

LOCTITE 3220

September 2015

PRODUCT DESCRIPTION

LOCTITE 3220 provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Product Benefits	- One component - Fast cure at low temperatures - Excellent adhesion
Cure	Heat cure
Application	Adhesive and Sealant
Typical Applications	Image sensors and MMC

LOCTITE 3220 is designed for use in heat sensitive devices.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Casson Viscosity @ 25 °C, mPa·s (cP):

Haake PK 100, M10/PK 1 2° Cone 2,500

Yield Point @ 25°C, MPa 57,000

Specific Gravity 1.36

Pot Life @ 25°C, days >14

Shelf Life @ -15°C (from date of manufacture), days 365

Flash Point - See SDS

TYPICAL CURING PERFORMANCE

Cure Schedule

5 to 10 minutes @ 80°C

With all curing systems, the time required for cure depends on the rate of heating. Cure rate depends on the mass of material to be heated and intimate contact with the heat source. Use suggested cure conditions as general guidelines. Other cure conditions may yield satisfactory results.

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

Physical Properties :

Volumetric Shrinkage on Cure, % 4.1

Linear Shrinkage on Cure, % 1.3

Hardness, Shore D, ASTM D2240 79

Coefficient of Thermal Expansion :

alpha 1, <Tg, cm/cm°C 61×10⁻⁶

alpha 2, >Tg, cm/cm°C 171×10⁻⁶

Glass Transition Temperature (Tg) by TMA (ITM65B), °C 26

Water Absorption, ASTM D 570, %:

168 hours @ 85°C/85% RH 2.6

Tensile Modulus, Sample cured 30 minutes @ 80°C:

@ 25°C N/mm² 3,240
(psi) (469,920)

@ 85°C N/mm² 22
(psi) (3,190)

Tensile Strength, ASTM-D-790 N/mm² 13
(psi) (1,885)

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength :

Glass Epoxy to Glass Epoxy N/mm² 20.4
(psi) (2,960)

GENERAL INFORMATION

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

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.

DIRECTIONS FOR USE

- 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.
- 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.
- Apply adhesive to all surfaces to be bonded and join together.
- In most applications only contact pressure is required.
- Usable shelf life may vary depending on method of application and storage conditions.

Storage

Store in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling.

Optimal Storage: -15 °C. storage greater than -15 °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 Technical Service Center or Customer Service Representative.

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

Reference 0.2

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