

LOCTITE STYCAST 1495K

May 2019

PRODUCT DESCRIPTION

LOCTITE STYCAST 1495K provides the following product characteristics:

Technology	Epoxy
Appearance (Resin)	Black liquid
Product Benefits	• Good thermal conductivity • Low viscosity • Can be used with a variety of catalysts
Application	Encapsulation, Potting

LOCTITE STYCAST 1495K epoxy encapsulant formulated for use in applications requiring good flow performance and thermal conductivity. It is an excellent choice for transformers, sensors and other electronic assemblies that require good heat dissipation and protection from environment.

LOCTITE STYCAST 1495K can be used with a variety of catalysts. For more information on mixed properties when used with other available catalysts, please contact your local technical service representative for assistance and recommendations.

CATALYST DESCRIPTION

LOCTITE CAT 9 provides the following product characteristics:

Product Benefits	• General purpose • Good chemical resistance • Good physical strength
Cure	Room temperature cure

LOCTITE CAT 11 provides the following product characteristics:

Product Benefits	• Long pot life • Excellent chemical resistance • Good physical and chemical properties at elevated temperatures
Cure	Heat cure

LOCTITE CAT 23LV provides the following product characteristics:

Product Benefits	• Low color • Low exotherm • Long pot life • Excellent thermal shock and impact resistance • Excellent low temperature properties • Excellent adhesion to glass
Cure	Room temperature cure

TYPICAL UNCURED PROPERTIES**LOCTITE STYCAST 1495K**

Brookfield Viscosity , mPa·s (cP):	
Spindle 6, speed 10 rpm	45,000
Density, g/cm ³	1.9
Shelf Life @ 18 to 25°C (from date of manufacture), days	365
Flash Point - See SDS	

LOCTITE CAT 9

Viscosity @ 25 °C, mPa·s (cP)	92.5
Flash Point - See SDS	

LOCTITE CAT 11

Viscosity @ 65 °C, mPa·s (cP)	47.5
Flash Point - See SDS	

LOCTITE CAT 23LV

Viscosity @ 25 °C, mPa·s (cP)	25.0
Flash Point - See SDS	

TYPICAL UNCURED PROPERTIES AS MIXED**LOCTITE STYCAST 1495K with LOCTITE CAT 9**

Brookfield Viscosity , mPa·s (cP)	21,000
Density, g/cm ³	1.89
Mix Ratio, Material:Catalyst:	
By Weight	100 : 4.5
By Volume	100 : 8.5
Work Life, 100 grams, @ 25°C, minutes	45

LOCTITE STYCAST 1495K with LOCTITE CAT 11

Brookfield Viscosity , mPa·s (cP)	14,000
Density, g/cm ³	1.89
Mix Ratio, Material:Catalyst:	
By Weight	100 : 5
By Volume	100 : 9
Work Life, 100 grams, @ 25°C, hours	4

LOCTITE STYCAST 1495K with LOCTITE CAT 23LV

Brookfield Viscosity , mPa·s (cP)	10,000
Density, g/cm ³	1.82
Mix Ratio, Material:Catalyst:	
By Weight	100 : 9
By Volume	100 : 17.5
Work Life, 100 grams, @ 25°C, minutes	60

TYPICAL CURING PERFORMANCE**Cure Schedule****LOCTITE STYCAST 1495K with LOCTITE CAT 9**

16 to 24 hours @ 25°C
 4 to 6 hours @ 45°C
 1 to 2 hours @ 65°C

LOCTITE STYCAST 1495K with LOCTITE CAT 11

8 to 16 hours @ 80°C
 2 to 4 hours @ 100°C
 30 to 60 minutes @ 120°C

LOCTITE STYCAST 1495K with LOCTITE CAT 23LV

24 hours @ 25°C
 6 to 8 hours @ 45°C
 2 to 4 hours @ 65°C

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**LOCTITE STYCAST 1495K with LOCTITE CAT 9****Physical Properties :**

Hardness, Shore D	95
Linear Shrinkage, cm/cm	0.001
Moisture Absorption, in 24 hours, %	0.07
Coefficient of Linear Thermal Expansion, ppm/°C	42
Thermal Conductivity, W/(m-K)	1.1
Operating temperature range, °C	-40 to +130

Electrical Properties:

Dielectric Constant @ 1 mHz	3.95
Dissipation Factor @ 1 mHz	0.027
Dielectric Strength, kV/mm	15.7
Volume Resistivity, ohm-cm:	
@ 25°C	5×10^{13}
@ 130°C	5×10^{11}

LOCTITE STYCAST 1495K with LOCTITE CAT 11**Physical Properties :**

Hardness, Shore D	95
Linear Shrinkage, cm/cm	0.004
Moisture Absorption, in 24 hours, %	0.09
Coefficient of Linear Thermal Expansion, ppm/°C	33
Thermal Conductivity, W/(m-K)	1.25
Operating temperature range, °C	-55 to +155

Electrical Properties:

Dielectric Constant @ 1 mHz	4.09
Dissipation Factor @ 1 mHz	0.038
Dielectric Strength, kV/mm	15.7
Volume Resistivity, ohm-cm:	
@ 25°C	5×10^{13}
@ 130°C	2.6×10^{11}

LOCTITE STYCAST 1495K with LOCTITE CAT 23LV**Physical Properties :**

Hardness, Shore D	90
Linear Shrinkage, cm/cm	0.002
Moisture Absorption, in 24 hours, %	0.1
Coefficient of Linear Thermal Expansion, ppm/°C	37
Thermal Conductivity, W/(m-K)	1.0
Operating temperature range, °C	-65 to +105

Electrical Properties:

Dielectric Constant @ 1 mHz	4.0
Dissipation Factor @ 1 mHz	0.042
Dielectric Strength, kV/mm	15.7
Volume Resistivity, ohm-cm :	
@ 25°C	5×10^{13}
@ 130°C	1×10^{10}

TYPICAL PERFORMANCE OF CURED MATERIAL**LOCTITE STYCAST 1495K with LOCTITE CAT 9****Miscellaneous**

Flexural Strength	N/mm ² 88 (psi) (12,800)
Compressive Strength	N/mm ² 139 (psi) (20,200)
Tensile Strength	N/mm ² 46 (psi) (6,670)

LOCTITE STYCAST 1495K with LOCTITE CAT 11**Miscellaneous**

Flexural Strength	N/mm ² 87 (psi) (12,600)
Compressive Strength	N/mm ² 190 (psi) (27,600)
Tensile Strength	N/mm ² 59 (psi) (8,560)

LOCTITE STYCAST 1495K with LOCTITE CAT 23LV**Miscellaneous**

Flexural Strength	N/mm ² 97 (psi) (14,100)
Compressive Strength	N/mm ² 97 (psi) (14,100)
Tensile Strength	N/mm ² 49 (psi) (7,110)

GENERAL INFORMATION

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

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 filler settling 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. Power mixing is preferred to ensure homogeneous product.
3. Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.
4. Blend components by hand, using a kneading motion, for 2 to 3 minutes. Scrape the bottom and sides of the mixing container frequently to produce a uniform mixture. If possible, power mix to an additional 2 to 3 minutes. Avoid high mixing speeds which could entrap excessive amounts of air or cause overheating of the mixture resulting in reduced working life.
5. To ensure a void-free embedment, vacuum de-airing should be used to remove any entrapped air introduced during the mixing operation. Vacuum de-air mixture at 1 to 5 mm mercury. The foam will rise several times the liquid height and then subside. Continue to vacuum de-airing until most of the bubbling has ceased. This usually requires 3 to 10 minutes.
6. Pour mixture into cavity or mold. 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. 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 : 18 to 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

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

Disclaimer**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 2

Americas
+1.888.943.6535

Europe
+32.1457.5611

Asia
+86.21.3898.4800

For the most direct access to local sales and technical support visit: www.henkel.com/electronics