

Product
Bulletin

E40-414

Highest Heat Resistant, Aluminum Filled, Epoxy Casting Resin

GENERAL DESCRIPTION

E40-414 is a very rigid, aluminum filled, epoxy resin system that offers optimum heat resistance with continuous operation to 475°F and intermittent to 525°F. This high performance casting resin exhibits very high heat distortion properties without any deflection, distortion or flexing at elevated temperatures. The extremely high heat resistance coupled with outstanding dimensional stability makes E40-414 ideally suited as a casting for thin walls or as a surface coating where high heat resistance without flexing or distortion is required.

E40-414 is designed for casting synthetic metal molds, dies, and tools. It is a liquid epoxy, aluminum alloy, polymer that can replace metal block tooling and machining at a fraction of the cost. Very low shrinkage ensures precise detail duplication for a wide variety of general polymer alloy tool applications.

E40-414 is easily machined – castings can be drilled, tapped, or turned on a lathe. Secondary finishing operations, such as grinding, sanding, or polishing are also easily accomplished.

E40-414 can be used in many applications, such as vacuum form molds, dies, assembly and welding jigs, checking fixtures, compressive molds, lay-up molds, foundry patterns, prototypes and mock-ups, injection molds, metal-forming dies, master models, drill fixtures, etc.

APPLICATION

1. When ready to use, mix by adding, by weight, 10 parts catalyst to 100 parts of resin. Blend thoroughly, preferably by mechanical agitation. Mix slowly to minimize the amount of trapped air.
2. Slowly pour the catalyzed mixture. Be careful not to trap air in the casting cavity. Pour in cross sections of 1 ½" or less.
3. Cure at room temperature plus 2-3 hours post-cure at 100-120°C.

SPECIFICATIONS

HANDLING CHARACTERISTICS

Shelf Life: 1 year

PHYSICAL CHARACTERISTICS

Shrinkage Linear, in / in: 0.0006

Tensile Strength, psi: 15,000

Compressive Strength, psi: 32,000

Flexural Strength, psi: 14,000

Izod Impact, ft / lbs / in of Notch: 0.60

Coefficient of Linear Expansion,

(in / in / °C): 3.5×10^{-6}

Thermal Conductivity,

btu / hr / ft² / °F / in: 10.0

STORAGE AND HANDLING

Since settling may occur in storage, remix each container prior to use. Store in a cool, dry area. Be sure containers are tightly sealed when not in use.

E40-414 is available in pre-weighed quart, 1 gallon, 1 ½ gallon, and 5-gallon kits.