

# 8800



## Black Flexible Urethane

8800 is a black, 2-part, flexible polyurethane resin. It has a low mixed viscosity and maintains excellent flexibility at low temperatures. In addition, this flexible urethane adheres strongly to a wide variety of substrates, including metals, composites, glass, ceramics, and many plastics.

It is a cost-effective flexible potting option that provides exceptional physical protection and creates minimum stress on circuit boards and surface-mounted devices. It offers superior moisture resistance and is an ideal choice for harsh environments, especially saltwater exposure and marine applications.



## Features & Benefits

- 2:1 mix ratio
- Quick working time
- 24 hour cure at room temperature
- Constant service temperature of -50 to 120 °C
- Excellent dielectric properties
- Ideal underwater potting compound

## Available Packaging

| Cat. No.   | Packaging    | Net Vol. | Net Wt. |
|------------|--------------|----------|---------|
| 8800-375ML | 2 Bottle kit | 375 mL   | 418 g   |
| 8800-2.55L | 3 Can kit    | 2.55 L   | 2.84 kg |
| 8800-10.8L | 3 Can kit    | 10.8 L   | 12.0 kg |
| 8800-60L   | 3 Pail kit   | 60 L     | 67.0 kg |

## Contact Information

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## Cured Properties

|                                                |                             |
|------------------------------------------------|-----------------------------|
| Resistivity                                    | 8.4 x 10 <sup>12</sup> Ω·cm |
| Breakdown Voltage                              | 46 200 V                    |
| Dielectric Strength                            | 370 V/mil                   |
| Hardness                                       | 74 A                        |
| Tensile Strength                               | 4.5 N/mm <sup>2</sup>       |
| Lap Shear (stainless steel)                    | 4.4 N/mm <sup>2</sup>       |
| (aluminum)                                     | 3.1 N/mm <sup>2</sup>       |
| Glass Transition Temperature (T <sub>g</sub> ) | 11 °C                       |
| CTE Prior T <sub>g</sub>                       | 86 ppm/°C                   |
| CTE After T <sub>g</sub>                       | 221 ppm/°C                  |
| Thermal Conductivity @ 25 °C                   | 0.3 W/(m·K)                 |
| Service Temperature Range                      | -50–120 °C                  |
| Intermittent Temperature                       | 130 °C                      |

## Usage Parameters

|                     |        |
|---------------------|--------|
| Working Time*       | 10 min |
| Mix Ratio by Volume | 2:1    |
| Mix Ratio by Weight | 7:4    |

\*Based on 100 g sample. Varies by volume and geometry.

## Uncured Properties

|                   |              |
|-------------------|--------------|
| Mixed Density     | 1.1 g/mL     |
| Density           | (A) 1.1 g/mL |
|                   | (B) 1.2 g/mL |
| Viscosity @ 25 °C | (A) 300 cP   |
|                   | (B) 640 cP   |

## 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. (Optional) Pre-heat part A to improve surface quality.
2. Scrape settled material free from the bottom and sides of the part A container; stir the contents until homogenous.
3. Measure 2 parts by volume of the pre-stirred part A, and pour into the mixing container. Ensure all contents are transferred by scraping the container.
4. Measure 1 part by volume of the part B, and pour into the mixing container. Ensure all contents are transferred by scraping the container.
5. Thoroughly mix parts A and B together.
6. (Optional) Put in a vacuum chamber at 25 inHg.
7. Pour the mixture into a container holding the components to be protected.
8. Blanket both parts with nitrogen if the material is not used up to prevent moisture.
9. Close the part A and B containers tightly between uses.

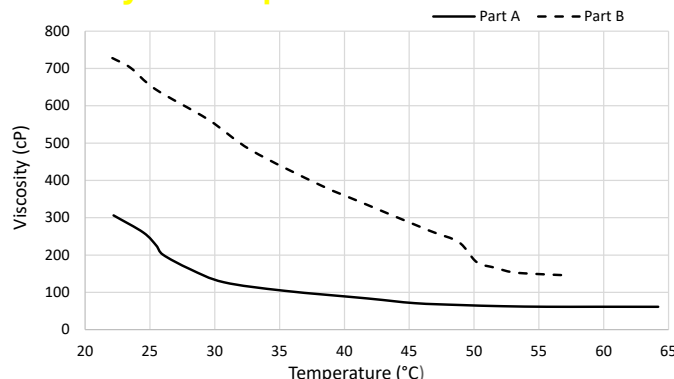
Mixing >500 g at a time decreases working time and can lead to a flash cure. Limit the size of hand-mixed batches. For large production volumes, contact MG Chemicals Technical Support for assistance.

## Water Absorption

Approximate sample size: 12.8 mm width, 12.5 mm thickness, and 4.8 g. Cured 1 hour @ 65 °C.

|                       | 1 Week | 2 Weeks | 4 Weeks |
|-----------------------|--------|---------|---------|
| <b>Water</b>          | 0.02%  | 0.2%    | 0.6%    |
| <b>Salt Water 10%</b> | 0.08%  | 0.3%    | 0.8%    |

## Viscosity vs. Temperature



## Cure Instructions

Allow to cure at room temperature for 24 hours, or cure in an oven at one of these time/temperature options:

|                    |        |        |
|--------------------|--------|--------|
| <b>Temperature</b> | 65 °C  | 80 °C  |
| <b>Time</b>        | 30 min | 25 min |

Moisture contamination with polyurethanes can create large bubbles on the surface and a lumpy appearance. For consistent curing results, ensure that the resin (part A) is dry before use and the mixture is kept dry during cure. If moisture contamination of part A is suspected, follow the steps below:

1. Pre-heat part A at 65 °C for 2 hours. Mix the heated resin with the appropriate amount of hardener (do not allow the resin to cool as this may create condensation that wets the resin).
2. Mix the 2 components together and cure in an enclosure that has a constant stream of nitrogen gas flowing through to keep the environment dry.

## Storage and Handling

Store between 16 and 30 °C in a dry area, away from sunlight (see SDS). Minimize the time that the container is kept opened and purge with nitrogen before closing if the material is not used up at once. This product has a 1.5 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.