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Advanced Materials

Epocast® 52-A/B

EPOXY LAMINATING SYSTEM

- Designed for Composite Repairs
- Good Hot-Wet Strength
- Good Wetting, Low Viscosity

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: BMS 8-301, Class 1, Grade 2; AIMS 08-01-002-01; and AIMS 08-02-002-01.

TYPICAL PROPERTIES AS RECEIVED :

Property	52-A Resin	52-B Hardener	52-A/B System	Test Method
Color	Blue	Amber	Amber	Visual
Density, g/cc.	1.20	1.00	1.10	ASTM-D-792
Viscosity, cP at 77°F (25°C)	14,000	1,500	5,500	ASTM-D-2196
Gel time, 100 gms at 77ºF (25°C)	--	--	3.5-5.5 hrs	ASTM-D-2471

MIX RATIO :

To 100 parts by weight of Epocast® 52-A resin, add 41 parts by weight of Epocast® 52-B hardener (2:1 by volume). Mix both components thoroughly for several minutes until a homogeneous mixture is obtained. 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 build up and extend gel time. Mixing smaller quantities will minimize the heat buildup.

CURE SCHEDULE :

3 hours at 150°F (66°C) or 2 hours at 200°F (93°C).

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TYPICAL CURED PROPERTIES* (Not for specification purposes)

Test	**Result**	
Maximum service temperature, °F (°C)	350 (177)	
	150°F* Cure	200°F Cure*
Short Beam Shear Strength, at 77°F (25°C), Ksi (MPa)		7.7 (53.1)
at 176°F (80°C)/wet		7.4 (51)
Tensile Strength (±45) at -65°F (-54°C), Ksi (MPa)	28 (193)	27 (186.2)
at 160°F (71°C)/wet	17 (117)	18 (124)
Compression Interlaminar Shear Strength, at -65°F (-54°C), Ksi (MPa)	9.7 (66.8)	10.5 (72.4)
at 77°F (25°C)	7.7 (53.1)	8.6 (59.3)

* 150°F=66°C; 200°F=93°C

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

	Ultimate Strength	**Shear Modulus (x10^6)**
Inplane Shear Strength/Modulus		
Tested at 176°F (80°C), psi (MPa)		
after water soak 2 weeks at 158°F (70°C)	10,500 (72.4)	0.835 (0.006)
after 1000 hours Jet A soak at RT	11,600 (80)	0.358 (0.002)
after 1000 hours Skydrol soak at 158°F (70°C)	12,480 (86)	0.377 (0.003)
(no immersion) 73°F (23°C)/50% RH	10,390 (71.6)	0.372 (0.002)
Tested at 248°F (120°C), psi (MPa)		
water soak 2 weeks at 158°F (70°C)	7,980 (55)	0.784 (0.005)
(no immersion) 73°F (23°C)/50% RH	8,330 (57.4)	0.285 (0.002)
Tested at room temperature, psi (MPa)		
water soak 2 weeks at 158°F (70°C)	13,000 (89.6)	0.465 (0.003)
MEK soak 1 hour	14,990 (103.3)	0.509 (0.003)
(no immersion) 73°F (23°C)/50% RH	13,550 (93.4)	0.462 (0.003)
	(All above average of 3 specimens)	
Tested at 73°F (22°C), psi (MPa)		
40 hours at 73°F (23°C)/50% RH	11,940 (82.3)	0.731 (0.005)
Tested at 176°F (80°C) Wet, psi (MPa)		
96 hours water boil	9,050 (62.4)	0.451 (0.003)
	(Two above average of 5 specimens)	
Glass Transition Temperature		
Cure: 3 hours at 150°F (55°C)		
plus 1 hour at 350°F (177°C), °F (°C)	310 (155)	
Cure: 3 hours at 150°F (55°C)	262 (133)	

STORAGE :

Epocast® 52-A/B should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and 104°F). The product should not be exposed to direct sunlight. Under these storage conditions, and when supplied under Huntsman standard certification, this product has a shelf life of 1 year (expiration date may differ based on customer specification).

Material temperatures should be above 18°C (65°F) when mixing. After use, tightly reseal containers.

PRECAUTIONARY STATEMENT :

Huntsman Advanced Materials Americas LLC maintains up–to-date Material Safety Data Sheets (MSDS) 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 MSDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

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