Leepoxy Plastics, Inc.

3706 W. Ferguson Rd., Fort Wayne, IN 46809
Phone (260) 747-7411 Fax: (260) 747-7413

TECHNICAL BULLETIN
LEECURE B-110

Description

LEECURE B-110 a moderately reactive member of Leepoxy's proprietary liquid BF_3 epoxy curing agent family. When mixed with standard epoxy Bisphenol A resin, LEECURE B-110 provides a rapid cure at modest temperatures, assuming little or no heat sink effect. LEECURE B-110's balance of pot life and reactivity makes it practical to dispense via meter-mix equipment or dual cartridge guns while maintaining high production throughput.

LEECURE B-110 is compatible with Bisphenol A, Bisphenol F, flexible, cycloaliphatic, novolac, and other multifunctional epoxy resins. Cured systems offer exceptional chemical and heat resistance, tensile strength and electrical properties. The excellent physical properties of LEECURE B-110 cured systems can be enhanced through the judicious choice of appropriate dry non-alkaline fillers. In unfilled systems, fracture, impact, and thermal shock resistance can be significantly improved through the incorporation of flexibilized resins or toughening agents. Leepoxy's proprietary 23-135 CTBN adduct is one such toughening agent.

TYPICAL PROPERTIES	
Appearance	Brown liquid
Viscosity @ 25ºC, cps	14,000
Density, pounds/gallon	9.3
Shelf life, months	12

Handling and Mixing

Keep LEECURE B-110 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 heat cured because prolonged exposure to humidity may harm the reactivity, physical properties, and surface appearance of a LEECURE B-110 cured system.

TYPICAL HANDLING PROPERTIES	
Mix Ratio[1], phr	8 – 12
Gel time @ 80°C, 10 g, minutes	5
Work Life @ 25°C, hours	6
Cure Time @ 100°C, 3/16 inch bead,	
Green Strength, minutes	3 - 5
Full Cure, minutes	10

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

TYPICAL PERFORMANCE	
Glass Transition Temperature, °C	108
Tensile Strength, psi	10,600
Tensile Modulus, psi	480,000
Tensile Elongation, %	4.0
Hardness, Shore D	90
Dielectric Constant, 1 mHz @ 25°C	3.9
Dissipation Factor, 1 mHz @ 25°C	0.018

Curing Conditions

Epoxy compounds containing LEECURE B-110 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 100°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-110 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.