

Multi-Cure[®] 621 Series Phenolic and Filled Plastics-to-Glass and Metal Adhesives

Dymax 621 Series adhesives are high tensile strength, UV-curable resins that are especially well suited for rigid adhesive applications. Multi-Cure[®] 621 Series adhesives form clear, hard bonds to glass, metal, phenolic, filled Nylon, ferrite, ceramic, and other materials. Multi-Cure[®] 621 Series can be cured with UV light, heat, or preapplied activator. Dymax adhesive/activator bonding systems comply with the Montreal Protocol and U.S. Clean Air Act of 1990. This product is in full compliance with the RoHS Directives 2002/95/EC and 2003/11/EC.

TYPICAL UNCURED PROPERTIES (not specifications)

Solvent Content	None - 100% Reactive Solids	
Chemical Class	Urethane Acrylate	
Appearance	Clear/Straw Liquid	
Flash Point	>93°C (200°F)	
Solubility	Alcohols/Chlorinated Solvents/Ketones	
Toxicity	Low	
Viscosity (20 rpm) 621	750 cP (nominal)	ASTM D-1084
621-T	3,500 cP (nominal)	ASTM D-2556
621-VT	11,000 cP (nominal)	ASTM D-2556
621-GEL	25,000 cP (nominal)	ASTM D-2556

TYPICAL CURED PROPERTIES (not specifications)

Durometer Hardness	D75	ASTM D-2240
Tensile at Break	5,200 psi (35.9 MPa)	ASTM D-638
Elongation at Break	17%	ASTM D-638
Modulus of Elasticity	320,000 psi	ASTM D-638
Tensile (Lap) Shear (Steel-to-Steel)	3,600 psi	ASTM D-1002
Tensile Compression Shear		
Glass-to-Glass	4,000 psi (exceeds strength of glass)	DSTM D-250*
Glass-to-Steel	5,000 psi (exceeds strength of glass)	DSTM D-251*
Water Absorption (24 h)	1.1%	ASTM D-570
Boiling Water Absorption (2 h)	3.0%	ASTM D-570
Linear Shrinkage	3%	DSTM D-101*
Coefficient of Linear Thermal Expansion	90 x 10 ⁻⁶ in/in/°C	ASTM D-696
Thermal Limit (Brittle/Degrades)	-43° to +177°C (-45°/+350°F)	DSTM D-200*
Glass Transition T _g , 621-VT	83 °C	DSTM D-256*

*DSTM refers to Dymax Standard Test Method

ELECTRICAL

Dielectric Strength	1,600 V/mil	ASTM D-1304
Volume Resistivity	7.5 x 10 ¹³ Ω*cm	ASTM D-1304
Surface Resistivity	2.2 x 10 ¹⁴ Ω	ASTM D-1304
Dissipation Factor, 1 MHz	0.06	ASTM D-1304
Dielectric Constant, 1 MHz	4.10	ASTM D-1304

CURE DATA - Using 365 nanometer UV light:

	Cure Time (Seconds)	Intensity (mW/cm ²)	Dymax Light-Welder [®] Lamps
Tack-Free Cure (1/8-inch bead)	35	175	5000-EC
Depth of Cure (1/4 inch)	30	175	5000-EC
Fixture Between Glass Slides	1-2	50	2000-EC



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Shadowed areas can be cured with activator or heat.

Activator is placed on one surface and the adhesive on the mating surface. Curing takes place at room temperature when the parts are mated. Activator requires well-mated parts (up to 0.010-inch gap). Well-mated parts fixture (achieve handling strength) in less than a minute. See Dymax Technical Bulletin "Guidelines for Activator Curing" for complete instructions for all activators.

Heat may be used after UV cure to cure shadowed areas or after activator cure to accelerate cure. The following guidelines depend on the amount of adhesive:

<u>Minimum Adhesive Temperature</u>	<u>Time</u>
110°C (225°F)	60 Minutes
120°C (250°F)	30 Minutes
150°C (300°F)	15 Minutes

DISPENSING AND HANDLING ADHESIVE

Multi-Cure® 621 Series adhesives may be dispensed with a variety of manual and automatic applicators or other equipment as required. Questions relating to dispensing and curing systems for specific applications should be referred to Dymax Applications Engineering.

Wear impervious gloves and/or barrier cream. Repeated or continuous skin contact with liquid adhesive will cause irritation and should be avoided. Do not wear absorbent gloves. Remove adhesive from skin with soap and water. Never use solvents to remove adhesive from skin or eyes.

STORAGE AND SHELF LIFE

Store material in a cool, dark place when not in use. Do not expose to UV light or sunlight. Material may polymerize upon prolonged exposure to ambient light. Replace lid immediately after use. This material has a 12-month shelf life from date of shipment, unless otherwise specified, when stored between 10°C [50°F] and 32°C [90°F] in the 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; get medical attention. Wash clothing before reuse. Keep out of reach of children. Do not take internally. If swallowed, induce vomiting at once and call a physician. Repeated or continuous skin contact with liquid adhesive will cause irritation and should be avoided. For specific information, refer to the product Material Safety Data Sheet.