3M™ Light Cure Adhesive LC-1112

Product Description

3M™ Light Cure Adhesive LC-1112 is a one-component, medium viscosity adhesive that cures rapidly when exposed to UV light to form a semi-rigid bond.

Features

- Fast curing (in seconds)
- Cures to tack-free surface
- Cures with UV light
- Improved adhesion to glass

Applications

General Purpose Assembly

- Potting
- Rigidizing
- Lamination
- Wire tacking
- Encapsulating
- Bonding temperature sensitive plastics

Suggested Light Source Wavelength Ranges

UV Light: 250 - 380 nanometers

Typical Uncured Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Chemistry	Acrylate
Color	Colorless
Specific Gravity (g/cc)	1.14
Viscosity (@ 25°C)[1]	12,000 cps

[1]TA Instruments AR2000 Rheometer, 40mm, 1° cone, shear rate 1 sec^{-1}.

Typical Cured Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Physical

Hardness, Shore D (ASTM 2240)	83
Hardness, Shore A_2 (ASTM 2240)	–
Tensile Strength (psi) (ASTM D638)	4600
Elongation (%) (ASTM D638)	17

Shear Strength (psi) (ASTM D1002)

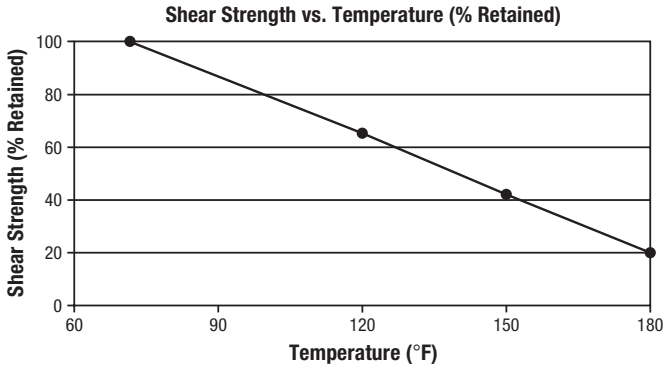
Polycarbonate / Polycarbonate	410
Polycarbonate / GFRP	420
Acrylic / Acrylic	450
Polycarbonate / ABS	840
Polycarbonate / Cold Rolled Steel	730
Polycarbonate / FRP	360
Polycarbonate / Aluminum	850

Typical Cured Properties (continued)

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Shear Strength vs. Temperature

Temperature °F	(°C)	% Retained
70	(21)	100
120	(49)	64
150	(66)	42
180	(82)	20

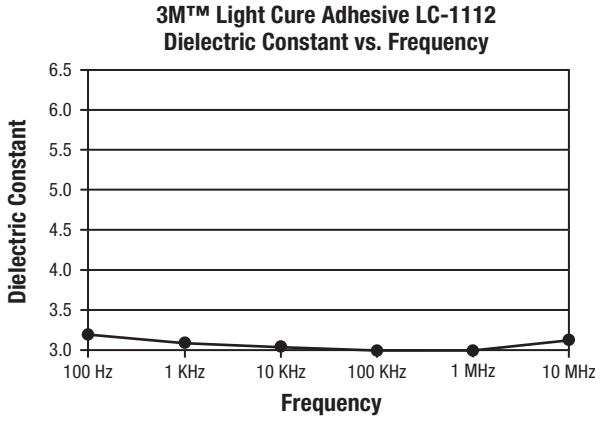


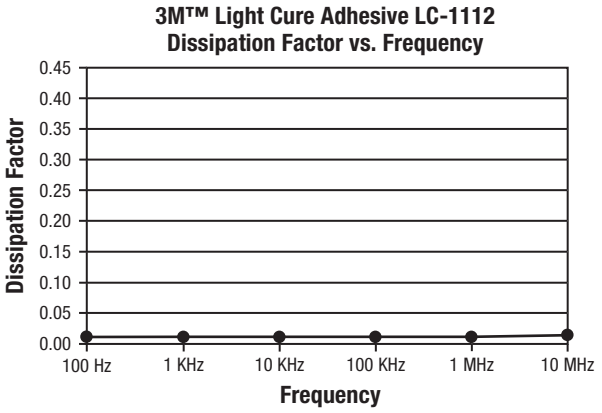
Thermal

Glass Transition Temperature (Tg) °F (°C)	73 (23)	
Coefficient of Thermal Expansion CTE (x 10^{-6} unit/unit/°C)	Below Tg 60	Above Tg 221

Electrical

Volume Resistivity (Ohm-cm) (ASTM D257)	1.4 x 10^{16}
Dielectric Strength (Volts/mil) (ASTM D149)	3450
Dielectric Constant (1 Mhz) (ASTM D150)	3.0
Dissipation Factor (1 Mhz) (ASTM D150)	0.013





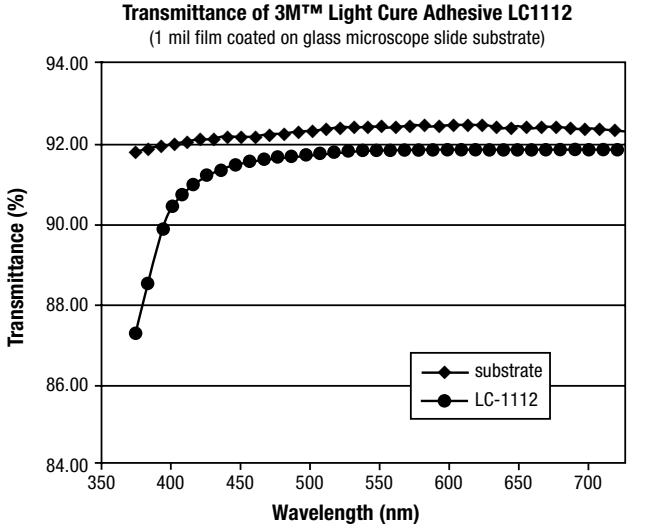
Chemical

Water Absorption (%) (ASTM D570)	24 hr RT 0.21	2 hr boiling water 2.22
Solvent Resistance	IPA	MEK
1 hour	A	A
24 hours	A	C
1 week	A	C
30 days	A	C

A = Unaffected, no change to color or surface texture.
B = Slight attack, noticeable swelling of surface, softness.
C = Moderate / severe attack, extreme swelling of surface.

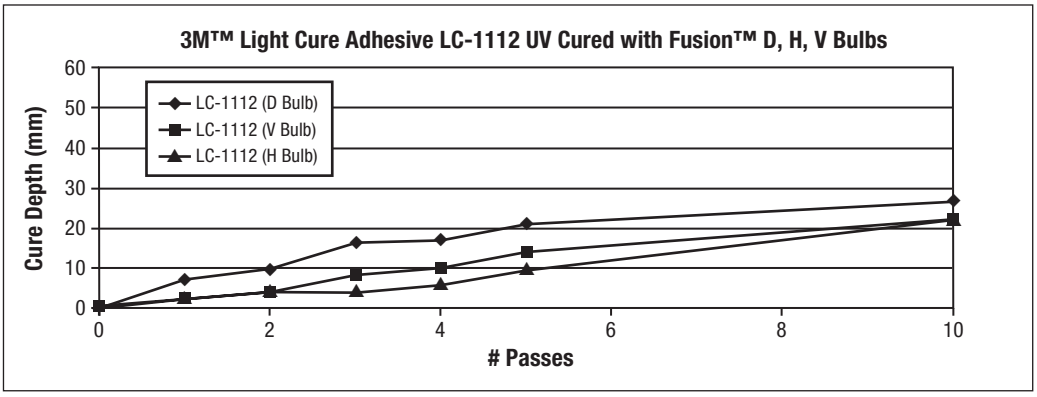
Optical

Refractive Index	1.56		
Color	Colorless		
CIE Color Analysis L*A*B*	L*	A*	B*
1 mil coating on glass substrate	96.73	-0.08	0.31
(glass substrate reference)	(96.98)	(-0.03)	(0.15)
Haze (%) (ASTM D1003)	< 1%		
Transmittance			

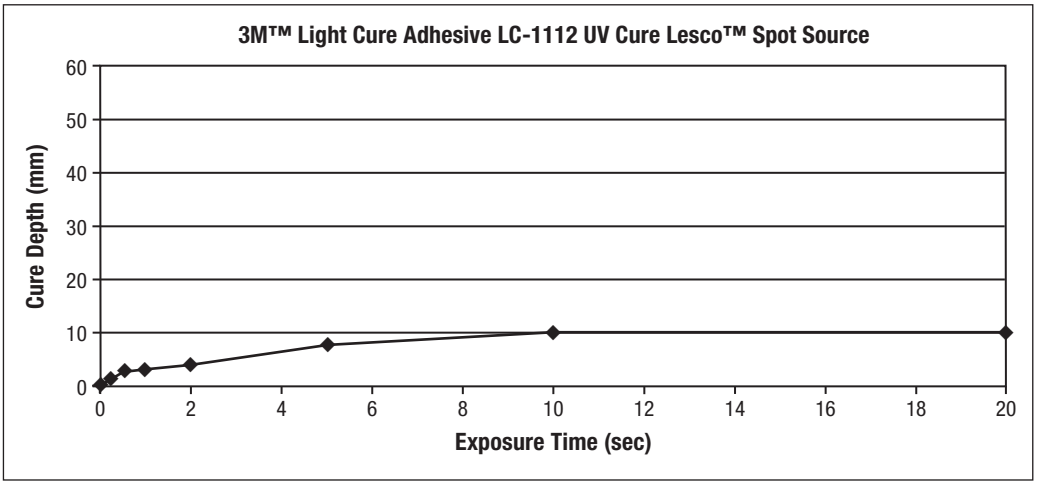


Curing Performance

Cure Depth vs. Time



Cured with Fusion™ F300 conveyor lamp system, conveyor speed = 25 fpm, 1 pass = 0.28 sec.
D bulb, iron-doped mercury, 3.366 W/cm^2 UVA intensity.
H bulb, mercury, 1.504 W/cm^2 UVA intensity.
V bulb, gallium-doped mercury, 1.223 UVA intensity.



Cured with Lesco™ SuperSpot max UV spot curing system, 320-390 nm wavelength, 20 W/cm^2 intensity, 1" above sample.

Directions for Use

Dispense adhesive from syringe, fixture parts to be bonded, expose to suitable light source. Degree of cure will depend on exposure time, intensity and spectral distribution of the light source, distance of adhesive from the light source, and light transmittance of the substrates. Cure of surfaces exposed to oxygen may be inhibited resulting in a slightly tacky surface. Curing with high intensity short-wave UV light or covering the surface to exclude oxygen is suggested for a tack-free surface.

Storage

This product is light sensitive. Minimize exposure of adhesive to daylight, UV light and artificial light during storage and handling. Store in original container. Store product at 60-80°F (16-27°C) or refrigerate for maximum shelf life.

Shelf Life

6 months when stored at 60-80°F (16-27°C),
12 months when refrigerated at 40°F (4°C).

Regulatory

Customer must consult the MSDS for this product prior to its use. For MSDS or regulatory information about this product, refer to our website at 3M.com.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634.
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