

## UV5105H

### *Photo – curing Epoxy for Optical Component*

UV5105H is a UV-curing epoxy resin developed for optical components sealing. Cured product demonstrates outstanding adhesion strength, thermal-shock resistance and low shrinkage. This product can cure with UV irradiation; however, to obtain best optimum properties, require UV curing process and heating process. For specialties and reliability of this product, it is applied on optical electronic areas.

### FEATURE

- This product offers excellent storage stability very long shelf life.
- This product will not release by-products and will exhibit excellent low shrinkage during curing process.
- This product can be applied on electronic components sealing and dispensers.
- This product forms an outstanding adhesion properties with glass, metals and ITO (Indium Tin Oxide Conductive Glass).
- This product exhibits lower moisture permeability than the other competitors.
- Cured product can effectively against moisture.
- The retained strength of this product after environmental test experiments is still very high.
- This product is solvent-free and low-polluted epoxy.
- This product complies to the 2011/65/EU RoHS regulations.

### DIRECTION OF USE

1. The package of this product which is refrigerated in 2~13°C can be brought to ambient conditions by allowing to stand at 14~34°C for 1 to 2 hours. Do not loosen container cover before temperature equilibration.
2. It should be applied to a clean surface which is free of dirt, grease or mold release. In many cases, a simple solvent wipe is sufficient.
3. After heat curing stage, cool down the part gradually can minimize the thermal stress.
4. Certain materials may inhibit the cure of this product when placed in contact with the uncured resin. Materials such as amines, amine cured epoxies, polyurethane, etc., are some which may cause inhibition. Even surfaces which have been in contact with such materials may cause it. If in doubt, a patch test should be done.

### TYPICAL UNCURED PROPERTIES

Properties	UV5105H
Appearance	Liquid
Color	Gray
Viscosity *25°C, cps	20 000 – 42 000, S14, 20 rpm
Viscosity *25°C, cps	140 000 – 300 000 S14, 2rpm
Thixotropic Index	≥ 4

### TYPICAL CURING PROPERTIES

Properties	UV5105H
Pot Life 25°C, day	7
Recommended Wavelength, nm	310-365
Minimum Light Intensity, mW/cm <sup>2</sup>	> 50
Minimum Light Energy, mJ/cm <sup>2</sup>	3 000 – 6 000
Post-Cure Time, 120 °C, min	30

### TYPICAL CURED PROPERTIES

Properties	UV5105H
Glass Transition Temp., (DSC), °C	56
CTE*2 (-20~10oC) ,µm/m/ °C	37
CTE*2 (130~160oC) ,µm/m/ °C	58
Water Absorption Ratio (25°C /24hr), %	0.15
Water Absorption Ratio (80°C /24hr), %	2.07
Water Absorption Ratio (97°C /1.5hr), %	0.85

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### TYPICAL CURED PROPERTIES

Properties	UV5105H
Durometer Hardness, Shore D	63
Specific Gravity	1.51
Weight Loss Ratio@100°C, %	0.16
Weight Loss Ratio@150°C, %	0.36
Weight Loss Ratio@200°C, %	1.00
Weight Loss Ratio@250°C, %	1.49
Weight Loss Ratio@300°C, %	2.35
Weight Loss Ratio@350°C, %	4.57

(\*1) Specimen Cure Condition: 3 000 mJ/cm<sup>2</sup> + 120 °C/ 30 min

(\*2) CTE: Coefficient of Thermal Expansion

### STORAGE AND SHELF LIFE

This product should be kept without any possibility of moisture and heat exposure. Shelf life of this product is 6 months when stored at 2°C ~ 13°C in the original and unopened containers. Before use, this product should be placed at 14~34°C for 1 to 2 hours. The properties will be changed when placing this product at 14~3°C for too long time.

### CAUTION

Some findings indicate a lack of potential for carcinogenicity with the compositions of this product by long term recurrent application to the skin. However, contact with skin is likely to produce mild transient reddening. It is important to remove adhesive from skin with soap and water thoroughly. DO NOT use solvents for cleaning hands. This product is of moderate acute toxicity by swallowing. If swallowed, call a physician. Avoid contact with eyes. In case of contact, flush with water for at least 15 minutes and get medical attention immediately. For specific information on this product, consult the Material Safety Data Sheet.

The data contained in this bulletin is provided only as a guide for evaluation/consideration. These material characteristics are typical properties that are based on a limited number of samples tested in the laboratory. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any product or method. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.