

EpoPro[®] 248A/B

2 PART, EPOXY CONFORMAL COATING CONFORMING TO MIL-I-46058 TYPE ER

EpoPro[®] 248A/B is 2-part epoxy coating designed for environmental protection of printed circuit boards. The cured coating displays excellent moisture resistance and flexibility and provides good impact and shock resistance to embedded components. The convenient mix ratio and long work-life of this system make it easy to use in most applications.

The EpoPro[®] 248A/B system is available in a standard clear to amber color or in black, blue, or fluorescent red versions. It can also be supplied with a fluorescent dye added that is invisible under normal light, but fluoresces blue-white under black light. Accessory products such as thinner and strippers are also available.

SUGGESTED APPLICATIONS:

- Flexible and impact resistant
- 100% solids / low outgassing
- Long pot life.

HANDLING PROPERTIES	VALUE	TEST METHOD
<u>EpoPro 248A</u>		
Visual Appearance	Clear, light yellow	
Density	1.12 g/cm ³	ASTM E-201
Viscosity, Part A, @ 25°C	12,000 cps	ASTM D-2393
Flash Point	>100°C	ASTM D-92
<u>EpoPro 248B</u>		
Visual Appearance	Amber	
Density	0.94 g/cm ³	ASTM E-201
Viscosity, Part A, @ 25°C	4500 cps	ASTM D-2393
Flash Point	>100°C	ASTM D-92

Mix Ratio (part by weight)	100A:50B (100A:60B by volume)
Shelf-life	at least 12 months @ 25°C from date of shipment
Pot life (100 grams) @ 25°C	3 hours
Pot life (20 grams) @ 65°C	20 minutes
Tack Free time @ 25°C / @ 65°C	4 hours / 1 hour
Cure Schedules:	24 - 48 hours @ 25°C or 4 hours at 65°C*
*Note: many other cure schedules are possible. Please contact us for assistance if you'd like to evaluate an alternate cure schedule.	

PHYSICAL PROPERTIES (Tested at 25C unless otherwise noted – cured 2 hours @ 150C)		
		<u>TEST METHOD</u>
Appearance	Clear, light yellow to amber color	Visual
Hardness, Shore D At 25°C	85D	ASTM D-2240
Tensile Strength	5,200 psi	ASTM D-638
Tensile Elongation	11.0%	ASTM D-638
Tensile Modulus	320,000 psi	ASTM D-638
Flexural Strength	11,750 psi	ASTM D-790
Compressive Strength	8,000 psi	ASTM D-695
Compressive Modulus	26,000 psi	ASTM D-695
Glass Transition Temperature (Tg)	34°C	ASTM D-648
Coefficient of Thermal Expansion (CTE):		ASTM E-831
below Tg / above Tg (ppm/°C)	114 / 240	
Moisture absorption (24 hour immersion - % weight gain)	0.2%	ASTM D-570
Thermal Conductivity	0.18 W/mK	ASTM D-2214
Thermal Rating	-40°C to 125°C	EIC 216
Fungus Resistance	Non-Nutrient	Mil-I-46058C
Volume Resistivity (ohm-cm)		ASTM D-257
@ 25°C	1.0 x 10 ¹⁵	
Dielectric Strength (V/mil)	>1,500	Mil-I-46058C
Dielectric Constant @ 25C		ASTM D-150
@ 1 KHz / 1 MHz	4.0 / 3.5	
Insulation Resistance (ohm)		ASTM D-257
@25C, dry	4.3 x 10 ¹⁴	
@25C, 98% Rel. Humidity	1.0 x 10 ¹²	
@70C, dry	8.2 x 10 ¹¹	

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

PROCESSING AND APPLICATION INSTRUCTIONS :

Mix 248 parts A & B thoroughly for 1-2 minutes and then let stand for 20 – 30 minutes prior to use to allow the components to establish a stable solution prior to use. This will assure optimal flow and improve the final coating characteristics.

If possible ensure that the circuit boards are clean and moisture free. Drying the boards by pre-heating them for 2-4 hours at 50-60C is often helpful. The coating can be applied the boards as soon as they are removed from the oven and the warmth of the boards will help to achieve excellent wetting and adhesion. The coating can also be applied to room temperature boards. Application by brush, dip coating, or spraying is possible.

For dip coating the rate of board insertion and withdrawal will have a major impact on the thickness of the coating layer. A speed of approximately 4 inches per minutes will result in about a 5 mil thick coating. Using a solvent thinner will allow thinner coating thicknesses at the same insertion speed.

For spraying, use a high pressure sprayer or use a solvent thinner such as Ultralane thinner to achieve a lower viscosity for ease of spraying. Start with 20 parts by weight thinner per 100 parts of the mixed coating and add more or less thinner as needed to achieve the desired coating thickness and ease of application. For assistance in selecting a thinner or suggestion on levels of thinner please contact SP&S to discuss the details of your application.

PACKAGING AVIALABLE:

This product is available in a wide range of package sizes including quarts, gallons, 5-gallons pails, and 55-gallon drums.

STORAGE GUIDELINES:

Store the EpoPro 248A&B in a clean, cool and dry environment in its tightly closed original containers. If crystallization occurs, heat the entire container for 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 248A

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 248B

WARNING! May cause eye & skin irritation or damage. 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.

Product Datasheet



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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