

Leepoxy Plastics, Inc.

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

TECHNICAL BULLETIN LEECURE B-170

Description

LEECURE B-170 is a moderately reactive member of Leepoxy's proprietary liquid BF₃ epoxy curing agent family. When mixed with standard epoxy Bisphenol A resin, it provides a 5 – 8 minute cure at 65°C, assuming little or no heat sink effect. Its pot life is sufficiently long to allow for ease of use in both dynamic and static mixing applications.

For higher performance applications, LEECURE B-170 can be used with epoxy novolac, cycloaliphatic and flexibilized epoxy resins. Cured systems offer exceptional chemical and heat resistance, tensile strength and electrical properties.

TYPICAL PROPERTIES	
Appearance	Brown liquid
Viscosity @ 25°C, cps	11,800
Density, pounds/gallon	9.3
Shelf life, months	12

Handling and Mixing

Keep LEECURE B-170 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-170 cured system.

TYPICAL HANDLING PROPERTIES	
Mix Ratio ¹ , phr	8 – 12
Gel time @ 50°C, minutes	13.5
@ 65°C, minutes	5
@ 80°C, minutes	2.5
Work Life @ 25°C, hours	2
Cure Time @ 65°C, green strength, min	3 – 5
Cure Time @ 65°C, full strength, min	8

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

Curing Conditions

Epoxy compounds containing LEECURE B-170 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 65°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-170 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	10,600
Tensile Modulus, psi	4.0×10^5
Tensile Elongation, %	4.0
Hardness, Shore D	90
Dielectric Constant, 1 mHz @ 25°C	3.9
Dissipation Factor, 1 mHz @ 25°C	0.018
Volume Resistivity, ohm-cm @ 25°C	5×10^{15}

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