

Epocast[®] 52 A/B Epoxy Laminating System

Product Description

Epocast[®] 52-A/B epoxy laminating system is a two-part material formulated for service up to 350°F (177°C). Well suited for fabrication and repair of graphite composites, the laminating system combines low temperature vacuum bag curing capability with good hot-wet strength. Epocast[®] 52-A/B epoxy laminating system is qualified to specifications including AIMS 08-01-002-01; AIMS 08-02-002-01; and SAE AMS2980.

Features

- Designed for composite repairs
- Good hot-wet strength
- Good wetting, low viscosity

Typical Properties*

Property	Test Method	52 A Resin	52 B Hardener	Mixed System
Appearance	Visual	Blue	Straw	Amber
Density, g/cm ³	ASTM D792	1.20	1.00	1.10
Viscosity at 25°C, cP	ASTM D2196	14,000	1,500	5,500

*Typical properties are based on Huntsman's test methods. Copies are available upon request.

Processing Data

Mix Ratio

Product	Parts by weight	Parts by volume
Epocast [®] 52 A Resin	100	2
Epocast [®] 52 B Hardener	41	1

Mix both components thoroughly for several minutes until a homogeneous mixture is obtained. Material temperatures should be above 18°C (65°F) when mixing. Mix carefully to minimize air entrapment. Mix only the amount of material that can be used within 40 minutes. Heat buildup during or after mixing is normal. Allowing quantities greater than 250 grams to gel can produce excessive exotherm that may cause product decomposition and generate toxic fumes. Spreading material to a shallow tray (reducing mass/surface ratio) will minimize heat buildup and extend gel time. Mixing smaller quantities will minimize the heat buildup.

Processing Data

Parameter	Value
Gel time, 100 g at 77°F (25°C), hours	3.5 - 5.5
Typical Cure Cycles*	3 hours at 66°C, or
	2 hours at 93°C

*Handling and machining may be done after 8-16 hours at room temperature.

Typical Physical Properties

Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification.

Property*	150°F Cure	200°F Cure
Maximum service temperature, °F (°C)	350 (177)	350 (177)
Short beam shear strength, ksi (MPa) at 77°F (25°C) at 176°F (80°C) (Wet)	-- --	7.7 (53.1) 7.4 (51)
Tensile strength, ksi (MPa) at -65°F (-54°C) at 160°F (71°C) (Wet)	28 (193) 17 (117)	27 (186.2) 18 (124)
Compression interlaminar shear strength, ksi (MPa) at -65°F (-54°C) at 77°F (25°C)	9.7 (66.8) 7.7 (53.1)	10.5 (72.4) 8.6 (59.3)

*Samples have 36% resin content on T300 3KPW. Wet = 10 days at 140°F (60°C) / 85% RH.

Glass Transition Temperature, °F (°C)	Value
Cure: 3 hours at 150°F + 1 hour at 350°F	310 (155)
Cure: 3 hours at 150°F	262 (133)

Inplane Shear Strength / Modulus	Ultimate strength	Shear modulus x10 ⁶
Tested at 176°F (80°C), psi (MPa) After water soak 2 weeks at 158°F After 1000 hours Jet A soak at RT After 1000 hours Skydrol soak at 158°F No immersion, 73°F / 50% RH	10,500 (72.4) 11,600 (80) 12,480 (86) 10,390 (71.6)	0.835 (0.006) 0.358 (0.002) 0.377 (0.003) 0.372 (0.002)
Tested at 248°F (120°C), psi (MPa) Water soak 2 weeks at 158°F No immersion, 73°F / 50% RH	7,980 (55) 8,330 (57.4)	0.784 (0.005) 0.285 (0.002)
Tested at room temperature, psi (MPa) Water soak 2 weeks at 158°F MEK soak 1 hour No immersion, 73°F / 50% RH	13,000 (89.6)* 14,990 (103.3)* 13,550 (93.4)*	0.465 (0.003)* 0.509 (0.003)* 0.462 (0.003)*
Tested at 73°F, psi (MPa) 40 hours at 73°F / 50% RH	11,940 (82.3)	0.731 (0.005)
Tested at 176°F Wet, psi (MPa) 96 hours water boil	9,050 (62.4) [†]	0.451 (0.003) [†]

*Averages of 3 specimens.

[†]Averages of 5 specimens

Storage

Epocast[®] 52 A/B should be stored in a dry place, in the original sealed container at temperatures between 2°C and 8°C (35.6°F and 46.4°F). Tightly reseal containers after each use. Under these storage conditions, the product has a shelf-life of **1 year** from date of shipment (expiration date may differ based on customer specification). The product should not be exposed to direct sunlight.

Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

First Aid!

Refer to SDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

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