

LOCTITE 3220

February 2023

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
Viscosity, Brookfield CP51, 25 °C, mPa·s (cP):	
Speed 20 rpm	7,150
Thixotropic Index, Brookfield (2/20 rpm)	3.3
Yield Point @ 25°C, MPa	57,000
Specific Gravity	1.36
Pot Life @ 25°C, days	>14
Shelf Life @ -25 to -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 specific 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, <T _g , cm/cm°C	61×10 ⁻⁶
Alpha 2, >T _g , cm/cm°C	171×10 ⁻⁶

Glass Transition Temperature (T_g) 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/mm ²	3,240
	(psi)	(469,920)
@ 85°C	N/mm ²	22
	(psi)	(3,190)
Tensile Strength, ASTM-D-790	N/mm ²	13
	(psi)	(1,885)

TYPICAL PERFORMANCE OF CURED MATERIAL

Lap Shear Strength :

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

GENERAL INFORMATION

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

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.

DIRECTIONS FOR USE

1. 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.
2. 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.
3. Apply adhesive to all surfaces to be bonded and join together.
4. In most applications only contact pressure is required.
5. 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: -25 to -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 Henkel Representative.

registered in the U.S. Patent and Trademark Office.

Reference 0.4

Conversions

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

Disclaimer

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