLING PROPERTIES	VALUE	TEST METHOD
<u>EpoPro 8765A</u>		
Visual Appearance	Black thick liquid	
Density	1.73 g/cm <sup>3</sup>	ASTM E-201
Viscosity, Part A, at 25°C	180,000	ASTM D-2393
Viscosity, Part A, at 60°C	6,000	ASTM D-2393
Flash Point	>100°C	ASTM D-92
<u>EpoPro 8765B</u>		
Visual Appearance	Tan liquid	
Density	1.69 g/cm <sup>3</sup>	ASTM E-201
Viscosity, Part B, at 25°C	51,000 cP	ASTM D-2393
Viscosity, Part B, at 60°C	12,500 cP	ASTM D-2393
Flash Point	>100°C	ASTM D-92
<u>Mixed Properties</u>		
Mix Ratio (part by weight)	100A: 100B	
Mixed Viscosity	25°C: 65,000 cP / 80°C: 3,500 cP / 100°C: 1500 cP	
Shelf-life	at least 12 months @ room temperature (~ 25°C)	
Pot life (10 grams):	25°C: > 8 hours / 120°C: 11 minutes	
Cure Schedules:	2 hours @ 80°C + 6 hours 140°C or 3 hours @ 100°C+ 3 hours @ 170°C*	
*Note: many other cure schedules are possible. Please contact us for assistance if you would like to consider an alternate cure schedule.		

## PHYSICAL & ELECTRICAL PROPERTIES (Tested at 25°C unless otherwise noted)

		<u>TEST METHOD</u>
Appearance	Black solid	Visual
Hardness, Shore D At 25°C	92D	ASTM D-2240
Tensile Strength	6,000 psi	ASTM D-638
Tensile Elongation	0.4%	ASTM D-638
Modulus of Elasticity	1.8 million psi	ASTM D-638
Glass transition Temp. (T <sub>g</sub> )	170°C	
Coefficient of Thermal Exp. (CTE)	20 ppm/°C	
Moisture absorption (2 hour in boiling water - % weight gain)	0.09%	ASTM D-570
Thermal Conductivity	0.72 W/mK	ASTM D-2214
Thermal Rating	-55°C to 180°C	EIC 216
Flammability	V-O (self-extinguishing) at 6mm	UL 94
Dielectric Strength	480 V/mil	ASTM D-149
Dielectric Constant @ 60 Hz	3.7	ASTM D-150
Dissipation Factor @ 60 Hz	0.003	ASTM D-150
Volume Resistivity	6 x 10 <sup>16</sup> ohm-cm	ASTM D-257
Surface Resistivity	2.35 x 10 <sup>16</sup> ohm	ASTM D-
Extractable Ionic Impurities:		MIL STD 883C
Sodium	3.2 ppm	Method 5011
Chlorine	<10 ppm	
Potassium	1.4 ppm	

**NOTE :** Values are based on laboratory or average production results – not for specification purposes.

## PROCESSING AND APPLICATION INSTRUCTIONS :

Weigh Part A and Part B in the recommended ratio as accurately as possible into a clean mixing container. Always use weighing equipment having accuracy in proportion to the amounts being weighted. Blend by using a spatula or stirring stick for 2 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture. For best results vacuum degas prior to encapsulating. For best flow and wetting heat the EpoPro 8765 to 60°C to 80°C or apply to parts that have been warmed to those temperatures.

## PACKAGING AVAILABLE:

This product is available in quart & gallon kits or pre-mixed and frozen in syringes.,

## STORAGE GUIDELINES:

Store the EpoPro 8765A &B in a clean, cool, and dry environment in its tightly closed original containers. Protect from extended exposure to temperatures below 15°C (59°F) to prevent crystallization. If crystallization occurs, heat the entire container 4 hours at 60°C to re-liquefy the material. Also protect from exposure to extended 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:**

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:**

### **EpoPro 8765A**

**CAUTION!** 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.

### **EpoPro 8765B**

**WARNING!** Causes skin and eye irritation. May cause allergic skin and respiratory reactions. Harmful if inhaled or swallowed. Do NOT get in eyes, on skin, or clothing. Wear chemical splash goggles and impervious gloves when handling. Wash skin and clothing thoroughly after handling. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep containers closed when not in use. 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 supercedes 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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