

# LOCTITE STYCAST G 508-1

September 2015

## PRODUCT DESCRIPTION

LOCTITE STYCAST G 508-1 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• One component</li> <li>• Flame retardant</li> <li>• High temperature resistance</li> <li>• Heat, water and chemical resistant</li> <li>• Low coefficient of thermal expansion</li> <li>• High thermal conductivity</li> </ul>
<b>Operating Temperature</b>	-40 to +180°C
<b>Cure</b>	Heat cure
<b>Application</b>	Encapsulation

LOCTITE STYCAST G 508-1 pourable, one component, flame retardant encapsulant is recommended for use high temperature applications.

LOCTITE STYCAST G 508-1 is UL certified VO, Class H. File Number: E70278 (M).

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Density, g/cm <sup>3</sup>	1.58
Viscosity, Brookfield, 25 °C, mPa·s (cP)	27,000
Storage Life @ 25°C, days	180
Pot Life :	
@ 45°C, ± 50% viscosity reduction, days	1 to 2
@ 60°C, ± 90% viscosity reduction, hours	3 to 4

## TYPICAL CURING PERFORMANCE

### Gel Time

1 hour @ 120°C
8 minutes @ 160°C
4 minutes @ 180°C

### Cure Schedule

2 hours @ 120°C
30 minutes @ 160°C
12 minutes @ 180°C

Recommended cure schedule for minimum shrinkage during cure is 3 hours @ 120°C.

This product may generate excessive heat if cured in thicknesses greater than 10 mm at a temperature above 125°C. Dielectric strength and other evaluated temperature and electrical properties can be further improved by post-curing for 1 hour @ 180°C or 2 hours @ 150°C.

The above cure profile is a guideline recommendation. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties

Hardness, Shore D:	
@ 25°C (minimum)	85
@ 120°C	70
Thermal Conductivity, W/(m·K)	0.7
Glass Transition Temperature, °C:	
by TMA	118
by DMA	133
Coefficient of Linear Thermal Expansion:	
Below Tg, ppm/°C	36
Above Tg, ppm/°C	118
Young's modulus (E) :	
@ -40°C	N/mm <sup>2</sup> 5,152 (psi) (747,234)
@ -20°C	N/mm <sup>2</sup> 4,945 (psi) (717,211)
@ 0°C	N/mm <sup>2</sup> 4,737 (psi) (687,043)
@ 25°C	N/mm <sup>2</sup> 4,537 (psi) (689,944)
@ 50°C	N/mm <sup>2</sup> 4,309 (psi) (624,967)
@ 100°C	N/mm <sup>2</sup> 3,642 (psi) (528,227)
@ 150°C	N/mm <sup>2</sup> 75 (psi) (10,877)
@ 200°C	N/mm <sup>2</sup> 86 (psi) (12,473)

### Electrical Properties

Volume Resistivityohm-cm:	
@ 25°C	1×10 <sup>14</sup>
@ 180°C	1×10 <sup>10</sup>

## GENERAL INFORMATION

**For safe handling information on this product, consult the Safety Data Sheet, (SDS).**

## DIRECTIONS FOR USE

1. For best results when potting small electrical components, preheat device (and mold, if used) above °C before pouring the epoxy to remove moisture from the device. If lower viscosity is desired, this product may be preheated to temperatures up to 60 °C.
2. This product contains oxide filler specially selected to give high thermal conductivity and low coefficient of expansion. This filler may cause abrasion of valves or nozzles of some dispensing equipment.

**STORAGE:**

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

**Optimal Storage : 25 °C**

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

**Not for product specifications**

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$   
 $\text{kV/mm} \times 25.4 = \text{V/mil}$   
 $\text{mm} / 25.4 = \text{inches}$   
 $\text{N} \times 0.225 = \text{lb}$   
 $\text{N/mm} \times 5.71 = \text{lb/in}$   
 $\text{psi} \times 145 = \text{N/mm}^2$   
 $\text{MPa} = \text{N/mm}^2$   
 $\text{N} \cdot \text{m} \times 8.851 = \text{lb} \cdot \text{in}$   
 $\text{N} \cdot \text{m} \times 0.738 = \text{lb} \cdot \text{ft}$   
 $\text{N} \cdot \text{mm} \times 0.142 = \text{oz} \cdot \text{in}$   
 $\text{mPa} \cdot \text{s} = \text{cP}$

**Disclaimer****Note:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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