

LOCTITE HYSOL KL 4500-HHT

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PRODUCT DESCRIPTION

LOCTITE HYSOL KL 4500-HHT provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Cure	Heat cure
Product Benefits	• Low stress • Low viscosity • Low wire sweep molding • High reliability
Typical Package Application	SOIC, QFP, TO, SOP and SSOP
Application	Molding compound
Filler content, %	78
Flammability	94 V-0

LOCTITE HYSOL KL 4500-HHT epoxy molding compound delivers outstanding performance and ease of use.

LOCTITE HYSOL KL 4500-HHT meets UL 94 V-0 Flammability at 3.175mm thickness.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Gel Time @ 175°C, seconds	29
Spiral Flow, @ 175°C, cm	114
Specific Gravity	2.0
Shelf Life @ 5°C, months	12

TYPICAL PROCESS DATA

Handling

Preheat Temperature :	
Conventional mold, °C	80 to 100
Automold, seconds	0 to 5
Molding Temperature, °C	150 to 195
Transfer Pressure, Kg/cm ²	40 to 100
Transfer Time:	
Conventional mold, seconds	10 to 20
Automold, seconds	4 to 10
Curing Time, @ 175°C, :	
Conventional mold, seconds	60 to 100
Automold, seconds	50 to 90
Post Cure @ 175°C, hours	4 to 8

LOCTITE HYSOL KL 4500-HHT has been formulated to provide the best possible moldability and as wide a molding latitude as possible. Although molding and curing conditions will vary from situation to situation, recommended starting ranges are shown above.

TYPICAL PROPERTIES OF CURED MATERIAL

All measurements taken at 25 °C unless otherwise noted. All physical, electrical and analytical measurements taken on specimens cured for 2 minutes @ 175 °C with post cure of 6 hours at 175 °C, unless otherwise specified.

Physical Properties:

Coefficient of Thermal Expansion, ppm/°C:	
Below Tg,	14
Above Tg,	60
Glass Transition Temperature, °C	145
Flexural strength	N/mm ² 130
	(psi) 18,850
Flexural Modulus	N/mm ² 17,500
	(psi) 2,537,500
Molded shrinkage, as molded, %	0.22
Thermal Conductivity, W/(m-K)	0.8
Moisture Absorption, %:	
72 hours @ 85°C/85% RH	0.22
Water Extract Data, 90 minutes water boil:	
Conductivity, μmhos/cm	22
pH of extract	5.5
Extractable Ionic Content, ppm:	
Chloride (Cl ⁻)	<8
Sodium (Na ⁺)	<2
Bromide (Br)	<10

Electrical Properties:

Volume resistivity @ 25°C, 250 V, Ω-cm	20×10 ¹⁵
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GENERAL INFORMATION

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

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

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.

Data Ranges

The data contained herein may be reported as a typical value and/or range values based on actual test data and are verified on a periodic basis.

Storage

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

Powder Storage - Powder or preforms should be stored at 5°C or below, in closed containers. After removal from cold storage, the material **MUST** be allowed to come to room temperature, in the sealed container, to avoid moisture contamination. The suggested waiting time for a standard 15 kg carton box is 24 hours.

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

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

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.

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Reference 0.1