

LOCTITE® HHD 3597

September 2022

PRODUCT DESCRIPTION

LOCTITE® HHD 3597 provides the following product characteristics:

Technology	Polyurethane Hot Melt
Appearance	Black Solid
Solids Content, %	100
Components	One part - requires no mixing
Cure	Solidification and Moisture
Application	Device assembly

LOCTITE® HHD 3597 is a reactive hot-melt adhesive based on polyurethane prepolymers. The adhesive provides high impact strength after joining the parts fully cured.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - RV DV-II, 100 °C, mPa·s (cP):

Spindle 27	6,000
Density @ 25°C ±0.05, g/cm ³	1.1

TYPICAL CURING PERFORMANCE

Open Time @ 25 °C, minutes	1 to 2
Preheating Schedule	20 to 30 mins @ 100°C
Application Temperature, °C	90 to 110

Open time is based on the bonding range of a 1-1.5 mm width bead of molten adhesive on substrate and in room temperature environment. Higher temperature will lengthen the open time while lower environmental temperatures will shorten the open time.

LOCTITE® HHD 3597 cures exclusively by moisture and gains its final strength in 1-5 days. This material, however, exhibits high handling strength instantly after bonding.

Curing is a chemical reaction depending on the following parameters:

- Humidity in the rooms of application and storage
- Moisture content on the substrates
- Permeability of the substrates to be bonded
- Application volume / layer of the adhesive film

The above cure profile is a guideline recommendation. These cure conditions (time and temperature) may vary based on customers' experience and specific application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Sample cured 7 days @ 22°C, 50% RH

Adhesive Properties

Lap Shear Strength, ISO 4587

Glass to SUS	N/mm ²	8.5
	(psi)	(1,230)

GENERAL INFORMATION

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 their strong oxidizing materials.

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

Pretreatment:

1. The bonding surfaces must be clean, dry and free of oil and grease.
2. Substrate temperature should not fall below 20°C during application.
3. Lower temperatures will lead to early solidification of the adhesive and to a reduced open time, the adhesive might even flake off.
4. The substrates may be preheated if necessary.

Application:

1. LOCTITE® HHD 3597 can be applied from heating cartridge guns, from usual syringe type melting equipment.
2. At longer rest periods, melting and application temperatures should be decreased. Longer exposure to higher temperatures can lead to a viscosity increase.

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.

Frost Sensitive: No

Optimal Storage : 5 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 Henkel Representative.

Conversions

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

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Reference 1.0

