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LOCTITE

Technical Data Sheet

LOCTITE ABLESTIK NCA 2286

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PRODUCT DESCRIPTION

LOCTITE ABLESTIK NCA 2286 provides the following product characteristics:

Technology	Acrylate
Appearance	Black liquid
Product Benefits	• Non-conductive • One component • Dual cure system • High dispense aspect ratio • Fast UV cure • Fast cure at low temperatures • High elongation strength • High fracture toughness • Good adhesion to LCP, PC, Ceramic and PCB
Cure	Ultraviolet (UV) light followed by heat cure
Application	Semiconductor, Non-conductive adhesive
Typical Assembly Applications	Camera module assembly, active alignment lens holder attach

LOCTITE ABLESTIK NCA 2286 dual cure adhesive is designed for use in active alignment applications in camera module assembly. It has been formulated to a high viscosity and thixotropy to enable higher aspect ratios of dispensed adhesive, thus allowing for easier adjustments for the final assembly. This material is engineered to meet the high reliability performance requirements for the optoelectronic / semiconductor industry.

LOCTITE ABLESTIK NCA 2286 is black in color to prevent light penetration into the final assembled device. It is designed to achieve fast cure response and good depth of cure after UV radiation. This product also contains a secondary thermal cure mechanism for applications with shadowed areas where light is unable to penetrate.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Rheometer, Cone and Plate @ 25°C, mPa·s (cP):	
Angle 2° @ Shear rate 20 s^{-1}	40,000
Thixotropic Index (2/20 s^{-1})	5.7
Work Life @ 25°C, <25% viscosity increase, days	3
Shelf Life @ -20°C, <25% viscosity increase, days	180
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Cure Condition

UV Light

UV Wavelength, nm	220 to 380
Light Intensity, mW/cm²	1,000
Exposure Time, seconds	4

Secondary Heat Cure

1 hour @ 80°C

Alternate Cure Condition

UV Light

UV Wavelength, nm	220 to 380
Light Intensity, mW/cm²	2,000
Exposure Time, seconds	2

Secondary Heat Cure

1 hour @ 80°C

Depth of Cure

Depth of Cure, after UV Cure, mm	0.9

Shrinkage on Cure(*)

Cure Shrinkage, %	5
Volume, after UV + thermal cure	

Weight Loss on Cure(*)

Weight Loss on Cure, %	1
Jump to 80ºC, Isothermal for 1 hour, TGA	

(*) Samples cured UV @ 365nm 4S x 1000 mW/cm² =4Jcm² , Thermal cure 1 hour @ 80ºC.

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 profile is a guideline recommendation. Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of light source, exposure time and the light transmittance of the substrate.

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TYPICAL PROPERTIES OF CURED MATERIAL

Sample cured at the recommended cure conditions

Physical Properties

Hardness, Shore A	85
Coefficient of Thermal Expansion, ppm/°C:	
Below Tg	55
Above Tg	165
Glass Transition Temperature (Tg) by TMA, °C	28
Elongation @ break	
After UV plus thermal cure, texture test:	
Elongation, %	60
After 85RH/85%, 120, %	25
Young's modulus (E) By DMA, MPa	3,319
Extractable Ionic Content, ppm:	
Chloride (Cl-)	ND
Fluoride (F-)	ND
Transmittance @ 400 nm thickness, 0.4 mm, UV-Vis, %	1.5

TYPICAL PERFORMANCE OF CURED MATERIAL

Sample cured at the recommended cure conditions using 3x3 mm glass die on LCP substrate.

Shear Strength

Die Shear Strength:

3 x 3 mm Glass die on LCP:

After UV Cure, kg-f	8.8
After UV cure followed by heat cure, kg-f	14.98
After UV + thermal cure, aging test 120 hours, 85%/85H, kg-f	11.24
After UV + thermal cure, aging test 1,000 hours, 85%/85H, kg-f	6.45

GENERAL INFORMATION

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

THAWING: (if applicable)

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the warmed up container should be removed prior to opening the container.
4. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Thawed material should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive..
3. Adhesive must be completely used within the product's recommended work life.

STORAGE:

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

Optimal Storage : -20 °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 Technical Service Center or Customer Service Representative.

Conversions

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

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
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