

EP30LV-1 Master Bond Polymer System

Two component epoxy system for high performance bonding, coating, sealing and casting

Key Features

- ✓ Very low viscosity
- ✓ Outstanding optical clarity
- ✓ Exceptional physical strength
- ✓ Electrically insulative
- ✓ Dimensionally stable
- ✓ Resistant to a wide variety of chemicals

Product Description

Master Bond Polymer System EP30LV-1 is an ultra low viscosity, two component epoxy system for high performance bonding, coating, sealing, potting and encapsulation. It readily cures at room temperature or more rapidly at elevated temperatures, and has a five to one mix ratio by weight. This adhesive is 100% reactive and does not contain any solvents or diluents. EP30LV-1 has outstanding physical strength properties along with excellent electrical insulation characteristics. This highly dimensionally stable system has very low shrinkage after cure, less than 0.001 in./in. EP30LV-1 possesses very good optical clarity along with superior light transmission when compared to many other epoxies. This system bonds well to a variety of substrates including metals, glass, and ceramics, as well as many plastics and rubber materials. EP30LV-1 forms high

strength, rigid bonds that resist chemicals including water, oil, acids, bases and many solvents. Its low viscosity enables this system to be used for special gap filling applications where space is limited. Master Bond Polymer System EP30LV-1 is widely used in electronic, electrical, optical, chemical and related industries.

Product Advantages

- Convenient mixing: easy to use mix ratio—five to one by weight
- Easy application: only contact pressure required while curing; adhesive spreads readily
- Versatile cure schedules: ambient temperature cures or faster at higher temperatures
- Superb ability to fill smaller gaps
- High bond strength to a wide variety of substrates

Typical Properties

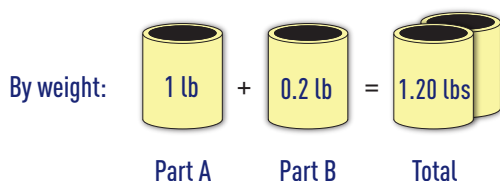
Bond shear strength, aluminum to aluminum, 75°F	>3,000 psi
Hardness, 75°F	>75 Shore D
Volume resistivity, 75°F	>10 ¹⁵ ohm-cm
Tensile strength, 75°F	>9,500 psi
Tensile modulus, 75°F	>400,000 psi
Dielectric strength, 75°F (1/8 inch thick test specimen)	>440 volts/mil
Dielectric constant, 75°F	
60 Hz	3.55
1 KHz	3.35
Dissipation factor, 75°F	
60 Hz	0.005
1 KHz	0.006
Index of refraction, 75°F	1.57
Service temperature range	-60°F to +250°F [-51°C to +121°C]

Mixing and Curing

Mixing ratio, Parts A to B	5:1 by weight
Viscosity of Part A, 75°F	200-600 cps
Viscosity of Part B, 75°F	280-500 cps
Working life after mixing, 75°F; 100 gram batch	40-60 minutes
Cure schedule options	
75°F	24-48 hours
200°F	2-3 hours
Optimal cure schedule	Overnight at room temperature followed by 1-2 hours at 150-200°F
Shelf life at 75°F, in original unopened containers	1 year in cans, 6 months in syringes

Preparation of Adhesive

Master Bond Polymer System EP30LV-1 is prepared by thoroughly mixing Part A with Part B in a five to one mix ratio by weight.



Mixing should be done slowly to avoid entrapping air. The low viscosity of the two components makes mixing very easy. The working life of a mixed 100 gram batch is approximately 40-60 minutes. It can be substantially lengthened by using shallower mixing vessels or mixing smaller size batches.

Preparation of Bonding Surfaces

All bonding surfaces should be carefully cleaned, degreased and dried to obtain maximum bond strength. Also, when bonding to certain metal surfaces, vulcanized rubbers, etc., chemical etching should be employed for optimal adhesion and environmental durability. Non-porous surfaces should be roughened with sandpaper or emery paper for hard materials.

Adhesive Application

Master Bond Polymer System EP30LV-1 can be conveniently applied with a brush or paint roller. Enough mixed adhesive should be applied to obtain an adhesive bond line thickness of 3-5 mils. Porous surfaces may require somewhat more adhesive to fill the voids than non-porous ones. Thicker glue lines do not increase the strength of a joint but do not necessarily give lower results as the EP30LV-1 adhesive system does not contain any volatiles. The parts to be bonded should then be pressed together with just enough pressure to maintain intimate contact during

cure. Care should be taken not to squeeze out adhesive during fixturing. When potting and encapsulating, it may be necessary to vacuum degas in order to remove the relatively few air bubbles that may have been formed when mixing.

Cure

Master Bond Polymer System EP30LV-1 can be cured at room temperature in 24-48 hours or faster cures can be realized at elevated temperatures, e.g., 2-3 hours at 200°F. To optimize the properties, the recommended cure schedule is overnight at room temperature, followed by 1-2 hours at 150-200°F. Remove any excess adhesive promptly before it hardens with a spatula. Then wipe with a rag and solvent such as MEK, toluene or acetone. The thinner the bond line or section thickness, the slower the rate of cure.

Packaging

Product is available in:

- 1/2 Pint kits
- Pint kits
- Quart kits
- Gallon kits
- 5 Gallon kits



Specialty packaging is also available in premixed & frozen syringes.

Handling and Storage

All epoxy resins should be used with good ventilation and skin contact should be avoided. For safe handling details, please consult the product SDS. Optimum storage is at or below 75°F in closed containers. No special storage conditions are necessary. Containers should, however, be kept closed when not in use to avoid contamination. Cleanup of spills and equipment is readily achieved with aromatic or ketone solvents employing proper precautions of ventilation and flammability.

Certifications



Not to Be Used for Specification Purposes

The values contained herein are considered typical properties only and are not intended to be used as specification limits. For assistance in preparing specifications, please contact Master Bond technical support for further details.

Notice

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