

OP-54

Lens/Fiber Optics

INTRODUCTION

Dymax high-performance optical adhesives cure upon exposure to UV or visible light in seconds. Because of their solvent-free and rapid-cure features, they increase productivity, lower assembly cost, and enhance worker safety. When cured with Dymax spot, beam or flood lamps, they deliver optimum speed and performance for a variety of optical applications.

DESCRIPTION

Lower in viscosity than OP-52, fiber bundles can be unitized in a few seconds using Light Weld[®] OP-54 instead of the hours frequently required using other types of adhesives. Light Weld OP-54 may also be used as a clear potting adhesive, curing to depths of 0.25 inches or more, depending on the light source used.

SUBSTRATES BONDED: • Borosilicate Glass • Soda Lime Glass • ABS • Filled Nylon • Metal

FEATURES:

- High-Strength Positioning Adhesive • Low Outgassing • Low Shrinkage
- Low Moisture Absorption • Heat Cycle Stable
- Non Movement During Cure or Thermal Excursions • Complete Cure in Seconds

APPLICATIONS: • Fiber Optics Splicing • Pig Tailing • Lens Bonding • Joining • Mounting Fiber Optics

TYPICAL UNCURED PROPERTIES

Solvent Content	None - 100% Solids	
Composition	Urethane Acrylate	
Appearance	Clear/Straw Liquid	
Solubility	Alcohols/Ketones/Chlorinated Solvents	
Flash Point	>79°C (175°F)	
Viscosity	105 cP (nominal)	ASTM D-1084

TYPICAL CURED PROPERTIES

Durometer Hardness	D85	ASTM D-2240
Tensile at Break	8,700 psi	ASTM D-638
Elongation at Break	6%	ASTM D-638
Modulus of Elasticity	52,000 psi	ASTM D638
Glass Transition, T _g	75°C	ASTM E-831
CTE α_1 (below T _g)	58 x 10 ⁻⁶ in/in/°C	ASTM E-831
CTE α_2 (above T _g)	162 x 10 ⁻⁶ in/in/°C	ASTM E-831
CTE (-50°C to 200°C)	226 x 10 ⁻⁶ in/in/°C	ASTM E-831
Thermal Range (brittle/degrades)	-30° to +125°C (-20° to +250°F)	DSTM D-200*
24 hr Water Absorption	0.5%	ASTM D-570
Linear Shrinkage	1.8 %	ASTM D-2566

*DSTM Refers to Dymax Standard Test Method

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Technical Data Collection Prior to 2003

Rev. 08/22/2012

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CURE DATA

Lamp	2000-EC	5000-EC	PC-3	3010-EC
Light Type	UV	UV	UV	UV
Lamp Type	Flood	Flood	Spot	Spot
Intensity (mW/cm ²) at Peak Wavelength	50 @ 365 nm	150 @ 365 nm	1000 @ 365 nm	1800 @ 365 nm
Wavelength (nm) Working Range	300-500	300-500	300-500	300-500
Cure Speed (sec)				
Between Glass	1	1	1	1
Bead	<10	4	1	1

OPTICAL PROPERTIES

Refractive Index (25°C) Uncured

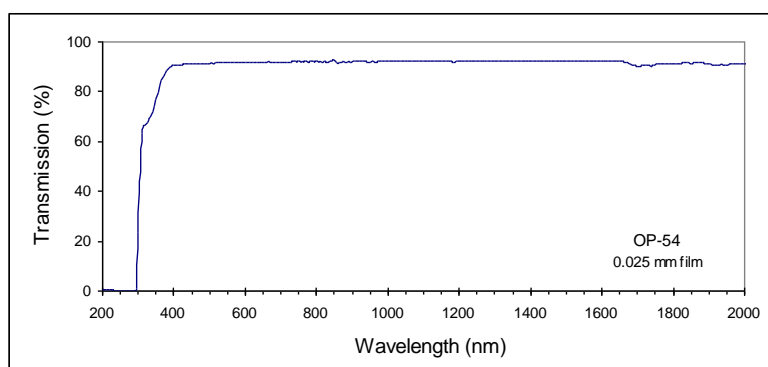
1.489

ASTM D-1218

Refractive Index (25°C) Cured

1.506

ASTM D-1218



DISPENSING AND HANDLING ADHESIVE

This material 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 Application Engineering.

STORAGE AND SHELF LIFE

Store the material in a cool, dark place when not in use. Do not expose to light. This product may polymerize upon prolonged exposure to ambient and artificial light. Keep covered when not in use. This material has a minimum 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.

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 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.