

# LOCTITE STYCAST E 1070

December 2016

**PRODUCT DESCRIPTION**

LOCTITE STYCAST E 1070 provides the following product characteristics:

|                                      |                                                                                                                                                                                                                   |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology</b>                    | Epoxy                                                                                                                                                                                                             |
| <b>Appearance</b>                    | Black liquid                                                                                                                                                                                                      |
| <b>Cure</b>                          | Heat cure                                                                                                                                                                                                         |
| <b>Product Benefits</b>              | <ul style="list-style-type: none"><li>• One component</li><li>• Low viscosity</li><li>• Excellent chemical resistance</li><li>• Excellent dielectric properties</li><li>• Unfilled</li><li>• Rapid cure</li></ul> |
| <b>Operating Temperature</b>         | -40 to 130°C                                                                                                                                                                                                      |
| <b>Application</b>                   | Encapsulant                                                                                                                                                                                                       |
| <b>Typical Assembly Applications</b> | Automotive electronic applications                                                                                                                                                                                |

LOCTITE STYCAST E 1070 epoxy encapsulant is recommended for small mass potting applications, <50 grams.

**TYPICAL PROPERTIES OF UNCURED MATERIAL**

|                                                    |       |
|----------------------------------------------------|-------|
| Viscosity, Brookfield, mPa·s (cP)                  | 3,000 |
| Density, g/cm <sup>3</sup>                         | 1.14  |
| Shelf Life @ 25°C (from date of manufacture), days | 183   |
| Flash Point - See SDS                              |       |

**TYPICAL CURING PERFORMANCE****Cure Schedule**

- 30 minutes @ 100°C
- 15 minutes @ 120°C
- 3 minutes @ 160°C

For optimum performance, follow the initial cure with a post cure of 2 to 4 hours at the highest expected use temperature.

This product generates moderate heat during cure. No adverse exotherm effects are obtained when cured at 160°C in masses up to approximately 40 grams.

The above cure profiles are guideline recommendations. 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             | 86 |
| @ 120°C            | 35 |

**Electrical Properties**

|                             |                    |
|-----------------------------|--------------------|
| Volume Resistivity, ohm-cm: |                    |
| @ 25°C                      | $4 \times 10^{14}$ |
| @ 130°C                     | $8 \times 10^{10}$ |

**TYPICAL PERFORMANCE OF CURED MATERIAL**

|                             |                        |
|-----------------------------|------------------------|
| Tensile Lap Shear Strength: |                        |
| Aluminum to Aluminum @ 25°C | N/mm <sup>2</sup> 13.8 |
|                             | (psi) (2,000)          |

**GENERAL INFORMATION**

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

**THAWING:**

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
4. DO NOT re-freeze. Once thawed to 25°C, the adhesive should not be re-frozen.

**DIRECTIONS FOR USE**

1. Complete cleaning of the components and substrates should be performed to remove contamination such as dust, moisture, salt and oils which can cause electrical failure, poor adhesion or corrosion in an embedded part.
2. Some separation of components is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use.
3. To ensure a void-free embedment, vacuum deairing or degassing should be performed to remove any entrapped air introduced during the mixing operation.
4. Pump-down or pull vacuum on the mixture to achieve an ultimate vacuum or absolute pressure of 1 to 5 torr or mm Hg. The foam will rise several times in the liquid height and then subside.
5. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
6. Pour mixture into cavity or mold.
7. Gentle warming of the mold or assembly reduces the viscosity. This improves the flow of the material into the unit having intricate shapes or tightly packed coils or components.
8. Further vacuum deairing in the mold may be required for critical applications.

**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.

**Conversions**

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

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