

Leepoxy Plastics, Inc.

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TECHNICAL BULLETIN LEECURE B-612

Description

LEECURE B-612 a reactive member of Leepoxy's proprietary liquid BF₃ epoxy curing agent family. When mixed with standard epoxy Bisphenol A resin, it provides a very fast tack-free cure at room temperature, assuming little or no heat sink effect. Its reactivity makes it attractive as a fast-set adhesive for bonding or tacking steel, aluminum, primed plastics, and a variety of other clean, dry materials. If necessary, cure can be expedited by raising the cure temperature above 25°C, up to 65°C.

LEECURE B-612 is not recommended for assembly environments that do not allow a tack-free reaction within 3 minutes. After 3 minutes of exposure to humidity, it is possible that uncured epoxy may not cure to full strength even if subsequently heated. LEECURE B-612 can be dispensed via meter-mix equipment or dual cartridge guns utilizing small static mixers. It is appropriate for bonding applications requiring a small mass and high throughput

TYPICAL PROPERTIES	
Appearance	Brown liquid
Viscosity @ 25°C, cps	17,000
Density, pounds/gallon	9.3
Shelf life, months	12

Handling and Mixing

Keep LEECURE B-612 containers tightly sealed at all times. Use of dry nitrogen is recommended to protect partial containers from moisture contamination. The epoxy resin, fillers, and any other ingredients to be mixed should be moisture-free as well. Avoid alkaline fillers such as calcium carbonate. Fillers such as silica, barytes, glass, graphite, clays, and others that have a pH of 7 or lower are recommended. Mix very thoroughly in a dry mix vessel. No special equipment is necessary, but entrapment of excessive air bubbles should be avoided. Exposure to humidity in the air should be minimized from the time of mix until the product is ultimately cured because prolonged exposure to humidity may harm the reactivity, physical properties, and surface appearance of a LEECURE B-612 cured system.

TYPICAL HANDLING PROPERTIES	
Mix Ratio ¹ , phr	8 – 12
Gel time @ 25°C, 11 g, seconds	75
Work Life @ 25°C, static mixer, minutes	3
Cure Time @ 25°C, 3/16 inch bead, min.	6

¹ Mix ratio with Bisphenol A Resin (EEW=189)

Curing Conditions

Epoxy compounds containing LEECURE B-612 should be cured so as to control the effects of the exothermic reaction. The optimum time and temperature will depend on the particular formulation and the mass of compound. Longer cure schedules may be needed when curing thin sections or where the epoxy is adjacent to a mass of material that will act as a heat sink. The recommended minimum bondline cure temperature is 25°C. Generally, the higher the cure temperature, the better the heat resistance and physical properties of the cured systems.

Additives, modifiers, and diluents used in formulating epoxy compounds incorporating LEECURE B-612 may have a marked effect not only on the cure rate but also the final properties of the cured system. Diluents, fillers, and flexibilizers will generally increase pot life, gel time, and cure time.

TYPICAL PERFORMANCE	
Tensile Strength, psi	1,000
Tensile Elongation, %	4.0
Hardness, Shore D	90
Heat Deflection Temperature, °C	75

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