

ACRYLIC BONDING ADHESIVE Ultra Light-Weld® 3099 Series

DESCRIPTION

DYMAX Ultra Light-Weld® 3099 Series was designed for rapid, solvent-free bonding of clear or translucent acrylic, polycarbonate, PVC and polyurethane. Ultra Light-Weld® 3099 Series cures in seconds upon exposure to high intensity visible and/or UV light. Its clarity and low viscosity produce clear, bubble-free bond lines. Matching DYMAX lamps produce the optimum balance of UV and visible light for the fastest, deepest cures.

SUBSTRATES BONDED:	• Acrylic • Polycarbonate • Glass
FEATURES:	• Clear Acrylic Bonder

TYPICAL UNCURED PROPERTIES (not specifications)

Solvent Content	None - 100% Reactive Solids		
Chemical Class	Urethane (Meth) Acrylate		
Appearance	Straw/Clear		
Solubility	Alcohols/Chlorinated Solvents/Ketones		
Toxicity	Low		
Flash Point	>95°C (200°F)		
Viscosity (20 rpm)	3099	150 cP (nominal)	ASTM D-1084
	3099-T	10,000 cP	ASTM D-1084
	3099-VT	15,000 cP	ASTM D-1084

TYPICAL CURED PROPERTIES (not specifications)

Durometer Hardness	D75	ASTM D-2240
Tensile at Break	4,000 psi	ASTM D-638
Elongation at Break	95%	ASTM D-638
Modulus of Elasticity	200,000 psi	ASTM D-638
Water Absorption (24 h)	10%	ASTM D-570
Boiling Water Absorption (2 h)	3.9%	ASTM D-570
Thermal Limit (brittle/degrades)	-55° to 180°C (-65°/+350°F)	DSTM D-200*
Linear Shrinkage	0.8%	DSTM D-102*

*DSTM refers to Dymax Standard Test Method

TYPICAL LIGHT CURE DATA

Lamp	5000-EC	BlueWave™ 200	UVC-6 Conveyor*
Light Type	UV/Visible	UV/Visible	UV/Visible
Lamp Type	5" x 5" Flood	3/16" Spot	1" x 6" Focused Beam
Maximum Lamp Intensity @ 365 nm	300 mW/cm ²	19000 mW/cm ²	8000+ mW/cm ²
Intensity @ Time Of Test @ 365 nm	150 mW/cm ²	3700 mW/cm ²	4000 mW/cm ²
Adhesive Absorption Range (nm)	300-500	300-500	300-500
Equipment Output Range (nm)	300-500	300-500	300-500
Cure Speed (Seconds)			
Fixture Between Glass Slides	1	>1	1
Tack Free Surface Cure	10	1	5
Nominal Cure Depth (0.125")	4	2	2
Cure Depth In 1 Minute (Inch)	>0.25	>0.25	>0.25

*Equipped with Fusion "D" Bulb

The required intensity and cure time should be determined during the initial process validation stage. Factors that should be considered during process validation which can affect the adhesive cure rate and depth of cure include but are not limited to: the part geometry, bond-gap size, percent light transmission through the substrate at 365 nm and 436 nm, distance from the light source to the adhesive bond area, UV and visible light intensity and spectral output of the light source, the desired margin of safety to be built into the process and minimum and maximum exposure times.

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DYMAX CORPORATION

PRODUCT DATA SHEET

3099 Series, 1 August, 2006

DISPENSING AND HANDLING ADHESIVE

DYMAX Ultra Light-Weld® 3099 Series adhesives are available in various packages such as syringes, cartridges, bottles, and pails. It 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, should be referred to the DYMAX Technical Center at (860) 482-1010.

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 (32°C) in the original, unopened container.

SAFETY

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.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of contact, immediately wash with soap and water; 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's Material Safety Data Sheet.

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