

# LOCTITE STYCAST ES 1002

November 2021

## PRODUCT DESCRIPTION

LOCTITE STYCAST ES 1002 provides the following product characteristics:

|                                                  |                                  |
|--------------------------------------------------|----------------------------------|
| <b>Technology</b>                                | Epoxy                            |
| Appearance, Resin (Component A)                  | Black                            |
| Appearance, Hardener (Component B)               | Tan                              |
| Appearance (cured)                               | Black                            |
| Components                                       | Two components - requires mixing |
| Mix Ratio by volume: Part A: Part B              | 1 : 1                            |
| Mixing Ratio, by weight Component A: Component B | 100 : 100                        |
| <b>Cure</b>                                      | Room Temperature or Heat Cure    |
| <b>Application</b>                               | Potting and Encapsulating        |

LOCTITE STYCAST ES 1002 is a two-component casting system with excellent handling properties. This low cost, flexible system is filled with a non-abrasive filler for machine metering/dispensing or regular hand mixer applications.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

### Part A Properties

|                                    |        |
|------------------------------------|--------|
| Viscosity, Brookfield - RVF, cP:   |        |
| Spindle 6, speed 2 rpm             | 55,000 |
| Spindle 6, speed 20 rpm            | 28,000 |
| Density, @ 25°C, g/cm <sup>3</sup> | 1.57   |
| Filler Content, %                  | 50     |
| Solids Content, %                  | 100    |

### Part B Properties

|                                    |       |
|------------------------------------|-------|
| Viscosity, Brookfield - RVF, cP:   |       |
| Spindle 5, speed 20 rpm            | 6,300 |
| Density, @ 25°C, g/cm <sup>3</sup> | 1.48  |
| Filler Content, %                  | 60    |
| Solids Content, %                  | 100   |

### Mixed Properties

|                                    |        |
|------------------------------------|--------|
| Viscosity, Brookfield - RVF, cP:   |        |
| Spindle 4, speed 20 rpm            | 19,500 |
| Density, @ 25°C, g/cm <sup>3</sup> | 1.55   |
| Peak Exotherm Temperature, °C:     |        |
| 200 g mass                         | 90     |
| Pot Life @ 25°C, minutes:          |        |
| 200 g mass                         | 60     |
| Gel Time @ 25°C, hours             | 5      |
| Flash Point - See SDS              |        |

## TYPICAL CURING PERFORMANCE Recommended Cure Schedule

36 to 48 hours @ 25°C

## Alternate Cure Schedule

3 hours @ 60°C

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

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties :

|                                              |                                         |
|----------------------------------------------|-----------------------------------------|
| Coefficient of Thermal Expansion, ppm/°C:    |                                         |
| Below Tg                                     | 66                                      |
| Above Tg                                     | 150                                     |
| Glass Transition Temperature(Tg), °C         | 50                                      |
| Coefficient of Thermal Conductivity, W/(m-K) | 0.644                                   |
| Linear Shrinkage, %                          | 0.1                                     |
| Shore Hardness, Durometer D                  | 88                                      |
| Water Absorption, %:                         |                                         |
| 24 hours                                     | 0.32                                    |
| Water Absorption, 24-hr immersion            |                                         |
| Tensile Elongation, %                        | 6.3                                     |
| Tensile Strength                             | N/mm <sup>2</sup> 18.5<br>(psi) (2,670) |
| Compressive Strength                         | N/mm <sup>2</sup> 81<br>(psi) (11,700)  |
| Flexural Strength                            | N/mm <sup>2</sup> 34.3<br>(psi) (4,975) |
| Tear Strength                                | N/mm <sup>2</sup> 1.7<br>(psi) (240)    |

### Electrical Properties:

|                                                   |                       |
|---------------------------------------------------|-----------------------|
| Dielectric Strength, 10 mil thickness, volts/mil  | 1,135                 |
| Volume Resistivity, ohm-cm                        | 6.38×10 <sup>14</sup> |
| Volume Resistivity, ohm-cm @ 105°C                | 9.28×10 <sup>10</sup> |
| Surface Resistivity, ohms @ 25°C                  | 2.12×10 <sup>15</sup> |
| Surface Resistivity, ohms @ 105°C                 | 6.65×10 <sup>15</sup> |
| Dielectric Constant / Dissipation Factor @ 25°C:  |                       |
| 100 Hz                                            | 4.7 / 0.04            |
| 1 kHz                                             | 4.6 / 0.03            |
| 10 kHz                                            | 4.4 / 0.02            |
| 100 kHz                                           | 4.2 / 0.02            |
| Dielectric Constant / Dissipation Factor @ 105°C: |                       |
| 100 Hz                                            | 22.2 / 1.3            |
| 1 kHz                                             | 8.6 / 0.3             |
| 10 kHz                                            | 7.7 / 0.09            |
| 100 kHz                                           | 7.0 / 0.09            |

**GENERAL INFORMATION**

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

**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.

**Note:** Before using this product please purge approximately 30 ml. of material prior to application. Discard purged material in accordance with the Material Safety Data Sheet. A video instruction is available upon request.

**STORAGE**

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

**Optimal Storage: 20 °C to 30 °C. Storage below 20 °C or greater than 30 °C can adversely affect product properties.**

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 Henkel Representative.

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb/F}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

**Disclaimer**

Reference 3