

EpoPro 8773A/B

Tough, Flame Retardant Epoxy Encapsulating System

EpoPro[®] 8773A/B a heat-curing epoxy system designed for potting and encapsulation of high-voltage, stress-sensitive electrical and electronic components requiring flame retardancy. It is mineral filled, semi-flexible epoxy encapsulating system that provides excellent impact and thermal shock resistance and can be used at up to 155°C. The EpoPro 8773 system provide excellent impregnation of wound coils and protects pressure-sensitive and fragile components from mechanical impact, vibration, and pressure due to differences in thermal coefficients of expansion. EpoPro 8773A/B conforms to A-A-59877 type 2 and it can be supplied in a pre-mixed an frozen version that complies with A-A-59877 type 1.

TYPICAL APPLICATIONS

- Pressure-Sensitive components, modules, & sensors
- Relays, voltage regulators, ferrites, transformers, & resistors,
- Sealing/bonding lids and covers

HANDLING PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
<u>EpoPro 8773A</u>		
Appearance	Black Liquid	
Density, g/cm ³	1.66	ASTM E-201
Viscosity @ 25°C, cps	30,000	ASTM D-2393
<u>EpoPro 8773B</u>		
Appearance	Cream colored Liquid	
Density, g/cm ³	1.22	ASTM E-201
Viscosity @ 25°C, cps	5,550	ASTM D-2393
Mix Ratio By Weight	100A:100B	Calculated
Mix Ratio By Volume	100A:135B	Calculated
Viscosity Mixed, cps		
@ 25°C / @ 60°C / @ 70°C	8,500 / 630 / 360	ASTM D-2393
Gel Time, 100g mass		ASTM D-2471
@ 25°C / @ 60°C / @ 70°C minutes	> 8 hrs / 5 hrs / 3 hrs	
Recommended Cure Schedules:	For small parts cure for 8 hours at 90°C or 3 hours at 120°C. For large parts or to obtain the lowest possible shrinkage during curing, heat to 70°C - 80°C and hold for 4 hours to allow the epoxy to gel, then complete cure by holding at 90°C for 6 hours or at 120°C for at least 2 hours.	

PHYSICAL PROPERTIES

Product Datasheet



	<u>VALUE</u>	<u>TEST METHOD</u>
Color	Black	Visual
Density, g/cm ³	1.42	ASTM E-201
Shore Hardness	75D	ASTM D-2240
Tensile Strength, psi	1,200	ASTM D-638
Tensile Elongation at break	55%	ASTM D-638
Elastic Modulus (from Tensile)	13,100 psi	ASTM D-638
Thermal Shock (-55°C to 155°C)	> 10 cycles	
Water Absorption (immersion)		ASTM D-252
After 24 hours @ 23°C	0.21%	
After 30 min @ 100°C	0.42%	
Glass Transition Temp. (Tg)	28°C	
Coefficient of Thermal Expansion		
Alpha 1	70 ppm/°C	
Alpha 2	160 ppm/°C	
Thermal Conductivity	0.35 W/mK	
Flame Retardance	Self-extinguishing - complies with UL 94V0 at 6mm	
Fungus Resistance	Passes/Non-nutrient	ASTM D-1924

*Black, white, and custom colors available by request.

ELECTRICAL PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Electrolytic Corrosion	Grade A/1.2	DIN 53489
Tracking Resistance (CTI)	> 600	IEC 112
Dielectric Strength, V/mil	640	ASTM D-149
Volume Resistivity, ohm-cm		
@ 25°C / @ 100°C	1.5 x 10 ¹⁴ / 4.1 x 10 ¹¹	ASTM D-257
Dielectric Constant		
60 Hz / 1 kHz / 10 kHz	4.3 / 4.2 / 4.05	ASTM D-150
Dissipation Factor, 60 Hz	0.039	ASTM D-150

NOTE : Typical Properties determined using EpoPro 8773A/B cured for for 4 hrs @ 70°C + 6 hours @ 90°C. Values are based on laboratory or typical production results and are not for specification purposes.

SUGGESTED PROCESSING GUIDELINES:

The EpoPro 8773A&B are mineral filled liquids and because of their low viscosity the mineral filler may settle to the bottom of the container during shipping and storage. Before using, separately re-mix the Part A & part B to ensure the filler is uniformly dispersed. Remixing can be done using a spatula or stirring stick or by placing on a paint shaker for 5-10 minutes. When ready to use, weigh the part A and part B in the recommended ratios as accurately as possible into a clean mixing container. Always use weighing equipment having accuracy in proportion to the amounts being weighted – ideally the accuracy of the scale should be less than 1% of the smallest mass being weighed. Blend using a spatula or stirring stick for at least 2 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture. For bubble free parts, vacuum degas the mixture prior to use at 28 inches of mercury or greater. For best adhesion apply to clean, dry surfaces.

EpoPro 8773A/B can be applied by pouring, brushing, injection, or by spraying or dipping components into the mixture. It is also suitable for meter-mix dispensing and can be supplied in premixed and frozen syringes for small volume applications. For molding or casting applications, the material can be heated to 60°C – 70°C and dispensed at that temperature into molds that are pre-heated to 80°C - 90°C.

STORAGE GUIDELINES:

Store this material in a clean, cool and dry environment in its tightly closed original container. Products may settle during storage and should be thoroughly re-mixed prior to use. Avoid extended exposure to high humidity. Tightly re-seal 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 8773A - CAUTION! May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. 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 8773B - WARNING! May 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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