8820

High Temperature Rigid Urethane

8820 is a black, tough, high temperature, two-part polyurethane potting compound. It has a low mixed viscosity and properties similar to epoxy compounds, but with exceptional low temperature stability. As well, it adheres strongly to a wide variety of substrates, including metals, composites, glass, ceramics, and many plastics.

8820 offers exceptional physical protection, a high continuous operating temperature, and superior protection from acids, bases, and many organic solvents.



Features & Benefits

- 2:1 mix ratio
- 15 minute working time
- 48 hour cure at room temperature
- Constant service temperature of -50 to 150 °C
- Low exotherm
- Excellent dielectric properties

Available Packaging

Cat. No.	Packaging	Net Vol.	Net Wt.
8820-375ML	2 Bottle kit	375 mL	440 g
8820-2.55L	3 Can kit	2.55 L	3 kg
8820-10.8L	3 Can kit	10.8 L	12.7 kg
8820-60L	3 Pail kit	60 L	70.6 kg

Contact Information

MG Chemicals, 1210 Corporate Drive
Burlington, Ontario, Canada L7L 5R6

Email: support@mgchemicals.com

Phone: North America: +(1)800-340-0772
International: +(1) 905-331-1396
Europe: +(44)1663 362888

Cured Properties

Resistivity		1.4 x 10^{13}	Ω·cm
Breakdown Voltage		47 300	V
Dielectric Strength		380	V/mil
Hardness		73	D
Tensile Strength		38	N/mm^2
Compressive Strength		295	N/mm^2
Lap Shear (stainless steel)		13	N/mm^2
(aluminum)		12	N/mm^2
Glass Transition Temperature	(T_g)	44	˚C
CTE Prior T_g		94	ppm/˚C
CTE After T_g		195	ppm/˚C
Thermal Conductivity @ 25 ˚C		0.3	W/(m·K)
Service Temperature Range		-50 – 150	˚C
Intermittent Temperature		175	˚C

Usage Parameters

Working Time*	15	min
Mix Ratio by Volume	2:1	
Mix Ratio by Weight	1.85:1	

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

Uncured Properties

Mixed Density		1.2	g/mL
Density	(A)	1.2	g/mL
	(B)	1.2	g/mL
Viscosity @ 25 ˚C	(A)	10 700	cP
	(B)	250	cP
	(Mixed)	3816	cP

8820

Application Instructions

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

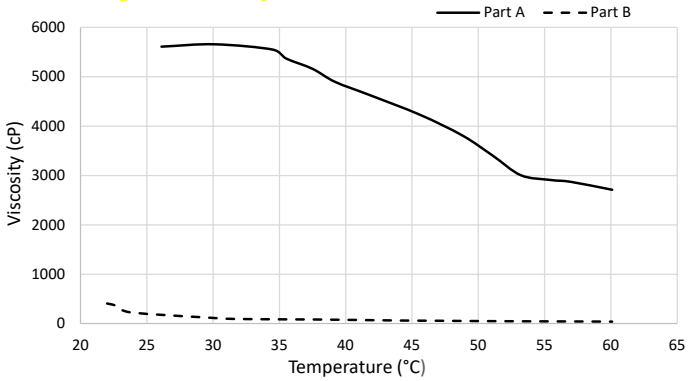
Mixing >500 g at a time decreases working time and can lead to a flash cure. Limit the size of hand-mixed batches. For large production volumes, contact MG Chemicals Technical Support for assistance.

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
Water	0.1%	0.4%	0.7%
Salt Water 10%	0.05%	0.2%	0.5%

Viscosity vs. Temperature



Cure Instructions

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

Temperature	65 °C	80 °C
Time	2 hours	1.5 hours

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.