Technical Data Sheet

LOCTITE STYCAST PC 54

September 2015

PRODUCT DESCRIPTION

LOCTITE STYCAST PC 54 provides the following product characteristics:

Technology	Acrylic
Appearance	Clear liquid
Cure	Hot air drying
Product Benefits	• Sprayable • Reworkable • Single component • Fluorescent under UV light • Superior toughness and abrasion resistance
Operating Temperature - Continuous	40 to 125°C
Application	Conformal coating
Dried Film Thickness	25 to 100µm
Typical Assembly Applications	Printed circuit board coating

LOCTITE STYCAST PC 54 one component conformal coating is designed to provide environmental and mechanical protection to printed circuit boards used in automotive, military and other electronic applications.

Components and joints may be repaired by heating the coating with a soldering iron for easy removal, or the entire coating may be removed with a suitable solvent. When fully dried, the material has superior toughness and abrasion resistance. Even after long environmental exposure, the coating retains its very light color.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content, %	27.5
Specific Gravity @ 25ºC	0.9
Viscosity, Brookfield - LV, 25 °C, mPa·s (cP):	
Spindle 1, speed 30 rpm	80
Shelf Life @ 25ºC, days	365
Flash Point - See SDS	

TYPICAL DRYING PERFORMANCE

Drying Conditions

Recommended Drying Time	45 minutes @ 75°C
Alternate Drying Time	24 hours @ 25°C
Semi-hard film	4 hours @ 25°C
Optimum properties	24 hours @ 25 °C

Tack Free Time

<10 minutes @ 25°C on glass plate

Drying of the coating is contingent on solvent evaporation. Drying at temperatures higher than that recommended could cause formulation of bubbles if bulk solvent is not allowed to evaporate before oven placement.

For optimum performance, boards should be air dried at least 30 minutes @ 25°C to remove solvents before final oven drying (or before applying additional coats).

Deaeration is not suggested.

The above cure profile is a guideline recommendation. Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of light source, exposure time and the light transmittance of the substrate.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Fungus Resistance	Non-nutrient per ASTM G21

Electrical Properties

Insulation Resistance , 25 to 75 µm film:		
Initial	25°C/50% R.H.	$>2.3\times10^{14}$
Cycle 4	65°C/95% R.H.	5×10^{11}
Cycle 7	65°C/95% R.H.	4×10^{10}
Cycle 10	65°C/95% R.H.	1×10^{10}
24hours after Cycle 10	25°C/50% R.H.	3.5×10^{12}
Dielectric Constant / Dissipation Factor , ASTM D150:		
@ 100Hz:		
@ 25ºC		2.78/0.079
@ 60ºC		3.67/0.036
@ 90ºC		3.54/0.003
@ 110ºC		3.42/0.014
@ 10kHz:		
@ 25ºC		2.36/0.027
@ 60ºC		2.74/0.11
@ 90ºC		3.43/0.064
@ 110ºC		3.41/0.015
@ 100kHz:		
@ 25ºC		2.29/0.012
@ 60ºC		2.39/0.062
@ 90ºC		2.89/0.132
@ 100ºC		3.24/0.089
Volume Resistivity, ASTM D257:		
@ 25°C		1.04×10^{16}
@ 60°C		3.89×10^{14}
@ 90°C		2.86×10^{13}
@ 110°C		9.25×10^{14}
Dielectric Strength:		
kV/mm		78
V/mil		2,000

DIELECTRIC WITHSTAND AT 1500 VOLTS, 50 Hz - No flash over or breakdown before or after thermal shock and moisture exposure.

LEAKAGE RATE - Less than 10 microamperes before and after thermal shock and moisture exposure.

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.

DIRECTIONS FOR USE

1. Product should be brought to room temperature before use..
2. Apply by spray coating.
3. Substrate cleanliness is paramount in promoting adhesion and preventing underfilm corrosion of copper conductors.
4. Some variation in listed values may occur; customer should determine whether cure other than recommended cure will give satisfactory results. **Deaeration is not suggested**.
5. Removal of liquid or dried LOCTITE STYCAST PC 54 can be achieved with Toluene, Isopropyl Alcohol, or Ketones (e.g. MEK).
6. Keep containers closed to avoid contamination and solvent evaporation.

Storage

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

Optimal Storage: 5 to 25°C. Storage below 5°C or above 25°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 Technical Service Center or Customer Service Representative.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = 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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