

**Technical Specifications**

Absorption	0.30% (Water, 24-hour immersion)
Acid Resistance	Withstands SF6 at 25°C
Adhesion	Will not adhere to Teflon, Kel-F, nylon nor polypropylene
Carcinogenic	Does not contain any of the carcinogens listed in the OSHA Standards of November 29, 1975
Color	Off-white
Combustion	(Gases emitted at normal temperatures) NO <sub>x</sub> , CO <sub>2</sub> , H <sub>2</sub> O, CO

Compressive Strength	10,000-psi ± 20% (at 25°C)
Corrosive Properties	Corrosive to copper when uncured; non-corrosive when cured
Cure Time	24 hours at 25°C, 2 hours at 60°C
Dielectric Strength	350 volts/mil
Dissipation Factor	0.09 (at 25°C, 1 kHz)
Expansion, Linear	30.3 x 10 <sup>-6</sup> in/in/°C (30° to 90°C)
Flash Point	175°C
Flexural Strength	11,000 psi ± 20% (at 25°C)
Fungus Resistance	Very high
Hardening Time	1 to 2 hours at 25°C, 30 minutes at 60°C
Hardness	75-80 Shore D
Outgassing	See table below for typical sample at various temperatures

<i>Temperature</i>	<i>Cumulative Pumping Time</i>	<i>Outgassing Rate</i>
°C	hrs	T-l/cm <sup>2</sup> /sec
25	1	1.0 x 10 <sup>-5</sup>
25	40	7.5 x 10 <sup>-7</sup>
116 (3 hrs)	43	7.0 x 10 <sup>-5</sup>
135 (9 hrs)	52	8.0 x 10 <sup>-6</sup>
130 (14 hrs)	66	2.0 x 10 <sup>-6</sup>

Heat of Reaction	Very slightly exothermic
Pressure Range	Suitable for use in pressures of 10 <sup>-9</sup> Torr and below
Pot Life	55 minutes (100 grams at 25°C)
Radiation	Similar epoxy resins have been tested to 1011 ergs of gamma radiation without noticeable effect. Torr Seal is a rigid epoxy resin (as opposed to other epoxies which have plasticizers added); all rigid epoxies are relatively impervious to damage from radiation (as compared to other organic materials such as silicone rubber, phenolics and polyesters)

Resistivity, Volume	3.52 x 10 <sup>14</sup> ohms/cm (at 25°C)
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**Shear Strength, Tensile** (on an aluminum lap joint)

@ 25°C, following 7 days at -45°C, 2150 psi  
 @ 25°C, following 7 days at 25°C, 2000 psi  
 @ 25°C, following 7 days at 80°C, 1900 psi  
 @ 80°C, 800 psi

100% relative humidity, long-term, 1900 psi immersed in alcohol, 0.5 hour, 1600 psi after 24-hour room temperature cure, 800 psi

Shelf Life	12 months minimum from date of shipment from Agilent
Shrinkage, Linear	0.00125 in/in (at 25°C)
Specific Gravity	1.6
Solvent	Call Technical Support (800-882-7426)
Temperature	-45°C to 120°C; Cracks at LN <sub>2</sub> temperatures
Tensile Strength	5000 psi ± 30%
Thermal Conductivity	10.4 x 10 <sup>-4</sup> cal/sec/cm <sup>2</sup> /°C/cm
Toxicity	None known in cured product
Viscosity	Thick non-flow paste

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