

LOCTITE® HHD 3559BK

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PRODUCT DESCRIPTION

LOCTITE® HHD 3559BK provides the following product characteristics:

Technology	Polyurethane Hot Melt
Chemical Type	Reactive Polyurethane
Appearance	Black Solid
Solids Content, %	100
Components	One component - requires no mixing
Product Benefits	• Good reworkability • High impact resistance • Low modulus • Long open time
Cure	Solidification and Moisture
Application	Structural adhesive, Electronic structural bonding

LOCTITE® HHD 3559BK is a reactive hot-melt adhesive based on polyurethane prepolymers. It is a recommended bonding solution for new device design. This adhesive has a long open time and is ideal for automatic or manual assembly line production.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - Thermosel, 110 °C, mPa·s (cP):
Spindle 27 5,200

TYPICAL CURING PERFORMANCE

Open Time, minutes >9
Application Temperature, °C 90 to 140
Preheating Schedule:
30 ml 30minutes @ 100 to 120°C
300 ml 60minutes @ 110 to 120°C

Open time is based on room temperature environment under 25°C. Higher temperature will prolong the open time while lower environmental temperatures will shorten the open time.

LOCTITE® HHD 3559BK cures exclusively by moisture and gains its final strength in 1 to 7 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. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements.

TYPICAL PROPERTIES OF CURED MATERIAL**Physical Properties**

Glass Transition Temperature:
Tg by DMA, tan delta, °C -25 to -15
Elongation @ break, % >800
Tensile Modulus, N/mm² <50
Tensile Strength, N/mm² 15

Adhesion Properties

Sample cured 24 hours @ 25°C, 50%RH
Lap Shear Strength, N/mm² :
PC on AnAl 6
Cross Tensile Strength, N/mm² :
PA on SUS 5

GENERAL INFORMATION

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 3559BK 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.

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. Storage below 18°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 Henkel Representative.

Conversions

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

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local Henkel representative for assistance and recommendations on the specifications of this product.

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