

DYMAX CORPORATION

PRODUCT DATA SHEET

OP-4-20655 OPTICAL ADHESIVE Fiber Optical Assembly

INTRODUCTION

Dymax high performance optical adhesives cure upon exposure to UV light in seconds and are designed to increase productivity, lower assembly cost and enhance worker safety. These results were obtained using very high speed Dymax spot, beam and flood lamps. Dymax lamps deliver optimum speed and performance for a variety of optical applications.

DESCRIPTION

Ultra Light-Weld OP-4-20655 is a clear, low shrinkage, UV or visible light curing adhesive. OP-4-20655 is very soft, shock absorbing, low modulus adhesive designed for thermal cycling of fragile optical components.

SUBSTRATES BONDED:	• Glass • Ceramics • Plastics • Metal
FEATURES:	• Low T_g (-57°C), Very Soft OO-40 Hardness • Low Stress For Cold Thermal Cycling • Fast, Total Cure In Seconds with UV or Visible Light
APPLICATIONS:	• Bonding and Laminating, Fiber Optic Couplings, Gratings, Lens and Prisms

TYPICAL UNCURED PROPERTIES

Solvent Content	None-100% Reactive Solids	
Composition	Urethane Acrylate	
Appearance	Optical Clear	
Solubility	Alcohols/Ketones/Chlorinated Solvents	
Toxicity	Low	
Flash Point	Over 93°C (>200°F)	
Viscosity	800 cP (nominal)	ASTM D-1084

TYPICAL CURED PROPERTIES

Refractive Index, n_D^{20}	1.480	ASTM D-1218
Durometer Hardness	OO-40	ASTM D-2240
Glass Transition, T_g	-57°C	ASTM E-831
Modulus of Elasticity	200 psi	ASTM D-638
Elongation at Break	250%	ASTM D-638
Tensile at Break	100 psi	ASTM D-638
Tensile Compression Shear, glass to glass	200 psi	DSTM D-250*
Thermal Range (brittle/degrades)	-55° to +180°C (-65 to 350°F)	DSTM D-200
24 hr Water Absorption	0.7%	ASTM D-570
2 hr Boiling Water Absorption	2.4%	ASTM D-570
Linear Shrinkage	1.9%	ASTM D-2566

*DSTM Refers to Dymax Standard Test Method

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

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OP-4-20655, 10/2001

CURE DATA

Lamp	PC-3 Ultra	2000-EC	Bond Box	5000-EC
Light Type	UV/Visible	UV/Visible	UV/Visible	UV/Visible
Lamp Type	3/16" Spot	8" x 8" Flood	8" Rotating stage	5" x 5" Flood
Maximum Lamp Intensity @ 365 nm	4,000 mW/cm ²	50 mW/cm ²	150 mW/cm ²	300 mW/cm ²
Intensity @ time of test @ 365 nm	2,500 mW/cm ²	20 mW/cm ²	50 mW/cm ²	150 mW/cm ²
Adhesive Absorption Range (nm)	300-400	300-400	300-400	300-400
Equipment Output Range (nm)	300-500	300-500	300-500	300-500
Typical Cure speed (seconds)	2	2	1	1
Fixture between glass slide				
Cure depth in 1 minute (1")	0.125"	0.125"	0.125"	0.750"

STORAGE AND SHELF LIFE

Store material in cool, dark place when not in use. Do not expose to UV light or sunlight. Material may polymerize upon prolonged exposure to ambient light. This product has a one year shelf life when stored below 90°F in the original, unopened container.

DISPENSING & HANDLING ADHESIVE

Dymax OP-4-20655 adhesive is available in 3-mL, 5-mL, 10-mL and 30-mL manual or machine ready syringes and 170-mL cartridges. Machine ready syringes may be dispensed from a variety of automatic bench-top syringe applicators or other equipment as required. Any questions relating to dispensing and curing systems for specific applications should be referred to the Dymax Technical Center at (860) 482-1010.

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. Dymax OP-4-20632 is a developmental product and all properties are not known. 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. For specific information, refer to the Material Safety Data Sheet before use.

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Dymax Corporation - 51 Greenwoods Road - Torrington, CT 06790 - Phone: 860-482-1010 - Fax: 860-496-0608
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