EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

TECHNICAL BULLETIN

POLYURETHANE POTTING & ENCAPSULATING RESINS

THE GREEN SERIES
20-2101 Enterable Gel
20-2160 Shore A 60
20-2180 Shore A 80

DESCRIPTION:

This series of polyurethane systems is engineered for electronic potting, encapsulating, and casting applications. They are low in viscosity, low in toxicity and available in the popular TriggerBond® dual barrel cartridge dispensing system. These elastomeric systems are suitable for a variety of electronic insulating applications. The durometers range from an enterable gel to Shore A 80.

GREEN:

The base Natural Oil Polyol (NOP) used in these systems is obtained directly from a plant source without chemical modifications. Using renewable resources, such as NOP's, will reduce the demand on non-renewable fossil fuels and reduce the overall production of carbon dioxide.

FEATURES:	BENEFITS:
• Green	Reduce demand on non-renewable fossil fuels
• Low Viscosity	Quick self leveling around components
• Available in TriggerBond®	Easy to use packaging
• Low Durometer	Low stress on components & vibration resistant
• Moisture Resistant	Can be used in wet environments
• Convenient Mix Ratios	Easy to process by hand or with meter mix
• Low Shrinkage & Exotherm	Less stress to components during cure

TYPICAL PROPERTIES:

	20-2101	20-2160	20-2180
Color	Clear	Black	Black
Hardness, Shore A	Gel	60	80
Viscosity, 25°C, cps			
Polyol Resin	1,500	1,500	2,200
Isocyanate	2,000	5,500	1,500
Mixed	1,600	2,500	1,700
Specific gravity @ 25°C Resin			
Polyol Resin	0.97	1.03	0.97
Isocyanate	1.15	1.13	1.15
Mix ratio (Iso:Polyol)			
By Volume	1:4	1:2	1:2
By Weight	25:100	55:100	60:100
Gel time, 25°C, Minutes	20	20	20

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TYPICAL PROPERTIES (continued):

	20-2101	20-2160	20-2180
Elongation	na	150	220
Tensile strength, psi	na	375	1700
Tear strength, pli	na	40	80
Coefficient of thermal expansion,°C	2.00×10^{-4}	2.00×10^{-4}	2.10×10^{-4}
Thermal conductivity, W/m- °K	.3	.3	.3
Operating temperature range,°C	-30 to +125	-30 to +125	-30 to +125
Dielectric strength, V/mil	625	625	650
Volume resistivity, ohm-cm	7.2×10^{14}	7.2×10^{14}	7.2×10^{14}
Surface resistivity, 25°C, ohm	$>1.0 \times 10^{15}$	$>1.0 \times 10^{15}$	$>1.0 \times 10^{15}$
Dielectric constant @1 KHz	4.0	3.6	3.4
Dissipation factor @ 1 KHz	.017	.017	.017

Note: When cured at room temperature full hardness and final properties are achieved in 7-10 days.

* **20-2183** is a faster gelling version of 20-2180. Able to demold in 1 hour.

INSTRUCTIONS FOR USE:

1. By weight, thoroughly mix according to mix ratio provided in the above table. Two components should be carefully weighed in metal, plastic or glass containers. Avoid using paper cups and wooden stirrers. Weighing & mixing is not necessary when using TriggerBond® cartridges.
2. Mixed material can be degassed at 1 to 5 mm Hg to ensure bubble free castings. Containers should be large enough to allow frothing.
3. Cure according to one of the following cure schedules:
   - 25°C 24 Hours
   - 45°C 2.5 Hours
   - 65°C 1.5 Hours
   - 85°C 40 Minutes

STORAGE & HANDLING & SAFETY:

Store both components at 75-85°F in original containers. If the containers are opened and the contents partially used, the material left in the container should be blanketed with dry nitrogen before sealing. Carefully read Safety Data Sheets before using.

AVAILABILITY:

These products are available in the convenient TriggerBond® dual barrel cartridges (50ml, 200ml & 400ml), quarts, gallons, five gallon pails and 55 gallon drums.

IMPORTANT:

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