

LIGHT WELD® 481

STRUCTURAL POLYCARBONATE & PVC BONDER

DESCRIPTION

Light Weld 481 is a very fast UV curing adhesive developed for use in bonding a variety of plastic. Bond strengths on polycarbonate and rigid PVC usually exceed the strength of those substrates. Thin bond lines are clear and colorless; thicker sections may exhibit a light straw color. Adhesion can be increased by use of 510 primer on more difficult to bond plastics such as ABS, acrylic and polysulfone. (See 510 Primer Product Data Sheet for instructions.)

TYPICAL UNCURED PROPERTIES

Solvent Content	None
Composition	Urethane Oligomer/(Meth)Acrylate Monomer Blends
Appearance	Clear/Straw Liquid
Flash Point	>93°C (200°F)
Solubility	Alcohol/Chlorinated Solvents/Ketones
Toxicity	Low
Viscosity ^[1]	481 5,000 cP (nominal)
	481-Gel Thixotropic Gel

TYPICAL CURED PROPERTIES

PHYSICAL

Durometer	D80	ASTM D-2240
Elongation at Break	55%	ASTM D-638-77A
Tensile at Break	9,500 psi	ASTM D-638-77A
Shrinkage Upon Cure	8.5%	
Refractive Index	1.52	
Thermal Limit (brittle/degrades)	-54° to 177°C (-65° to 350°F)	
Coefficient of Thermal Expansion	7.7 x 10 ⁻⁵ in/in°C	ASTM D-696
Water Absorption	4.7%	ASTM D-570

ELECTRICAL

Dielectric Strength	800 Volts/Mil	ASTM D-149
Surface Resistivity	1.9 x 10 ¹⁵ ohm	JIS x 6911

CURE DATA - UV LIGHT CURE DATA - Using 365 nm wavelength UV light^[2].

	Time seconds	Intensity ^[3] mW/cm ²	Dymax Light-Welder® Lamps
Fixture between glass slides	1-2	50	2000-EC
Tack free surface cure (.125 inches bead)	5	200	5000-EC
Nominal Cure Depth (.375 inches)	60	50	2000-EC

STORAGE AND SHELF LIFE

Store material in a cool dark place when not in use. Do not expose to UV light source or sunlight. Light Weld 481 has a minimum one year shelf life when stored below 32°C (90°F) out of sunlight in original, unopened container.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of contact, immediately flush with water for at least 15 minutes; for eyes, get medical attention. Wash clothing before reuse. Keep out of reach of children. Do not take internally. If swallowed, vomiting should be induced at once and a physician called.

NOTES

- [1] Measured at 20 rpm and 25°C using a Brookfield Model RVF Viscometer.
- [2] Use of lamps that emit high levels of shortwave light (for example, more than 15% 200-300 nanometers UV light) are not recommended.
- [3] Nominal intensity taken at a pre-determined distance. This reading does not reflect the maximum intensity capabilities emitted from each unit.

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