

LOCTITE® EA 0151

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Description

LOCTITE® EA 0151 is a clear two-component epoxy having optical clarity when used in small quantities LOCTITE® EA 0151 is easy to mix and has a long pot life.

Recommended Substrates

Glass, Metals, Circuit Boards, Fiber Optics and many Plastics.

Features

- Clear color
- RT or Heat Cure
- Bonds many materials
- Easy to mix
- 100% Solids
- Thixotropic Paste

Typical properties of uncured material

Typical Uncured Properties	PART A	PART B	Mixed
Pot life @ 77°F, 100 grams mins			60
Color	Milky white	Amber	Clear
Viscosity, cP	40,000 to 100,000	20,000 to 100,000	
Specific Gravity	1.13	0.98	
Mix Ratio			
By weight	100	33	
By volume	2.7	1	

Typical Properties	Typical value
Tensile strength, psi, ASTM D 638	--
Elongation, ASTM D638, %	2.4
Tg, °F	136
CTE, ASTM D 696, in/in/ °C	47×10^{-6}
Thermal conductivity, cal x cm/cm ² x secs x , °C	5.6×10^{-4}
Shrinkage, %	<0.3
Hardness, shore D	85

Electrical properties	Typical Value
Dielectric Strength , ASTM D149, V/mil	1080
Dielectric Constant, MIL 1-16923. K 1kHz	3.88
Dissipation factor, ASTM D 150 1kHz	5.3×10^{-4}
Volume resistivity, ASTM D 257, ohm/cm	$1.26 \times 10^{+15}$
Surface resistivity, ASTM D 257	

Shear strength, psi, ASTM D 1002 Etched Aluminum		
Cure Schedule	Test Temp °F	Typical Value
3 Days @ 77 °F	-67	1600
	77	1850
	180	400
2 hours @ 140 °F	-67	2700
	77	3000
	180	600
1 hour @ 180 °F	-67	2700
	77	3000
	180	500

Outgassing Performance	NASA 1124
Total Mass Loss, %	1.51
Collected volatile condensable material, %	0.01

Handling

Mixing

This product requires mixing two components together just prior to application. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but they should be close to room temperature.

Application

Mixing - Bulk

Combine Part A (resin) and Part B (hardener) in the correct ratio and mix thoroughly until the color and consistency are uniform. EPOXI-PATCH® Tube Kits have been designed so that squeezing **EQUAL LENGTH BEADS of Part A & Part B** will give proper ratio. Heat buildup during or after mixing is normal. Ratios given above can be used for measuring larger amounts. Mixing the adhesive just prior to use is recommended. Do not mix quantities greater than two pounds as dangerous heat buildup can occur causing uncontrolled decomposition of the mixed adhesive. Mixing smaller quantities will minimize the heat buildup.

Mixing - Cartridges

Place cartridge in proper dispenser. To begin using a new cartridge, remove cartridge cap and dispense a small amount of adhesive, making sure both Parts A & B are extruding. Attach nozzle and dispense approximately 1-2" before applying onto the part to be bonded. Partially used cartridges can be stored with the mixing nozzle attached. To reuse, remove and discard the old nozzle, attach the new nozzle, and begin dispensing.

****Note**** Mix cartridge dispenses adhesive in a 2:1 ratio. Tests show no significant effect on bond performance compared to 2.7:1 ratio.

Application

Bonding surfaces should be clean and dry. Once the adhesive is applied, the bonded parts should be held in contact until the part has developed handling strength. It is not necessary to clamp the parts unless movement during cure is likely.

Cure

Complete cure is obtained after 3 days at room temperature. After 24 hours, approximately 90% of full cure properties are attained. Hysol 0151 will achieve handling strength in 6-8 hours at 77°F (note: this can vary with different bond configurations). Hysol 0151 can also be completely cured with heat such as: 2 hours at 140°F; 1 hour at 180°F or 30 minutes at 250°F. Heat cures can be modified to achieve a desired degree of cure from handling strength to full cure.

Clean up

It is important to remove excess adhesive from the work area and application equipment before it hardens. Many common solvents and citrus cleaners are suitable for removing uncured adhesive. Consult with your supplier's information pertaining to the safe and proper use of solvents.

Storage

Store product in unopened container in a cool dry location. Ideal conditions are within the range 8 to 21 degrees C (46 to 70 degrees F) and are recommended for long term storage. Exposure to higher temperatures (greater than 28 degrees C) for prolonged periods should be avoided as extended exposure to warm conditions can adversely affect product properties. For further specific shelf life information, contact your local Technical Service Center.

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