

# 834B



## Black Flame Retardant Epoxy, Encapsulating & Potting Compound

834B is a black, rigid, flame-retardant thermal potting compound that offers extreme environmental, mechanical and physical protection for printed circuit boards and electronic assemblies.

This 2-part epoxy is designed for applications where thermal management and self-extinguishing are critical. It also provides excellent electrical insulation and protects components from static discharge, vibration, abrasion, thermal shock, environmental humidity, salt water, fungus, and many harsh chemicals.

### Features & Benefits

- Flame-retardant—meets UL 94V-0
- Convenient 2A:1B volume mix ratio
- Low exotherm
- Very high compressive and tensile strength
- Excellent adhesion to a wide variety of substrates including metals, composites, glass, ceramics, and many plastics
- Excellent electrical insulating characteristics
- Non-halogenated flame-retardant fillers
- Solvent-free

### Available Packaging

| Cat. No.   | Packaging  | Net Vol. | Net Wt. |
|------------|------------|----------|---------|
| 834B-2.7L  | 3 Can kit  | 2.7 L    | 4.30 kg |
| 834B-10.8L | 3 Can kit  | 10.8 L   | 17.2 kg |
| 834B-60L   | 3 Pail kit | 60 L     | 95.6 kg |

### Contact Information

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### Cured Properties

|  |   |
|--|---|
| Resistivity                            | $2.1 \times 10^{12} \Omega \cdot \text{cm}$ |
| Breakdown Voltage                      | 40 700 V                                    |
| Dielectric Strength                    | 430 V/mil                                   |
| Dissipation Factor @ 1 MHz             | 0.01  |
| Dielectric Constant @ 1 MHz            | 3.1   |
| Hardness                               | 85 D  |
| Tensile Strength                       | 17 N/mm <sup>2</sup>                        |
| Compressive Strength                   | 74 N/mm <sup>2</sup>                        |
| Lap Shear (stainless steel)            | 8.2 N/mm <sup>2</sup>                       |
| (aluminum)                             | 11 N/mm <sup>2</sup>                        |
| Glass Transition Temperature ( $T_g$ ) | 56 °C                                       |
| CTE Prior $T_g$                        | 74 ppm/°C                                   |
| CTE After $T_g$                        | 107 ppm/°C                                  |
| Thermal Conductivity @ 25 °C           | 0.8 W/(m·K)                                 |
| Service Temperature Range              | -40–175 °C                                  |
| Intermittent Temperature               | -50–200 °C                                  |

### Usage Parameters

|                     |       |
|---------------------|-------|
| Working Time        | 1 h   |
| Mix Ratio by Volume | 2:1   |
| Mix Ratio by Weight | 2.4:1 |

### Uncured Properties

|                   |                 |
|-------------------|-----------------|
| Mixed Density     | 1.6 g/mL        |
| Density           | (A) 1.7 g/mL    |
|                   | (B) 1.4 g/mL    |
| Viscosity @ 25 °C | (A) 28 Pa·s     |
|                   | (B) 2.1 Pa·s    |
|                   | (Mixed) 16 Pa·s |

# 834B



## Application Instructions

Read the product SDS and Application Guide for more detailed instructions before using this product (downloadable at [www.mgchemicals.com](http://www.mgchemicals.com)).

## Recommended Preparation

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

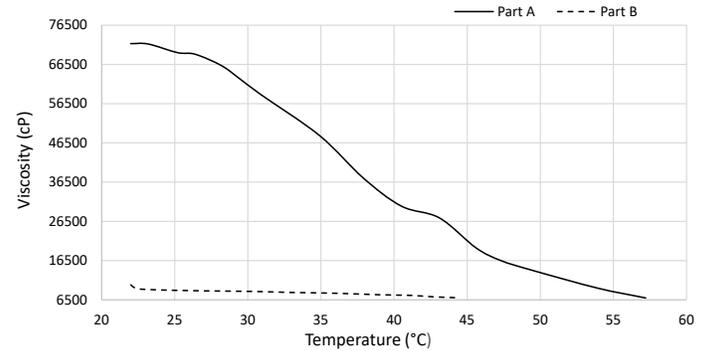
## Mixing

1. Scrape settled material free from the bottom and sides of the part A and B container; stir the contents until homogenous. Use a paint shaker if available.
2. Measure 2 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.

If crystallization/solidification occurs, reconstitute the product by warming to between 55 and 65 °C until it becomes fully re-liquified. Let the material cool to room temperature before mixing, to prevent flash cure.

Mixing >1 kg 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.

## Viscosity vs. Temperature



## Cure Instructions

Allow to cure at room temperature for 72 hours, or cure in an oven at one of these time/temperature options:

|                    |       |       |        |
|--------------------|-------|-------|--------|
| <b>Temperature</b> | 65 °C | 80 °C | 100 °C |
| <b>Time</b>        | 2.5 h | 1 h   | 20 min |

## Storage and Handling

Store between 16 and 27 °C in a dry area, away from sunlight (see SDS). Storage below 16 °C can result in crystallization. This product has a 5 year shelf life.

## 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.