104

NEWPORT HIGH PERFORMANCE MATERIALS

250-300°F (120-150°C) Cure Epoxy Film Adhesive

Typical applications
Aerospace
Marine
Wind energy
Sporting goods
Industrial manufacturing

Shelf life
6 months at 40°F (4°C)
12 months at 0°F (-18°C)

Out life
30 days at 70°F (21°C)

Description
104 is a 250°F (120°C) to 300°F (150°C) cure, general purpose, epoxy film adhesive designed for bonding applications that require extended out time, while maintaining high strengths at temperatures ranging from -67°F (-55°C) to 180°F (82°C).

Benefits/features
- Extended out life and shelf life
- High strength sandwich panel bonding
- Uniform bond strength between top and bottom sandwich skins
- Co-curable with most 250°F (120°C) curing prepregs
- Meets: MMM-A-132B, Type I, Class 3, Group 3
- Meets MIL-A-25463B, Type I, Class 1, Group 3

Application
104 is suited for structural and secondary bonding applications in aerospace, sporting goods, marine, wind energy, and industrial manufacturing. High shear and peel strengths make 104 ideal for metal-to-metal bonding and sandwich panel manufacturing.

104 is supplied in standard film weights from 0.030-0.060 psf (145-290 gsm), either unsupported or on a variety of commercially available reinforcements, including:
- Non-woven polyester mat (HC)
- Nylon mesh (N), and tricot (TR)
- Unsupported (U)
- Aluminum and copper mesh for lightning strike protection

Recommended processing conditions
104 can be cured at temperatures from 250°F (120°C) to 300°F (150°C), depending on part size and complexity. Low, medium, and high pressure molding techniques may be used to cure 104. Recommended cure cycle is 25 psi (172kPa), 3°F (1.7°C)/min ramp to 285°F (141°C), hold for 45 minutes, cool to <140°F (60°C).

Contact your account manager or MCCFC technical support to discuss specific applications.

MITSUBISHI CHEMICAL CARBON FIBER AND COMPOSITES

Technical Data Sheet

Neat resin (values are average and do not constitute a specification)

Property	Measured Value
Gel time @ 275°F (135°C), minutes	2 - 4
Specific gravity	1.19

Mechanical data (values are average and do not constitute a specification)

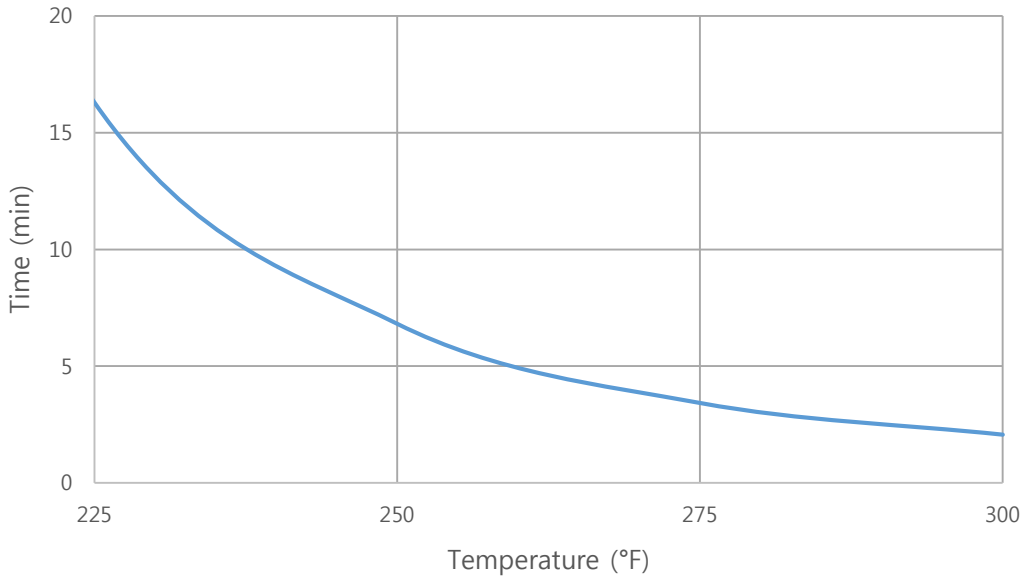
NB104 HC 0.060

Press cured, 25 psi, 45 minutes at 285°F

Property	Test method		-67°F	RT	180°F	220°F
Tensile shear strength, psi (MPa)*	ASTM D1002		4000 (27)	4200 (29)	3500 (24)	2400 (16)
Climbing drum peel strength, in-lbs/in (m-N/m)** *¼" cell, 8 lb aluminum core*	ASTM D1781	Top	9.5 (42.3)	14.0 (62.2)	19.6 (87.1)	-
		Bottom	10.5 (46.7)	14.1 (62.7)	19.3 (85.8)	-
		Average	10.0 (44.5)	14.0 (62.2)	19.5 (86.7)	-
Flatwise tensile strength, psi (Mpa)**	ASTM C297		1300 (9.0)	1400 (9.6)	1000 (6.9)	-
Flexural strength, lbs (kN)**	ASTM C393		2700 (12.0)	3000 (13.3)	2700 (12)	-

**MMM-A-132B, Type I, Class 3 **MIL-A-25463B, Type I, Class 1*

Gel Time vs Temperature



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MITSUBISHI CHEMICAL CARBON FIBER AND COMPOSITES

Technical Data Sheet

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