

LOCTITE STYCAST UV 7993

June 2018

PRODUCT DESCRIPTION

LOCTITE STYCAST UV 7993 provides the following product characteristics:

Technology	Urethane
Appearance	Translucent yellow
Components	One-component
Product Benefits	<ul style="list-style-type: none"> • UV curable • Room temperature moisture cure for shadowed areas • One component • Solvent-free • Good moisture resistance • Excellent chemical resistance
Cure	Ultraviolet (UV) light activation followed by room temperature moisture cure
Application	Conformal coating
Operating Temperature	-40 to 130 °C
Typical Assembly Applications	Printed wire board

LOCTITE STYCAST UV 7993 is a conformal coating designed to provide rugged protection from moisture and harsh chemicals. It is compatible with industry standard solder masks, no-clean fluxes, metallization, components and substrate materials.

LOCTITE STYCAST UV 7993 meets MIL-I-46058C standards. LOCTITE STYCAST UV 7993 conforms to IPC-CC-830 requirements.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Brookfield Viscosity mPa·s (cP)	120
Specific Gravity	1.04
Shelf Life @ 25°C, days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended UV Cure Condition

Medium pressure mercury vapor lamp	
Wavelength, nm	365
Exposure Time, seconds	10 to 20
Light Intensity, mW/cm ²	150 to 300

Moisture Cure for Shadowed Areas

Relative humidity 50%	100 hours @ 25 °C
Relative humidity >70%	50 hours @ 25°C

Areas hidden or shadowed from the UV light source will moisture cure at ambient temperature and humidity. No further processing is necessary.

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 A	80
Hardness, Shore D	60
Modulus	N/mm ² 1,150 (psi) (166,650)

Electrical Properties

Volume Resistivity, ohm-cm @ 25°C	2.2×10 ¹⁶
Dielectric Strength, kV/mm	50
Dielectric Constant	3.34
Dissipation Factor	0.0131

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Tensile Strength	N/mm ² 35 (psi) (5,005)
------------------	---------------------------------------

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Surface preparation of assembled boards prior to applying LOCTITE STYCAST UV 7993 is not required. However, improved adhesion and reliability performance can be achieved when contaminants such as ionics, dust, salts and oils are cleaned from the assembled board.
2. LOCTITE STYCAST UV 7993 has been applied successfully using dip, spray, brush, and flow coating equipment.
3. Final coating thickness is influenced by board size, part geometry and application method.
4. **Dip coat operations:** A withdrawal rate of 5inches per minute results in a typical coating thickness of 3 mils. Time allowed for coating run-off before cure will also influence final coating thickness. Coating run-off time should be based on appropriate process factors including board size and component density.
5. **Spray and flow coating operations:** Solventless conformal coatings usually require modified operating procedures compared to solvent-based systems such as lower flow rate through the gun, increased atomization pressure to create a fine mist and spray gun location approximately 2 to 3 inches above the assembled board.
6. Equipment parameters such as nozzle design, nozzle orientation and number of passes will impact final coating thickness.

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

Avoid heat, light and moisture.

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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage: [Except as otherwise noted] All trademarks in this document are trademarks and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference 4