

PRO-SET®

Technical Data

XR28A~M2043

FIRE RETARDANT INFUSION EPOXY

The New
Standard

EPOXIES for
Laminating
Infusion
Tooling
Assembly

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ISO9001:2015 Certified

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COMBINED FEATURES

Very low viscosity for rapid saturation of fiberglass, Kevlar® and carbon fiber laminate with resin infusion and VARTM processes.

Fast speed hardener provides up to 40 minutes of pot life at 72°F (22°C).

Optimized for hand wet out and machine impregnation in contact molding, vacuum bagging and filament winding applications.

Room temperature cure properties suitable for many composite components and structures.

T_g as high as 151°F (66°C) with proper post cure providing excellent temperature stability and great part cosmetics.

Cost effective, high performance epoxy formulation for synthetic composite manufacturing.

Quality-control tinting is available at no extra charge; simply add "QC" after the product code on your order.

Shelf life is 3 years for resin and 2 years for hardener when properly stored².

HANDLING PROPERTIES

| Property | Standard | Units | 72°F (22°C) |
|-----------------|------------|---------|-------------|
| 100g Pot Life | - | minutes | 36-44 |
| Viscosity Mixed | ASTM D2196 | cP | 340 |

MIX RATIO

| Method | Resin:Hardener | Resin:Hardener |
|--------|----------------|----------------|
| Weight | 3.78:1 | 100:26.5 |
| Volume | 3.29:1 | 100:30.4 |

XR28A (listed as XR02-099-29A) is a non-thixotroped version of XR29A, and when used in conjunction with PRO-SET M2046 Hardener is accepted for compliance with Lloyd's Register Rules and Regulations and with the International Convention for Safety of Life at Sea (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorized by contracting governments to issue the relevant certificates, licenses, permits, etc.

Test specimens were neat epoxy (without fiber reinforcement).
Typical values, not to be construed as specification.

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MECHANICAL PROPERTIES

| Property | Standard | Units | 72°F (22°C) x 2 wk | RT Gelation + 140°F (60°C) x 8 hrs |
|--------------------|------------|-----------|-----------------------|--|
| Hardness | ASTM D2240 | Type D | 84 | 84 |
| Compression Yield | ASTM D695 | psi (MPa) | 10,200 (70) | 10,800 (74) |
| Tensile Strength | ASTM D638 | psi (MPa) | 7,050 (49) | 7,730 (53) |
| Tensile Modulus | ASTM D638 | psi (GPa) | 4.35E+05 (3.) | 4.50E+05 (3.1) |
| Tensile Elongation | ASTM D638 | % | 2.8 | 2.8 |
| Flexural Strength | ASTM D790 | psi (MPa) | 13,600 (94) | 14,900 (103) |
| Flexural Modulus | ASTM D790 | psi (GPa) | 4.18E+05 (2.88) | 4.55E+05 (3.14) |

THERMAL PROPERTIES

| Property | Standard | Units | 72°F (22°C) x 2 wk | RT Gelation + 140°F (60°C) x 8 hrs |
|-----------------------------|------------|---------|-----------------------|--|
| Tg DSC Onset– 1st Heat | ASTM E1356 | °F (°C) | 125 (52) | 133 (56) |
| Heat Deflection Temperature | ASTM D648 | °F (°C) | 114 (46) | 126 (52) |
| Tg DSC Ultimate | ASTM E1356 | °F (°C) | 151 (66) ¹ | |

¹ Additional post cure may be required; contact Technical Department for details.

² Store PRO-SET® Epoxy resins and hardeners at room temperature in sealed containers until shortly before use. As with many high-performance epoxy resins, repeated exposure to low temperatures during storage may cause the resin to crystallize. If this occurs, warm the resin to 125° F and stir to dissolve crystals. Hardeners may form carbamation when exposed to CO₂ and moisture in the atmosphere for extended periods of time. Prevent carbamation by protecting hardeners from exposure until immediately prior to processing.

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