



**EL-325HTTC
EPOXY COMPOSITE
TOOLING COMPOUND**
LIGHT-WEIGHT,
HIGH TEMPERATURE



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DESCRIPTION

EL-325HTTC is an epoxy "Composite Tooling Compounds" designed for the construction of tools, jigs, models and other tooling that will see elevated temperatures. Use of EL-325HTTC allows a considerable time and labor saving in tool construction. The neutral resin and black hardener give a uniform dark gray color when thoroughly mixed that is pliable and can be applied to the tool surface without crumbling or cracking.

Tools constructed with EL-325HTTC maintain a very high degree of dimensional stability, are light weight, can be machined as well as drilled and tapped. All of these qualities allow EL-325HTTC to be used in a variety of tooling applications. EL-325HTTC offers the toolmaker a safer alternative to standard high temperature epoxy laminating systems since both resin and hardener are syntactic compounds which minimize splash hazards. EL-325HTTC does not contain MDA or VCHD however, the hardener is corrosive and gloves should be worn when handling.

TYPICAL HANDLING CHARACTERISTICS @ 77°F (25°C)

Mix Ratio (parts by weight)	100R/25H
Mix Ratio (parts by volume)	3.7R/1H
Specific Gravity	0.633 g/cc
Viscosity	Syntactic Dough
Work Life	1½ - 2 hours
Demold Time.....	16-24 hours
Peak Exotherm (1 lb mass, 6" deep).....	130°F (54°C)
Mixed Color	Dark gray
Shelf Life Resin & Hardener (in original unopened container).....	1 year

TYPICAL PHYSICAL PROPERTIES (Cast Bar: 5" x ½" X ½")

Ultimate Flexural Strength (ASTM D-790.92)	9,600psi (66MPa)
Flexural Modulus (ASTM D-790.92).....	540,000psi (3,723MPa)
Ultimate Compressive Strength (ASTM D-695.91).....	4,900psi (34MPa)
Coefficient of Thermal Expansion (TMA) (ppm/°F (°C)).....	9 (16)
Heat Deflection Temperature (ASTM D-648.82).....	425°F (218°C)
Exotherm(1 lb mass, 6" deep).	130°F (54°C)
Hardness.....	65-70 Shore D

APPLICATION

Note: it will be necessary to apply a slurry mixture to be used as a bond coat between the laminate and EL-325HTTC Tooling Compound. A slurry mixture is a 50/50 by volume mixture of catalyzed EL337 or EL315 high temperature epoxy laminating resin and EL-325HTTC. This slurry helps to insure the strongest bond between laminate and EL-325HTTC tooling compound (**a product application guide is available for EL-325HTTC tooling compound applications**).

PRELIMINARY CURE SCHEDULE:

On Model Cure for 24 hours @ 77°F (25°C)
+ 6 hours 150°F (66°C)

Tool support structure can be attached and tool de-molded after this schedule is completed.

POST CURE SCHEDULE:

After completing the Preliminary Cure Schedule, complete the following:

1 hour @ 200°F (93°C)
1 hour @ 250°F (121°C)
1 hour @ 300°F (149°C)
3 hours @ 350°F (177°C)

Thermocouples can be installed to monitor mold temperature throughout the post cure process.

HEATING AND COOLING RATES DURING POST CURE:

Allow tools made with ADTECH high temperature tooling resins to cure 24hrs at room temperature before subjecting them to post cure.

When oven curing laminated molds, always place mold in a room temperature oven and increase temperature at a rate of 50°F (30°C) per hour. When finished, allow molds to remain in the heated oven, decreasing temperature at a rate of 50°F (30°C) per hour. Never remove the mold from the oven until temperature has been lowered to less than 100°F (38°C).

EL-325HTTC Tech/Revised 1/7/15
Supersedes 5/20/14

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