

HIGH Tg FILAMENT WINDING EPOXY – A-10012/B-10012

Description:

High Tg Filament Winding Epoxy is a two-component epoxy system. This high quality thermoset is designed for use in the filament winding process, lamination process and other composite manufacturing processes. High Tg Filament Winding Epoxy exhibits long working life at room temperature as well as elevated processing temperature conditions. This system yields a high Tg for the winding process and is available with or without black pigment for optimal surface finish.

Handling Properties:

RESIN VISCOSITY, cP	3,900	ASTM D 2196
RESIN DENSITY, lb./gal	9.72	ASTM D 792
HARDENER VISCOSITY, cP	384	ASTM D 2196
HARDENER DENSITY, lb./gal	10.24	ASTM D 792
COLOR	Black, Clear	
DENSITY, lb./gal	9.96	ASTM D 792
MIX RATIO, pbv (pbw)	1.18/1 (1.12/1)	
MIXED VISCOSITY, cP	1,400	ASTM D 2196
GEL TIME (40g @100°C), min	34	ASTM D 2471
WORKING TIME*, hours	24+	

*The working time varies according to the temperature of the air, the epoxy and the surface to which it is applied.

Note: Above viscosities/densities measured @ 77°F.

Physical Properties:

TENSILE STRENGTH, psi	8,400	ASTM D 638
TENSILE MODULUS, psi	250,000	ASTM D 638
ELONGATION @ BREAK, %	4.80	ASTM D 638
COMPRESSIVE STRENGTH, psi	15,700	ASTM D 695
COMPRESSIVE MODULUS, psi	249,000	ASTM D 695
FLEXURAL STRENGTH, psi	19,500	ASTM D 790
HARDNESS, Shore D	90	ASTM D 2240

Cure Cycle: 1 hour @ 100°C + 2 hours @150°C + 2 hours @ 175°C + 4 hours @ 200°C. Test specimens for above were neat epoxy (without fiber reinforcement).

Thermal Properties:

Heat Deflection Temperature, °F (°C)	331 (166.3)	ASTM D 648
Tg DSC Ultimate, °F (°C)	341 (171.5)	ASTM D 3418

Cure Cycle: 1 hour @ 100°C + 2 hours @ 150°C + 2 hours @ 175°C + 4 hours @ 200°C.

Mixing:

The storage temperature of High Tg Filament Winding Epoxy will greatly affect the ease of mixing, application and curing time. For best results, High Tg Filament Winding Epoxy should be stored at 60-80°F (16-27 °C) for at least 24 hours before use. The resin and hardener need to be thoroughly blended to ensure complete dispersion. High Tg Filament Winding Epoxy can be measured by volume or weight using the mix ratios listed under the “Handling Properties” section. REMEMBER - you will have less working time at higher temperatures.

SAFETY PRECAUTIONS

Avoid breathing of vapors. Forced local exhaust is recommended to effectively minimize exposure. NIOSH approved, organic vapor respirators and forced exhaust are recommended in confined areas, or when conditions (such as heated polymers, sanding) may cause high vapor concentrations. **DO NOT WELD ON, BURN OR TORCH ON OR NEAR, ANY EPOXY MATERIAL. HAZARDOUS VAPOR IS RELEASED WHEN AN EPOXY IS BURNED.**

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