

DYMAX CORPORATION

PRELIMINARY PRODUCT DATA SHEET

921 SERIES MULTI-CURE® PHENOLIC & FILLED PLASTICS TO GLASS & METAL

DESCRIPTION

Dymax 921 Series adhesives are high tensile strength, UV-curable resins that are especially well suited when rigid adhesive bonds are desired. Multi-Cure 921 Series was designed to bond a wide variety of substrates including metal, glass, ceramic, and many thermoset plastics. Multi-Cure 921 cures clear and deep. It is a high tensile strength material and is especially well suited for bridge bonding. Multi-Cure 921 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.

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) 921	750 cP (nominal)	ASTM D-1084
921-T	3,500 cP (nominal)	ASTM D-2556
921-VT	11,000 cP (nominal)	ASTM D-2556
921-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	35%	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 Limits (brittle/degrades)	-43° to 177°C (-45°/+350°F)	DSTM D-200

*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

Dymax Corporation - 51 Greenwood Road - Torrington, CT 06790 - Phone: 860-482-1010 - Fax: 860-496-0608
E-mail: info@dymax.com - www.dymax.com

Dymax Europe GmbH - Trakehner Strasse 3 - D-60487 Frankfurt am Main - Germany - Phone: (49) 69-7165-3568
Fax: (49) 69-7185-3830 - E-mail: dymaxinfo@dymax.de

Dymax®, Light-Weld®, Light-Welder®, Multi-Cure®, Ultra Light-Weld®, MEDI-CURE® and MD® are trademarks of Dymax Corporation



DYMAX CORPORATION

PRELIMINARY PRODUCT DATA SHEET

921 Series, 6/4/2002

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 921 Series adhesives are available in various packages such as syringes, cartridges, bottles, and pails. They may be dispensed with a variety of automatic bench-top syringe applicators or other equipment as required. Direct questions relating to dispensing and curing systems for specific applications to the Dymax Technical Center at 860-482-1010.

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. Product has a one-year shelf life when stored below 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 and 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.

© 2002 Dymax Corporation

The data contained in this bulletin is of a general nature and is based on laboratory test conditions. Dymax does not warrant the data contained in this bulletin. Any warranty applicable to the product, its application and use is strictly limited to that contained in Dymax's standard Conditions of Sale. Dymax does not assume responsibility for test or performance results obtained by users. It is the user's responsibility to determine the suitability for the product application and 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 bulletin shall act as a representation that the product use or application will not infringe a patent owned by someone other than Dymax or act as a grant of a license under any Dymax Corporation Patent. Dymax recommends that each user adequately test its proposed use and application before actual repetitive use, using the data contained in this bulletin as a general guide.

Dymax Corporation - 51 Greenwood Road - Torrington, CT 06790 - Phone: 860-482-1010 - Fax: 860-496-0608
E-mail: info@dymax.com - www.dymax.com

Dymax Europe GmbH - Trakehner Strasse 3 - D-60487 Frankfurt am Main - Germany - Phone: (49) 69-7165-3568
Fax: (49) 69-7185-3830 - E-mail: dymaxinfo@dymax.de

Dymax®, Light-Weld®, Light-Welder®, Multi-Cure®, Ultra Light-Weld®, *MEDI-CURE*® and MD® are trademarks of Dymax Corporation

