

TECHNICAL DATA SHEET

EL-323 TC

COMPOSITE TOOLING COMPOUND LIGHTWEIGHT TOOLING DOUGH

DESCRIPTION

EL-323 TC COMPOSITE TOOLING COMPOUND is a new and improved material for the construction of tools, jigs, models and other tooling requirements. The system saves a considerable amount of time and labor. EL-323 TC has a convenient mix ratio (1:1 by volume). Mix the blue resin and the yellow hardener into a light green compound. This insures thorough mixing and eliminates any possibilities of "hot spots" in the tool. The system when mixed is a very pliable elastic compound which can be applied to the tool surface without crumbling or cracking. EL-323 TC can also be applied at any thickness above ¼" without excessive exotherm. Tools constructed with Composite Tooling Compound maintain a very high degree of dimensional stability, are light in weight, and can be machined as well as drilled and tapped. All of these qualities allow the system to be used in a variety of tooling applications. EL-323 TC also offers the toolmaker a safer alternative to standard epoxy laminates since both resin and hardener are syntactic which eliminates splash hazards. Clean up is easy with soap and water. Composite Tooling Compound does not contain any corrosive or noxious aromatic amines. This system is both useful and non-toxic.

APPLICATIONS

- *Ideal for lightweight composite sandwich tools and structures*
- *Used for tools, jigs, models and other tool types*
- *Can be used for artistic formable models*

PROPERTIES

- *Colored resin/hardener/mix for improved mixing and color indication*
- *Pliable and formable with no crumbling or cracking when mixed and applied*
- *Machinable and can be drilled and tapped*
- *Low density with high dimensional stability*
- *Very low CTE*
- *Low exotherm build*

PHYSICAL PROPERTIES

PHYSICAL PROPERTIES HANDLING					
Property	Test Method	Unit(s)	EL-323 TC Resin	EL-323 TC Hardener	Mixed System
Mix ratio – by weight			100	100	100/100
Mix ratio – by volume			100	93	100/93
Aspect			Dough	Dough	Syntactic dough
Color		Visual	Yellow	Blue	Green
Specific Gravity (25°C)		lbs/in ³ (g/cc)			.025 (.690)
Work Life (400 g) at 77°F (25°C)		Hours			2-2.5
Demold Time		Hours			12-16
Peak Exotherm (1 lb. mass)		°F (°C)			105 (41)

MECHANICAL and THERMAL PROPERTIES ⁽¹⁾ (Includes Sandwich Structure Layup) ⁽²⁾			
Property	Method	Units	EL-323 TC (mixed)
Volumetric weight (cast bar)		lbs/in ³ (g/cc)	.025 (.690)
Hardness (cast bar)	ASTM D2240	Shore D	60
Flexural Strength ⁽²⁾	ASTM D790	psi (MPa)	13,050 (90)
Flexural Modulus ⁽²⁾	ASTM D790	psi (MPa)	1,027,000 (7,081)
Compressive Strength ⁽²⁾	ASTM D695	psi (MPa)	6,144 (42)
Coefficient of Thermal Expansion (cast bar)	TMA	ppm/°F (°C)	3 (6)
Notched Izod Impact Strength ⁽²⁾	ASTM D256	In-lbs	20.9

⁽¹⁾ The above properties were obtained under laboratory conditions using standardized specimens. Cured 7 days at room temperature.

⁽²⁾ **Sandwich construction with three layers of 10 oz glass fabric laminate on either side of ½" of EL-323 TC, and a single surface coat.**

Note: It will be necessary to apply a slurry mixture to be used as a bond coat between the laminate and EL-323TC Tooling Compound. A slurry mixture is a 50/50 by volume mixture of pre-mixed EL302PC laminating resin and EL-323 TC. This slurry helps to insure the strongest bond between laminate and EL-323 TC and alignment bushings. The 50/50 mixture is adjustable at the tool makers discretion with no thickness limitations and no thinner than 60 parts laminating resin to 40 parts EL-323 TC (a product application guide is available for EL-323 TC tooling compound).

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- Ensure good ventilation.
- Wear gloves, glasses and protective clothes.

For further information, please consult the Safety Data Sheets.

STORAGE CONDITIONS

- This product has a shelf life of 24 months for the resin and hardener as indicated by the expiration date on the container when stored in original unopened containers.

PACKAGING

Packaging information on request, please contact your local sales representative or find your local contact on www.sikaadvancedresins.us

LEGAL NOTICE

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