Technical Data Sheet

LOCTITE® STYCAST 2850FT CAT 24LV

January 2025

PRODUCT DESCRIPTION

LOCTITE® STYCAST 2850FT CAT 24LV provides the following product characteristics:

Technology	Epoxy
Appearance (resin)	Black
Product benefits	• Thermally conductive • Electrically insulative • Thermal shock resistant • Low CTE • Can be used with a variety of catalysts
Application	Thermally conductive epoxy encapsulant
Typical assembly applications	Encapsulating

LOCTITE® STYCAST 2850FT CAT 24LV is recommended for encapsulation of components that require heat dissipation and thermal shock properties.

LOCTITE® STYCAST 2850FT CAT 24LV is also available in the unpigmented version.

LOCTITE® STYCAST 2850FT 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 24LV provides the following product characteristics:

Product benefits	• Low viscosity • Excellent adhesion • Thermal shock and impact resistant • Excellent low temperature properties • Fast cure
Cure	Room temperature
Mix ratio, by weight - material: catalyst	100 : 8
Mix ratio, by volume - material: catalyst	100 : 17.5
Operating temperature, °C	-65 to 105

TYPICAL PROPERTIES OF UNCURED MATERIAL

LOCTITE® STYCAST 2850FT

Brookfield viscosity, mPa.s (cP) Spindle 7, speed 10 rpm	250,000
Brookfield viscosity - small sample adapter, mPa.s (cP) (equivalent parameters) Spindle 14, speed 3 rpm	250,000
Density, g/cm^3	2.4
Shelf life @ 18 to 25°C, (from date of manufacture), days	365
Flash point - see SDS	

LOCTITE® CAT 24LV

Viscosity @ 25°C, mPa·s (cP)	35
Density, g/cm^3	1.02
Flash point - see SDS	

TYPICAL UNCURED PROPERTIES AS MIXED

LOCTITE® STYCAST 2850FT with LOCTITE® CAT 24LV

Work life, 100 gram mass, @ 25ºC, minutes	30

TYPICAL CURING PERFORMANCE

Cure schedule

LOCTITE® STYCAST 2850FT with LOCTITE® CAT 24LV

8 to 16 hours @ 25°C

4 to 6 hours @ 45°C

2 hours @ 65°C

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

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 2850FT with LOCTITE® CAT 24LV

Physical properties

Hardness, Shore D	92
Linear shrinkage, %	0.51
Water absorption, (24 hours immersion), %	0.14
Coefficient of thermal expansion, ppm	
Pre Tg	47
Post Tg	120
Glass transition temperature, °C	
Cured @ room temperature for 24 hours	40
Cured @ 65°C for 4 hours + 24 hours @ room temperature	55
Thermal conductivity, W/(m-K)	1.01

Electrical properties

Volume resistivity @ 25ºC, ohm-cm	2.0×10^{14}
Surface resistivity, ohm.s	7.2×10^{15}
Dielectric constant / Dissipation factor @ 1 mHz	6.0/0.037

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Certain resins and hardeners are prone to crystallization. If crystallization does occur, warm the contents of the shipping container to until all crystals have dissolved. Shipping container must be loosely covered during the warming stage to prevent any pressure build-up.
2. Allow contents to cool to room temperature before continuing.
3. Complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt and oils which can cause poor adhesion or corrosion in a bonded part.
4. 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.
5. Power mixing is preferred to ensure a homogeneous product.
6. Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy inproportion to the amounts being weighed should be used.
7. Blend components by hand, using a kneading motion, for . Scrape the bottom and sides of the mixing container frequently to produce a uniform mixture.
8. If possible, power mix for an additional . Avoid high mixing speeds. This can entrap excessive amounts of air. It can also cause overheating of the mixture, resulting in reduced working life.
9. To ensure a void-free embedment, vacuum deairing or degassing should be performed to remove any entrapped air introduced during the mixing operation.
10. Vacuum deair mixture at mercury. The foam will rise several times the liquid height and then subside.
11. Continue vacuum deairing until most of the bubbling has ceased.This usually takes .
12. To facilitate deairing in difficult to deair materials, add drops of an air release agent, such as into of mixture.
13. Gentle warming will also help, but pot life will be shortened.
14. Pour mixture into cavity or mold.
15. 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.
16. Further vacuum deairing in the mold may be required for critical applications.

STORAGE

Store product in an 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 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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
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
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, 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 of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 4