



## Black Flexible Epoxy, Encapsulating & Potting Compound

832FX is a black, 2-part, flexible epoxy that offers extreme environmental, mechanical and physical protection for printed circuit boards and electronic assemblies.

This product is designed for applications where minimizing the physical stress on components is critical. It performs well in low temperature and arctic environments, as well as applications that involve temperature cycling or rapid temperature changes. It provides the functionality of silicone, but with the durability and cost-effectiveness of epoxy.

### **Features & Benefits**

Very low mixed viscosity of 700 cP

Good adhesion to a wide variety of substrates, including metals, composites, glass, ceramics, and many plastics

Excellent electrical insulating characteristics

Extreme resistance to water and humidity (allows for submersion where needed)

Solvent-free

### **Cure Instructions**

Allow to cure at room temperature for 48 hours, or cure in an oven at one of these time/temperature options:

Temperature	45 °C	65 °C	3° 08	100 °C
Time	5 h	2 h	1 h	30 min



#### **Available Packaging**

Part #	Packaging	Net Vol.	Net Wt.
832FX-450ML	2 Bottle kit	450 mL	475 g
832FX-1.7L	2 Can kit	1.7 L	1.79 kg
832FX-7.4L	2 Pail kit	7.4 L	7.82 kg
832FX-40L	2 Pail kit	40 L	42.2 kg

#### **Storage and Handling**

Store between 16 and 27  $^\circ C$  in a dry area, away from sunlight (see SDS).





# **Liquid Properties**

Chemistry	Ероху	_
Density	1.1 g/mL (Mixed) 1.1 g/mL (A) 1.0 g/mL (B)	ASTM D1475
Viscosity @ 25 °C	700 cP (Mixed) 800 cP (A) 170 cP (B)	Brookfield Engineering labs Inc. IPCTM-65- Method 2.4.24.4
Mix Ratio	1:1 (Volume) 1.22:1 (Weight)	_
Working Time <sup>a</sup>	2.5 h	_
Shrinkage	2.6%	Calculated
Shelf Life	5 у	_

<sup>a</sup> Based on 100 g sample. Varies by volume and geometry.

## **Cured Properties**

Flame Retardancy	No	_
Color	Black	_
Density	1.1 g/mL	Hydrostatic Weighing
Service Temperature Range	-40–140 °C	_
Intermittent Temperature	-50–150 °C	_
Thermal Conductivity @ 25 °C Specfic Heat Capacity @ 25 °C Thermal Diffusivity @ 25 °C	0.3 W/(m·K) 2.7 J/(g·K) 0.1 mm²/s	ASTM E1461
Glass Transition Temperature (Tg)	8.8 °C	ASTM E1545
Coefficient of Thermal Expansion (CTE)	114 ppm/°C (Prior Tg) 218 ppm/°C (After $T_g)$	ASTM E831
Hardness	88 A	ASTM D2240
Tensile Strength	9.6 N/mm <sup>2</sup>	ASTM D638





## **Cured Properties Continued**

Lap Shear	2.5 N/mm <sup>2</sup> (Stainless Steel) 3.4 N/mm <sup>2</sup> (Aluminum) 1.5 N/mm <sup>2</sup> (ABS) 2.4 N/mm <sup>2</sup> (PC)	ASTM D1002
Resistivity	5.8 x 10 <sup>12</sup> Ω·cm	ASTM D257
Breakdown Voltage @ 3.175 mm Dielectric Strength @ 3.175 mm	40 900 V 330 V/mil	ASTM D149
Dielectric Constant @ 1 MHz Dissipation Factor @ 1 MHz	3.1 0.05	ASTM D150
Chemical Absorption Weight Gain, 30 days @ 25 °C	30 % (IPA) 9 % (Sulphuric Acid 3%) 17 % (Acetic Acid) 04 % (10% NaOH) 0.2 % (10% NaCl) 0.4 % (Water) 0.1 % (Transmission Oil) 0.1 % (Transformer Oil)	_





## **Application Instructions**

Read the product SDS and Application Guide for more detailed instructions before using this product.

## **Recommended Preparation**

Clean the substrate with 824 99.9% Isopropyl Alcohol, so the surface is free of oils, dust, and other residues.

## Mixing

- 1. Scrape settled material free from the bottom and sides of the part A container; stir the contents until homognous. Use a paint shaker if available.
- **2.** Measure 1 parts by volume of the part A and pour into the mixing container. Ensure all contents are transferred by scraping the container.
- **3.** Measure 1 part by volume of the part B and pour into the mixing container. Ensure all contents are transferred by scraping the container.
- **4.** Thoroughly and gently mix parts A and B together. Avoid introducing air bubbles.
- **5.** To de-air, let sit for 15 minutes or put in a vacuum chamber at 25 inHg for 2 minutes.
- **6.** If bubbles are present at the top, break them gently with the mixing paddle.
- **7.** Pour the mixture into a container holding the components to be protected.
- 8. Close the part A and B containers tightly between uses to prevent skinning.

Mixing >500 g at a time decreases working time and can lead to a flash cure. Limit the size of hand-mixed batches. For large production volumes, contact MG Chemicals Technical Support for assistance.

**Disclaimer:** This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.