CARBON FIBRE TECHNOLOGIES

TCI 300-S

NSF 61

PRODUCT DESCRIPTION

TCI 300-S is a two-component, 100% solid, room temperature curing epoxy. Specially designed for FRP laminates, its low viscosity and long pot life characteristics make it ideal for wet-layup composite applications. TCI 300-S is formulated for use in potable water facilities, components are **ANSI/NSF 61 & NSF 372 Approved**, meeting and exceeding safety standards.

WHERE TO USE

- Hardening Epoxy Resin used with carbon/glass fibre to create an FRP laminate
- 300-S must be used with other TCI products
  - TCI CS-850 (CFRP)
  - TCI GS-500 (GFRP)

PROPERTIES	TCI-300-S Resin	TCI-300-S Hardener
Appearance	Clear	Clear
Specific Gravity @ 23°C, gm/cm^3	1.15 +/- .02	0.98 +/- 0.02
Viscosity @ 23°C, cps	5,500 +/- 500	80 +/- 20
Pot Life @ 23°C, 200gm mass	1.0-1.25 hours	
Gel Time @ 23°C, 200gm mass	1.45-2.45 hours	

Cure Cycle: 3 Days @ Room Temperature. **OR** 6 Hrs @ 45°C + 24Hrs @ Room Temperature.

Shelf life: two (2) years in original unopened, properly stored containers

PHYSICAL PROPERTIES OF CURED PRODUCT

EPOXY MATERIAL – Cured 24 Hrs @ 60°C		
TYPICAL TEST PROPERTIES	ASTM METHOD	TYPICAL TEST VALUE
Tensile Strength	D638	10,050 psi (69.3 MPa)
Tensile Modulus	D638	406 Ksi (2,800 MPa)
Elongation Percent	D638	7.5%
Flexural Strength	D790	16,900 psi (116.5 MPa)
Flexural Modulus	D790	478 Ksi (3,296 MPa)
Glass Transition Temperature Tg	E1545	94°C (201°C)

PACKAGING AND YIELD

TCI 300-S is a two-component system consisting of a resin and a hardener, packaged separately in pre-weighted pails, the total volume is 14 Litres when mixed together.

Yield varies, depending on the minimum weight per sq.m of fibre fabric and the desired saturant-to-fabric ratio.

The yield when mixed is 20 $\underline{m^2}$ when used strictly with TCI Carbon Fibre Fabric (CS-850).

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STORAGE

- Store TCI 300-S in an environment where the ambient temperature does not fall below 5°C or reach above 30°C
- Store in dry conditions with original unopened packaging
- Never Store chemical containers in an environment exposed to the weather or direct sunlight

Environmental conditions

- Maintain a dry dehumidified environment and maintain the ambient temperature at a minimum of 10° F above the dew point.

MIXING

- Mix TCI 300-S components, resin (Component 'A') and hardener (Component 'B') for at least 5 minutes
- Always mix pre-weighed kits in their entirety to avoid human errors in proportioning the product components
- Mix the product in quantities according to the rate of application by the installation team
- Some settling of fillers and pigments will occur with time; therefore, thorough mixing of components containing fillers or pigments is necessary

APPLICATION

- Imbue TCI 300-S into the desired fabric (CS-850 or GS-500), ensure that the fabric is not oversaturated
- 300-S can be applied manually using trowels or mechanically using a machine
- The epoxy/fabric weight ratio shall be 1:1

This product datasheet shall be read in conjunction with CarbonStrong's CS-850 Composite datasheet.

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