



# PTS-46313

Rev 3.1

## DEFINITION

**PTS-46313™** is a one-component silicone encapsulant designed for encapsulation by casting of completed circuit boards, hybrid circuits, and power supplies, where flexibility, reparability, thermal conductivity, and high temperature resistance are required. Possible applications include automotive, telecommunications, transformers, cable end sleeves, capacitors, coils, insulators/bushings, transducers, and (re-enterable) telephone cable splicers.

## PRODUCT DESCRIPTION

Appearance	Viscous liquid
Odor	Faint
Color	Black

Property	Result	Methods
Viscosity	8,000 – 10,000 mPa·s	Brookfield HBT Spindle 27, 10rpm @ 25°C

Other information	
Pot life time @ 25± 2°C	> 4 hours
Specific gravity @ 20°C (g/cm <sup>3</sup> )	1.9
Possible curing cycles	<ul style="list-style-type: none"> <li>• 30 minutes at 125°C</li> <li>• 1 hour at 100°C</li> <li>• 2 hours at 85°C</li> </ul> **Use forced air convection ovens only. Allow at least an extra 30 minutes for parts to warm up to Temperature. **
Storage Stability:	3 months < 20°C 6 months < 40°C 1 year < 80°C

## APPLICATION PROPERTIES

- **PTS-46313™** is expected to meet the flammability requirements of UL94 V-0 at a thickness of 3.4 mm or higher.
- **PTS-46313™** meets Bellcore Extractables method and specification, Paragraph 10.3, 10.3.1.1, 10.3.2, 85°C/85% RH endurance tests (no metal migration or failures after 1000 hours).

- Since **PTS-46313™** has very good adhesion to most common circuit board materials, it does not require the use of primers, buffers, conformal coatings, or silicone gels that are needed for most applications.
- **PTS-46313™** provides long-term circuit protection from about – 65°C to 150°C.

### **APPLICATION RECOMMENDATIONS**

- **PTS-46313™** can be cured using a forced air convection oven at times and temperatures ranging from 2 hours at 85°C to 30 minutes at 125°C. Allow 30 minutes extra for parts to warm up to temperature.
- **PTS-46313™** is the premixed, frozen version of **EGE-303 HK™**. It should be stored at – 40°C. To use, simply remove from the freezer and allow to warm to room temperature before dispensing to the component or device.

### **TYPICAL PROPERTIES OF CURED PTS-46313®**

The properties listed below were determined from measurements carried out in a limited number of tests. These properties are given as guidance, and do not constitute a guarantee. It will be for the user, in all cases, to carry out their own tests to determine whether **PTS-46313™** is suitable for the user's particular application.

<b>Property</b>	<b>Result</b>	<b>Methods</b>
Shrinkage on Cure	1%	
Shore A Hardness	60 ± 5	ASTM D2240
Thermal Conductivity	1.3 W/M/K	
Glass Transition Temperature	Tg 1: -64°C Tg 2: -48°C	TGA1
Weight Loss, (1 week at 150°C)	0.25%	
(Saturated) Steam Resistance, (72 hours, 15 psi steam, % weight gain)	1%	
Belcore Extractables Test	Passes	Paragraph 10.3, 10.3.1.1, 10.3.2
Coefficient of Thermal Expansion	2 x 10 <sup>-4</sup> /°C	TMA1
Volume Resistivity <ul style="list-style-type: none"> <li>• 100 V</li> <li>• 500 V</li> <li>• 1000 V</li> </ul>	2.5 x 10 <sup>15</sup> Ω-cm 1.9 x 10 <sup>15</sup> Ω-cm 1.4 x 10 <sup>15</sup> Ω-cm	ASTM D257
Dielectric Constant/Dissipation Factor <ul style="list-style-type: none"> <li>• 120 Hz</li> <li>• 1000 Hz</li> </ul>	4.7/0.0085 4.8/0.0085	ASTM D150
Dielectric Strength (1.6 mm thickness)	25 kV/mm	ASTM D149

NASA Outgassing	0.27 %TML 0.13% CVCM 0.00% WVR	ASTM 595
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### **STORAGE AND HANDLING**

- Store **PTS-46313™** at  $-40^{\circ}\text{C}$ .
- Avoid contact with other materials containing sulfur, tin, nitrogen compounds, including rubber, epoxies, polyurethanes, polysulfides, polyamides, and other silicone RTV's which may inhibit cure.

### **PRECAUTIONS IN USE**

Refer to the attached material safety data sheet.

The information contained in this data sheet corresponds to the present state of our knowledge; it is intended for your guidance but we are not bound by it since we are not in a position to exercise control over the manner in which our products are used. Moreover, the attention of the user is drawn to the risks that could possibly occur should a product be used for an application other than that for which it is intended.