

Description

Epolam 2015 resin designed for production of composite structures by wet lay-up methods and offered with a choice of three different speed hardeners. This allows the selection of a pot life suitable to the size of the part being produced. Well suited for wood impregnation.

Applications

- Suitable for hand layup, vacuum-bagging, RTM and filament winding

Properties

- Low viscosity
- Readily wets out fabrics
- Suitable for marine applications
- Good mechanical properties
- Approved by Lloyd's register for shipbuilding

Physical Properties

		Epolam 2015 Resin	Epolam 2014 Hardener	Epolam 2015 Hardener	Epolam 2016 Hardener
Composition		Epoxy	Amine	Amine	Amine
Mix Ratio, by weight		100	32	32	32
By volume		100	38	38	38
Appearance		Liquid	Liquid	Liquid	Liquid
Color		Light amber	Light amber	Colorless	Light amber
Viscosity @ 77°F (25°C) mPa.s	Brookfield LVT	1,550	70	70	30
Density @ 77°F (25°C) (g/cc)	ISO 1675:1985	1.15	0.96	0.95	0.98
Viscosity, mixed @ 77°F (25°C) mPa.s	Brookfield LVT		650	550	450
Pot life, 500g at 77°F (25°C)			60 minutes	140 minutes	400 minutes
Cured density @ 74°F (23°C) (g/cm ³)	ISO 2781: 1985		1.12	1.08	1.14

PROCESSING

To obtain the desired temperature resistance and the optimal mechanical properties it is necessary to postcure the EPOLAM 2015 system. This step takes place 24 to 48 hours after application depending on the hardener. In order to avoid any distortion risks it is recommended to support the part on a frame before curing.

To allow a good beginning of polymerization of EPOLAM 2015/2016 system it is recommended to work at 68°F (20°C) minimum.

Cured Properties at 74°F (23°C) ¹

Epolam 2015 Resin with			Epolam 2014 Hardener	Epolam 2015 Hardener	Epolam 2016 Hardener
Glass Transition Temperature (Tg)	D.S.C. - Mettler	°F (°C)	196 (91)	190 (88)	178 (81)
Hardness	ASTM D-2240	Shore D	83	82	84
Tensile Strength	ASTM D638	psi (MPa)	10,100 (70)	10,100 (70)	10,600 (73)
Elongation at break	ASTM D638	%	5	6	7
Flexural Strength	ASTM D790	psi (MPa)	17,400 (120)	17,400 (120)	16,000 (110)
Flexural Modulus	ASTM D790	psi (MPa)	450,000 (3,100)	435,000 (3,000)	421,000 (2,900)

¹ Average values on laboratory prepared test samples of neat (unreinforced) resin, 24 hours at room temperature plus 16 hours at 176°F (80°C)

Effect of various cure schedules on properties of Epolam 2015/2015

Property	Method	Initial Cure		24 h at 86°F (30°C)				24 h at 74°F (23°C)
		Units	Post cure	None	16 h at 104°F (40°C)	16 h at 140°F (60°C)	1 week (168 h) at 86°F (30°C)	1 week (168 h) at 74°F (23°C)
Tensile Strength	ISO 527:1993	PSI (MPa)		7,400 (51)	8,700 (60)	7,400 (51)	10,200 (70)	8,300 (57)
Tensile Modulus	ISO 527:1993	PSI (MPa)		421,000 (2,900)	479,000 (3,300)	483,000 (3,330)	508,000 (3,500)	508,000 (3,500)
Elongation	ISO 527:1993	%		4.5	3.3	2.8	3.5	2.6
Flexural Strength	ISO 178:1993	PSI (MPa)		9,430 (65)	12,200 (84)	19,700 (136)	15,500 (107)	12,300 (85)
Flexural Modulus	ISO 178:1993	PSI (MPa)		508,000 (3,500)	435,000 (3,000)	450,000 (3,100)	493,000 (3,400)	479,000 (3,300)
Heat Deflection Temperature	ISO 75:1993	°F (°C)		109 (43)	138 (59)	169 (75)	142 (61)	118 (48)

Storage Conditions

This product has a shelf life of 12 months as indicated by the expiration date on the container when stored in original unopened containers between 59 – 77°F (15 – 25°C). Any opened can must be tightly closed.

Handling Precautions

Normal health and safety precautions SHOULD be observed when handling these products :

- Ensure good ventilation
- Wear gloves, and safety glasses

For further information, please consult the material safety data sheet.

Guarantee

The information contained in this technical data sheet results from research and tests conducted in our Laboratories under precise conditions. It is the responsibility of the user to determine the suitability of AXSON products, under their own conditions before commencing with the proposed application. AXSON guarantees the conformity of their products with their specifications but cannot guarantee the compatibility of a product with any particular application. AXSON disclaims all responsibility for damage from any incident which results from the use of these products. The responsibility of AXSON is strictly limited to reimbursement or replacement of products which do not comply with the published specifications.