Technical Data Sheet

LOCTITE® EA E-30CL™

Known as Hysol® E-30CL™
January 2018

PRODUCT DESCRIPTION

LOCTITE® EA E-30CL™ provides the following product characteristics:

Technology	Epoxy
Chemical Type (Resin)	Epoxy
Chemical Type (Hardener)	Amine
Appearance (Resin)	Clear, colorless to slight yellowish liquid[LMS]
Appearance (Hardener)	Clear, colorless to slight yellowish liquid[LMS]
Appearance (Mixture)	Colorless to slightly yellowish solid[LMS]
Components	Two components - requires mixing
Mix Ratio, (by volume) Resin : Hardener	2 : 1
Mix Ratio, by weight - Resin : Hardener	100 : 46
Cure	Room temperature cure after mixing
Application	Potting and Bonding

LOCTITE® EA E-30CL™ is a low viscosity, industrial grade epoxy adhesive. Once mixed, the two component epoxy cures at room temperature with minimal shrinkage to form an ultra clear adhesive bondline with excellent impact resistance. The fully cured epoxy is resistant to a wide range of chemicals and solvents and has excellent dimensional stability over a wide temperature range. Typical applications include bonding, small potting, staking and laminating applications where optical clarity and excellent structural, mechanical and electrical insulating properties are required. LOCTITE® EA E-30CL™ bonds most materials including glass, optical fibers, ceramics, metals, and many rigid plastics.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin:

Specific Gravity @ 25 °C	1.1
Flash Point - See SDS	
Viscosity, Brookfield - RVT,25°C,mPa·s (cP):	
Spindle 6, speed 20 rpm	10,500

Hardener:

Specific Gravity @ 25 °C	1.0
Flash Point - See SDS	
Viscosity, Brookfield - RVT,25°C,mPa·s (cP):	
Spindle 5, speed 20 rpm	2,250

Mixed Properties:

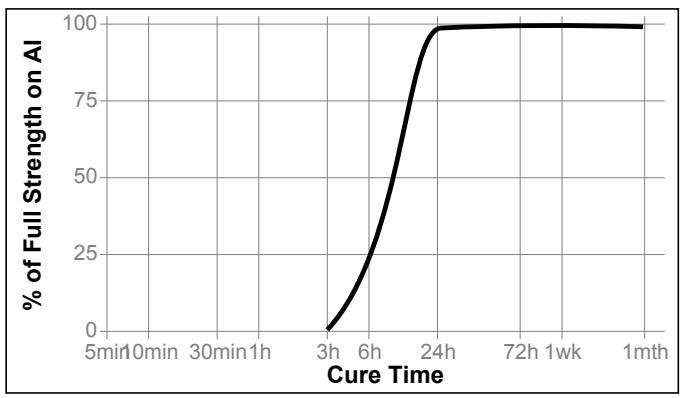
Specific Gravity @ 25 °C	1.07

TYPICAL CURING PERFORMANCE

Tack Free Time @ 25 °C,(low humidity), minutes	160
Working Time @ 25 °C, minutes	30
Pot life @ 100°C, 250 grams, seconds	90 to 150[LMS]

Cure Speed vs. Time

The graph below shows shear strength developed with time on abraded, acid etched aluminum lapshears @ 25 °C with an average bondline gap of 0.1 to 0.2 mm and tested according to ISO 4587.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 25 °C for 5days

Physical Properties:

Shore Hardness, ISO 868, Durometer D		80 to 90[LMS]
Glass Transition Temperature, ASTM E 1640, °C		61
Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:		
Pre Tg		67×10^{-06}
Post Tg		178×10^{-06}
Volume Shrinkage, ISO 1675 %		4.3
Linear Shrinkage, in/in ISO 1675		1.45
Elongation, ISO 527-2, %		8
Tensile Strength, ISO 527-2	N/mm²	55
	(psi)	(8,000)

Electrical Properties:

Dielectric Breakdown Strength, IEC 60243-1, kV/mm	20

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured	for 5days @	22°C

Lap Shear Strength :

Steel (grit blasted)	N/mm²	21
	(psi)	(3,100)
Aluminum (acid etched & abraded)	N/mm²	≥6.9[LMS]
	(psi)	(≥1,000)
Aluminum (anodised)	N/mm²	21
	(psi)	(3,070)
Stainless steel, 0.13 mm gap	N/mm²	14
	(psi)	(1,970)
Polycarbonate 0.13 mm gap	N/mm²	13
	(psi)	(1,950)
Wood (Fir) 0.13 mm gap	N/mm²	12
	(psi)	(1,750)
Nylon	N/mm²	2.4
	(psi)	(350)

Block Shear Strength, ISO 13445:

PVC	N/mm²	7.0
	(psi)	(1,010)
ABS	N/mm²	8.4
	(psi)	(1,220)
Epoxy	N/mm²	21
	(psi)	(2,980)
Acrylic	N/mm²	1.2
	(psi)	(180)
Glass	N/mm²	24
	(psi)	(3,540)

TYPICAL ENVIRONMENTAL RESISTANCE

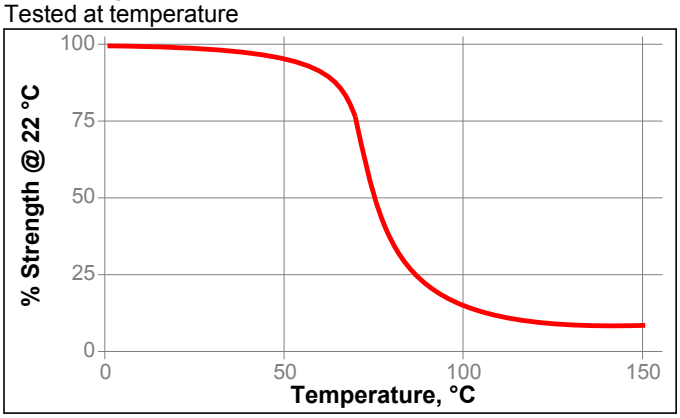
Cured for 12 hours @ 65°C followed by 4 hours @ 22 °C

Lap Shear Strength :

Aluminum (acid etched & abraded)

Hot Strength

Tested at temperature



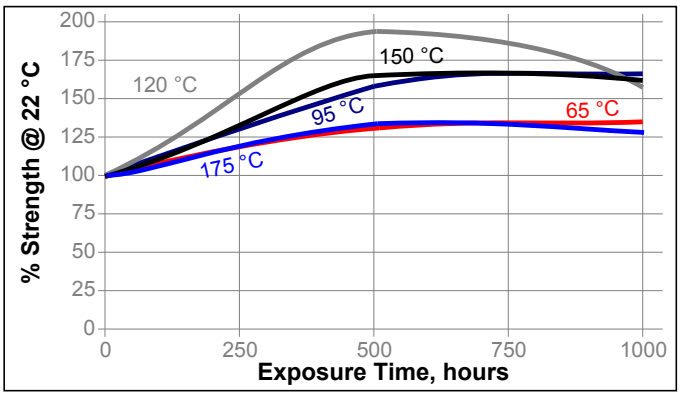
Cured for 5days @ 22°C

Lap Shear Strength :

Steel

Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C.

		% of initial strength	
Environment	**°C**	**500 h**	**1000 h**
Air	87	160	150
Motor oil	87	160	145
Unleaded gasoline	87	125	110
Water/glycol 50/50	87	145	140
Salt fog	22	75	90
95% RH	38	110	120
Condensing Humidity	49	95	95
Water	22	105	90
Acetone	22	105	110
Isopropanol	22	125	125

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use

1. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
2. **Dual Cartridges:** To use simply insert the cartridge into the application gun and start the plunger into the cylinders using light pressure on the trigger. Next, remove the cartridge cap and expel a small amount of adhesive to be sure both sides are flowing evenly and freely. If automatic mixing of resin and hardener is desired, attach the mixing nozzle to the end of the cartridge and begin dispensing the adhesive. **Bulk Containers:** Utilize volumetric dispensing system to ensure proper mix ratio and utilize mix nozzle to obtain adequate mixing.
3. Allow 24 hours at 22 °C for cure. Heat up to 93°C will speed curing. Maximum chemical resistance is achieved after seven days at 22°C.
4. Mixed product is free flowing and self leveling. Potting voids by moving the discharge point from the bottom up will give the best results.
5. Keep parts from moving during cure. Parts must be positioned to contain the product inside the potting voids during the cure.
6. Excessive uncured adhesive can be cleaned up with ketone type solvents.

Loctite Material Specification[LMS]

LMS dated July 03, 2001 (Resin) and LMS dated July 23, 2001 (Hardener). Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Loctite Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel representative.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

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