

Technical Data Sheet

UV5105

Photo - curing adhesive for Plastic bonding

UV5105 is photo-curing adhesive designed for plastics bonding, such as ABS, HIPS, PS, PC, PVC, and Acrylic. This resin is a solvent-free acrylated urethane adhesive, which provides a good surface dryness, and is used for plastic brushing. This product can fast cure under ultraviolet light and have good adhesion strength.

FEATURE

- This product has fast curing properties and high adhesion strength.
- Cured product demonstrates the very high compatibility to many substrates, especially for plastics.
- This product has good fluidity and good handling properties.
- This product complies to the 2011/65/EU RoHS regulations.

TYPICAL UNCURED PROPERTIES

Properties	UV5105	
Composition	Acrylated urethane	
Appearance	Liquid	
Color	Colorless	
Viscosity*25°C, cps S14 50rpm	6,500 ~ 9,900	
Refractive index nD@25.2°C	1.4791	
Specific Gravity @25°C	1.056	
Solvent Content, %	0	

TYPICAL CURING PROPERTIES*

Properties	UV5105
Recommended Wavelength, nm	310 ~ 365
Minimum Light Intensity, mW/cm ²	> 50
Minimum Light Energy, mJ/cm ²	1,500 ~ 2,000

^{*}The minimum light energy is for reference

DIRECTION OF USE

- 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.
- 2. For maximum bonding strength apply adhesive evenly to both surfaces to be jointed.
- 3. Cure time on the real part will depend upon factors such as part geometry, materials to be bonded, bondline thickness, and efficiency of the UV light. Cure schedule should be confirmed with actual production parts and equipment.

- 4. Please standardize the UV lamp intensity and illumination. Over-exposure will not affect the resin properties, but the resin properties will be changed if there is not enough exposure. The resin may have lower reaction rate and may not pass the environmental test experiments.
- 5. This product may cause skin irritation to sensitive personnel..

TYPICAL CURED PROPERTIES

Properties	UV5105	
Durometer Hardness, ASTM D2240- 03, Shore D	65	
Specific Gravity @25°C	1.13	
Water Absorption Ratio (25°C/24hr), %	3.89	
Shear Strength PVC vs. PVC, kgf/cm ²	214	
Shear Strength PVC vs. Al, kgf/cm ²	25	
Shear Strength PVC vs. glass, kgf/cm ²	58	
Elongation, %	208	
Modulus of Elasticity, N/mm ²	21	
Refractive Index nD @25.3°C	1.5012	
Volume Resistivity, @500V, ohm-cm	7.11*10 ¹⁴	
Surface Resistivity, @500V, ohm	1.35*10 ¹⁵	
Dielectric Constant/ Dielectric loss @100Hz	3.57/0.11	
Dielectric Constant/ Dielectric loss @1KHz	3.40/0.10	
Dielectric Constant/ Dielectric loss @100KHz	3.20/0.11	

Issue date: September 2022

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Chemical resistance/ Solvent resistance

Aging under the following conditions, and then testing at 22°C

		Retention rate of initial strength, %		
Environment	₀ C	2h	24h	170h
Boiling water	100	*100		
Flooding	49	*100		
Flooding	87	*100		
Soaked in isopropanol	22		95	
Heat/ Humid	38			*100

Heat aging

Shear strength, ISO 4587, % initial strength

Polycarbonate:

@71°C aging 170 hr	*100
@71°C aging 340 hr	*100
@93°C aging 170 hr	*100
@93°C aging 340 hr	*100

^{*} Substrate failure

STORAGE AND SHELF LIFE

This product should be kept without any possibility of light exposure. Replace the lid immediately after use. This product has six months minimum shelf life when stored in dark place below $14\sim34^{\circ}\mathrm{C}$ in original, unopened containers.

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 more information, refer to 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.

Issue date: September 2022

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