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LOCTITE

Technical Data Sheet

LOCTITE® 3296

August 2023

PRODUCT DESCRIPTION

LOCTITE® 3296 provides the following product characteristics:

Technology	UV curable epoxy
Appearance	Milky white
Product Benefits	• Fast UV cure • High Tg and low CTE • Low shrinkage during & after cure • SVHC free and Antimony free
Cure	Ultraviolet (UV) light and Heat cure
Application	Assembly
Typical Assembly Applications	ADAS Optical Modules

LOCTITE® 3296 dual cure adhesive is specifically designed for Automotive ADAS Optical Modules bonding applications such as lens barrel-to-housing and lens housing-to-circuit board. The ultimate performance of this material is achieved by exposure to UV light of adequate intensity, followed by a thermal cure. This adhesive can be applied by dispensing.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25ºC, 15 s^{-1}, mPa·s	33,700
Shear thinning index, 1.5/15 s^{-1}	4.3
Density, 25°C, g/cm³	1.8
Shelf Life @ -25 to -18ºC, months	6

TYPICAL CURING PERFORMANCE

Required UV Cure

Light Source and Condition:

UV LED:

UV Wavelength, nm	365
Irradiance at bond line mW/cm²	1,000
Recommended Time, seconds	3

Recommended Heat Cure

30minutes @ 120°C
or
60minutes @ 100ºC

Cure rate and depth of cure will depend on the UV intensity measured at the product surface, wavelength, exposure time and the light transmittance of the substrate.

Conditions 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

Sample cured 3 secs @ 1,000 mW/cm² + 30 min @ 120°C

Physical Properties :

Glass Transition Temperature, tan δ, DMA, °C	189
Coefficient of Thermal Expansion, TMA:	
25 to 125°C, ppm/K	22.1
Hardness, Shore D , Durometer	94
E-modulus (Storage) @ 25°C, MPa DMA (Single Cantilever)	10,900
Cure Shrinkage, Linear, %	0.33
Cure Depth (UV only), mm	> 3

Adhesive Properties:

Adhesion Strength:

Die Shear, plasma :

After UV Cure:

Aluminum to Aluminum	N/mm² (psi)	8 (1,160)

After Full Cure :

Aluminum to Aluminum	N/mm² (psi)	19.3 (2,800)

Outgassing Properties:

Passes Micro-VCM Test	789/22
Total Mass Loss, %	0.27 (0.01)
Recovered Mass Loss, %	0.14 (0.0)
Collected Volatile Condensable Material, %	0.0 (0.0)

GENERAL INFORMATION

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

CONDITIONING

Allow container to reach room temperature before use.

Recommended thawing time:

30/55 cc, hours	1
6 oz, hours	2

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DIRECTIONS FOR USE

The rheology of this material makes it suitable for use in dispensing applications
The product needs to be cured according to the cure parameters described above.

AVAILABILITY

This adhesive is available in 30 and 55 cc syringes and 6oz cartridges.

STORAGE

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

Optimal Storage: -25 to -18°C. Under this condition the shelf life is 6 months.

Storage below -25°C or higher than -18°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

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
N/mm² = MPa
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

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