

PRO-SET®

Technical Data

HTP 187
HTP 288

EPOXIES for
Laminating
Infusion
Tooling
Assembly

HIGH-TEMP SURFACE COAT EPOXY

COMBINED FEATURES

High-temperature, high-performance epoxy surface coat formulation for synthetic composite parts and tooling manufacturing. Black in color.

T_g as high as 270°F (132°C) with proper post-cure. Provides excellent temperature stability and great part cosmetics.

Slow cure speed provides 2 to 3 hours working time at 72°F (22°C). A second application can be applied while the first coat is tacky, which is typically after 6-8 hours. After 24 hours cure at 72°F (22°C) the laminating process can begin.

Medium Viscosity enables brush application and air release. Easily applied with a short bristle brush.

Thixotroped to prevent runs and sags at a thickness of 10-12 mils.

Elevated temperature cure is required. The surface coat and laminate should be post cured together. See chart for post cure information.

This datasheet is valid starting resin lot number, 1873003A.

HANDLING PROPERTIES

Property	Standard	Units	72°F (22°C)
150g Pot Life	ASTM D2471	minutes	160
500g Pot Life	ASTM D2471	minutes	150
Viscosity Mixed	ASTM D2196	cP	16,000
Viscosity (resin)	ASTM D2196	cP	33,000
Viscosity (hardener)	ASTM D2196	cP	900

MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	7.40:1	100:13.5
Weight Range	8.67:1 - 6.85:1	100:11.5 - 100:14.6
Volume	6.30:1	100:15.9
Volume Range	7.41:1 - 5.62:1	100:13.5 - 100:17.8

DENSITY

State	Units	72°F (22°C)
Resin	lb/gal (g/cc)	10.3 (1.23)
Hardener	lb/gal (g/cc)	8.85 (1.06)

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

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ISO9001:2015 Certified

Rev 5 / Apr 2024

Starting Lot # 1873003A

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HTP 187~HTP 288

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HIGH-TEMP SURFACE COAT EPOXY

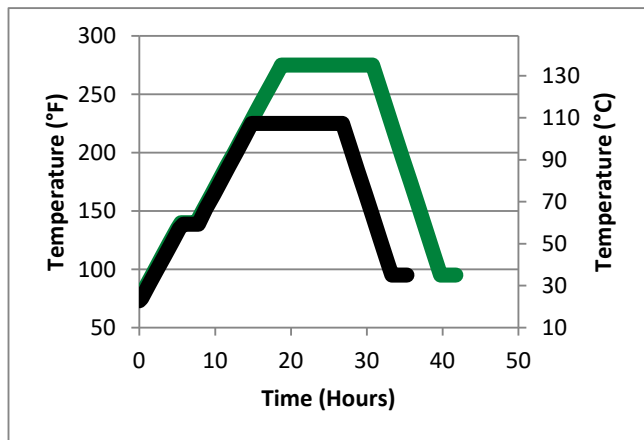
MECHANICAL PROPERTIES

Property	Standard	Units	RT + 140°F (60°C) x 2hr + 225°F (107°C) x 12hr	RT + 140°F (60°C) x 2hr + 275°F (135°C) x 12hr
Hardness	ASTM D2240	Type D	89	92
Compression Yield	ASTM D695	psi (MPa)	17,800 (123)	21,000 (140)
Tensile Strength	ASTM D638	psi (MPa)	3,700 (26)	3,700 (26)
Tensile Modulus	ASTM D638	psi (GPa)	4.92E+05 (3.4)	5.60E+05 (3.9)
Tensile Elongation	ASTM D638	%	1.9	0.9
Flexural Strength	ASTM D790	psi (MPa)	7,900 (54)	7,900 (54)
Flexural Modulus	ASTM D790	psi (GPa)	4.10E+05 (2.8)	4.10E+05 (2.8)

THERMAL PROPERTIES

Property	Standard	Units	RT + 140°F (60°C) x 2hr + 225°F (107°C) x 12hr	RT + 140°F (60°C) x 2hr + 275°F (135°C) x 12hr
Tg DMA Peak Tan Delta	ASTM E1640 ¹	°F (°C)	264 (129)	297 (147)
Tg DMA Onset Storage Modulus	ASTM E1640 ¹	°F (°C)	234 (112)	268 (131)
Tg DSC Onset-1st Heat	ASTM E1356	°F (°C)	228 (109) ²	291 (144)
Heat Deflection Temperature	ASTM D648	°F (°C)	247 (119)	247 (119)

POST-CURE SCHEDULE



Post-cure with ramp rates no greater than 12°F/hr, to achieve maximum properties.
For larger parts, additional dwells may be required.



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QC Tinting Available

APPLICATION TIPS

- Stir resin before use; some settling may occur.
- Always evaluate mold release on a test panel that is characterized with your post-cure schedule.
- Apply product using stiff bristle brush. Cut bristles to half of their original length to increase brush stiffness.
- When applying, brush in an alternating pattern of 0 and 90 degrees, building to a thickness of 10-12 mils. A total of 20-24 mils of surface coat is recommended before laminating.
- Allow surface coat to cure prior to lamination. Wash with water and a Scotch-Brite™ pad to remove amine blush.
- To repair finished molds, grind away damaged surface coat and grind a “vee” into any cracks. Sand areas with 80-grit sandpaper and fill with surface coat. Post-cure as required.
- 1 mixed gallon of HTP-187/HTP-288 covers approximately 60 sq. ft. with a final thickness of 24 mils (2 applications).

¹1 Hz, 3°C per minute.

²Modulated DSC

³Store 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 or hardener to crystallize. If this occurs, warm the resin or hardener 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.