

LOCTITE® ABLESTIK NCA 01 UV LV

October 2024

Product description

LOCTITE® ABLESTIK NCA 01 UV LV provides the following product characteristics:

| | |
|--------------------------------------|--|
| Technology | UV curable epoxy |
| Appearance | Opaque white |
| Product benefits | <ul style="list-style-type: none"> • Full one step UV cure adhesive • High Tg, low CTE • Low shrinkage • SVHC free and Antimony free |
| Cure | Ultraviolet (UV) light |
| Application | Assembly |
| Typical assembly applications | ADAS optical modules |

LOCTITE® ABLESTIK NCA 01 UV LV one step cure adhesive is specifically designed for automotive Camera Module bonding applications such as lens barrel-to-housing and lens housing-to-circuit board. The ultimate performance of this material is already achieved by exposure to UV light of adequate intensity and does not require a thermal post-cure. This adhesive can be applied by dispensing.

Typical properties of uncured material

| Property | Method | Typical value |
|-------------------------------|------------------------|---------------|
| Viscosity@25°C, (mPas.s) | @ 15 s ⁻¹ | 13800 |
| Shear thinning index | 1.5/15 s ⁻¹ | 4.1 |
| Density, (g/cm ³) | 25 °C | 1.8 |
| Shelf Life @ -40°C, (mos) | | 6 |

Typical curing performance

Required UV cure

Light source and condition:

| | |
|---|------|
| LED | |
| UV wavelength, nm | 365 |
| Irradiance at bond line, mW/cm ² | 1000 |
| Recommended time, seconds | 3 |

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.

Typical properties of cured material

Sample cured 3 secs @ 1000 mW/cm² with 365 nm.

Physical properties

| Property | Typical |
|---|---------|
| Glass transition temperature, tan δ, DMA, °C | 138 |
| Storage modulus @ 25°C, DMA, Single Cantilever, MPa | 6200 |
| CTE 1, TMA, ppm/K | 16.2 |
| Hardness, Shore D, Durometer | 94 |
| Cure Shrinkage, Linear, % | 0.4 |
| Cure depth, mm | 8 |
| Residual enthalpy, J/g | <10 |

Typical performance of cured material

Performance properties

| Property | Method | Typical |
|----------------------|-------------------------|-------------|
| Adhesion strength | Die Shear after plasma | |
| After UV cure | | |
| Aluminum to aluminum | N/mm ² (psi) | 10.5 (1450) |
| Aluminum to FR4 | N/mm ² (psi) | 12.1 (1740) |

Outgassing properties

| | |
|--|------------|
| Passes micro-VCM test | |
| Total mass loss, % | 0.29 (0.0) |
| Recovered mass loss, % | 0.2 (0.0) |
| Collected volatile condensable material, % | 0.0 (0.0) |

General information

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

Conditioning

Allow container to reach room temperature before use.

Recommended thawing time: 2 h.

Do not touch the syringe during thawing to avoid freeze-thaw voids.

Direction 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.

Storage

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

Optimal storage: at -40°C. Under this condition the shelf life is 6 mos (preliminary).

Storage for longer periods below -40°C or higher than -30°C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return products 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.

Note:

This product is a developmental product. It is not now, and may not be in the future, commercially available. The properties of the uncured material and the physical properties of the cured material have been established as a point of reference only. Henkel recommends that each prospective user test his proposed application before repetitive use, using this data as a guide. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. This product may contain materials that are not regulatory listed on TSCA, EINECs and other global inventories.

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