



NORLAND PRODUCTS INCORPORATED

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Norland Optical Adhesive 1639H

Norland Optical Adhesive 1639H is clear liquid adhesive that will cure when exposed long wavelength ultraviolet light. NOA 1639H is recommended for bonding for glass to glass. Adhesion is also good to cellulose acetate butyrate. NOA 1639H is cured by ultraviolet light between 315 to 395 nm. 365 nm is peak absorption. Full cure requires 6 Joules/cm². The adhesive exhibits oxygen inhibition when used as a coating. To overcome this the adhesive must be cured under an inert atmosphere, such as nitrogen. This adhesive when fully cured is soft and rubbery.

In addition to the UV cure, NOA 1639H contains a latent heat catalyst that can quickly cure areas that do not see the ultraviolet light. The catalyst allows the adhesive to cure in 10 minutes at 125°C in a convection oven, or 3 hours at 80° C. Faster cure times are possible with infrared ovens. Areas in contact with air will cure tacky unless exposed to UV light or given the 125° C cure. Temperatures less than 80°C will not activate the adhesive. The advantage of the heat cure is to bring partially cured adhesive to full cure to get the maximum physical properties of the adhesive. The heat cure is not required if all the adhesive receives proper exposure to UV light.

Typical Properties of NOA 1639H

Refractive Index	1.639
Temperature Range	-125° C to 125° C
Viscosity @ 25C	240 cps
Shore D	10

Keep NOA 1639H refrigerated in a dark place in the original container, refer to the package label for the actual expiration date.. Allow the adhesive to come to room temperature before using.

Care should be taken in handling the this material. The material Safety Data Sheet should be read for this product. Prolonged contact with skin should be avoided and affected areas should be washed thoroughly with copious amounts of soap and water. If adhesive gets into eyes, flush with water for 15 minutes and seek medical attention.

Spectral Transmission of NOA 1639H (thru 1 mil film thickness)

2000nm	99.0%
1500nm	99.0%
1000nm	97.5%
750nm	97.4%
650nm	97.2%
550nm	96.8%
500nm	96.5%
450nm	96.1%
350nm	90.0%

The data contained in this technical data sheet is of a general nature and is based on laboratory test conditions. Norland Products does not warrant the data contained in this data sheet. Norland does not assume responsibility for test or performance results obtained by users. It is the users responsibility to determine the suitability for their product application, purposes and the suitability for use in the user's intended manufacturing apparatus and methods. The user should adopt such precautions and use guidelines as may be reasonably advisable or necessary for the protection of property and persons. Nothing in this technical data sheet shall act as a representation that the product use or application will not infringe a patent owned by someone other than Norland Products or act as a grant of a license under any Norland Products Inc patent. Norland Products recommends that each user test its proposed use and application before putting into production.