DYMAX CORPORATION

PRODUCT DATA SHEET

STRUCTURAL PLASTIC BONDER
POLYCARBONATE • PVC • POLYSULFONE
Ultra Light-Weld® 3093 Series

INTRODUCTION

Dymax Ultra Light-Weld® structural adhesives can be cured with UV or visible light. Ultra Light-Weld's faster, deeper cure, increases productivity, lowers assembly costs and enhances worker safety. When cured with Dymax Light Welder® UV lamps, these adhesives provide optimum process flexibility. They allow the user to select the optimum combination of adhesive and cure mechanism to meet individual process and performance requirements.

DESCRIPTION

Recommended especially for polycarbonate, Ultra Light-Weld 3093 Series UV plastic bonders cure in seconds upon exposure to longwave (365 nm) UV light. Tough, environmentally resistant bonds are formed between polycarbonate and a variety of other plastic substrates. Bonds combine flexibility with excellent tensile strength and resistance to thermal shock. Ultra Light-Weld 3093 Series UV adhesives are available in a range of viscosities to suit most applications.

TYPICAL UNCURED PROPERTIES

Solvent Content		None - 100% Reactive Solids	
Chemical Class		Urethane (Meth) Acrylate	
Appearance		Clear/Light Amber Liquid	
Solubility		Alcohol/Chlorinated Solvents/Ketones	
Toxicity		Low	
Refractive Index		1.49 (20°C)	
Density		1.10 g/mL	
Flash Point		95°C (200°F)	
Viscosity	3093	3,100 cP (nominal)	ASTM D-1084
	3093-T	15,000 cP (nominal)	ASTM D-2556
	3093-Gel	31,000 cP (nominal)	ASTM D-2556

TYPICAL CURED PROPERTIES

PHYSICAL		
Durometer Hardness	D80	ASTM D-2240
Tensile at Break	9,500 psi	ASTM D-638
Elongation at Break	5%	ASTM D-638
Modulus of Elasticity	500,000 psi	ASTM D-638
Thermal Limit (brittle/degrades)	-55° to 180°C (-65° to +350°F)	DSTM D-200*
Coefficient of Thermal Expansion	65.0 x 10^{-6}/°C	ASTM D-696
Water Absorption (24 h)	2.6%	ASTM D-570
Boiling Water Absorption (2 h)	4.0%	ASTM D-570
Linear Shrinkage	2.6%	ASTM D-696

*DSTM refers to Dymax Standard Test Method

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3093 series, 09/2003

UV LIGHT CURE DATA - Using 365 nanometer UV light [1]:

	Cure Time (seconds)	Intensity [2] mW/cm^2	Dymax Light-Welder® Lamps
Fixture between glass slides	5	20	2000-EC
Nominal Cure Depth (0.18-inch)	60	20	2000-EC
Tack-Free Surface Cure (0.125-inch bead)	15	150	5000-EC

DISPENSING AND HANDLING ADHESIVE

Dymax 3093 Series 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 three-month 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; 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.

NOTES

[1] Do not recommend lamps that emit high levels of shortwave light

[2] Nominal intensity taken at a pre-determined distance. This reading does not reflect the maximum intensity capabilities emitted from the lamp.

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