

EPOBIOX™ LV Epoxy System

Areas of application

- Sports composite laminates
- Marine composite laminates
- Metal, steel, wood and concrete industrial laminate
- Windmill blade laminate

Product benefits

- Mechanically strong tailor made low viscosity epoxy system for various applications
- Very high adhesion and chemical resistance
- Also available with high temperature resistance
- Suitable on many substrates and to vertical surfaces
- Very fast bonding

Product Description

EpoBiox™ LV Epoxy System is a low viscosity modified epoxy system which is tailor made for laminating applications. It is suitable e.g. for composites and flooring. With different curing agents and accelerators the system can be modified to meet customer's requirements, cure rate, pot life and other properties.

EpoBiox™ Bond is made >50 % from green renewable non-food chain raw materials and common fillers. The resin is Amroy Europe's unique EpoBiox™ using pine oil waste and vegetable oil waste as raw materials together with traditional oil based epoxy raw materials. The resin saves CO² over 4 kg/1 kg resin manufactured when compared to traditional oil based epoxy resins. EpoBiox™ has been chosen as a resin of choice into the JEC 2011 Green composite award winner product in Paris.

Physical data

EpoBiox™ The System

EPOBIOX™ LV resin low viscosity		Amroy CA45 curing agent	
Resin viscosity (20 °C)	1000 – 2000 mPa·s	Viscosity (20 °C)	0 – 50 mPa·s
Resin viscosity (40 °C)	200 – 300 mPa·s		
Density	1.1 – 1.2 g/cm ³	Density	0.9 – 1.0 g/cm ³
Flash point	>150 °C	Flash point	>120 °C
Mix properties with 100 Phr resin + 40 Phr curing agent Amroy CA45			
Mix ratio by weight, %	100:40		
Mix viscosity (25 °C)	200 – 300 mPa·s		
Mix viscosity (40 °C)	100 – 150 mPa·s		

Lower viscosity versions available on special request. Mix viscosities down to 100 mPa·s at 25 °C available.

Mix System technical data with different curing agents

	Amroy CA50 G	Amroy CA45	Amroy CA50 fast
Mix ratio (by weight)	100:50	100:40	100:50
Mix Viscosity 25 °C, mPa·s	150	250	200
Mix Viscosity 40 °C, mPa·s	75	120	100
Density, kg/l	1.05	1.06	1.05
Colour	Clear transparent / slightly yellowish / brownish		
Gel Time 25 °C (150 g)	45 min	5–6 hours	15 min
Gel time 60 °C	15 min	45 min	5 min
Min Cure Temperature, °C	10	30	0
Recommended cure at 80 °C	not needed	min 2 hours	not needed
Max Tg, °C	80	90	100
Elongation at break, %	6	12	7

Mix ratio 100:40 by weight with Amroy CA45 curing agent.

Processing

- Clear the surface from all dust, grease and moisture.
- Preheat the resin system to desired temperature. The higher the temperature of the object the better flow and wetting are achieved.
- Mix the resin with curing agent properly for minimum of 1–2 minutes with recommended mix ratio. Let the air come out and settle for minimum of 2–5 minutes. Use vacuum if possible.
- Laminate the materials and cure with recommended cure schedule. The product cures even at room temperature but higher temperature gives better cure and properties.
- Use heat cure to achieve maximum temperature resistance, especially for temperature target above 80 °C. Recommended heat cure or post cure is 2–8 hours at 80–120 °C.

Vertical surfaces in hand laminating

The system can be thicked/thixed? with 2 % HDK / Aerosil for laminating vertical surfaces. That helps especially against sagging/draining. Also available in all RAL colours.

Thermal data

The standard laminates give a Tg of 80 °C – 100 °C and a long term temperature resistance of 60 °C – 90 °C. All products can have a lot higher short term temperature resistance.

Packaging

Resin: EpoBiox™		
IBC	Drum	Can
1000 kg	220 kg	20 kg
Curing agents: Amroy CA45, Amroy CA50 G, Amroy CA50 fast		
IBC	Drum	Can
900 kg	180 kg	18 kg

Storage

The products should be stored in dry warehouse protected from direct sunlight, heat and cold in closed containers. The storage temperature should be from 0 °C to 50 °C. The storage time is maximum 3 years. The products may crystallize over time especially if they have been in cold during transport or storage. Crystallized products can be restored by heating and stirring slowly at 50 °C to 80 °C temperature for several hours.

Health and safety information

The products are based on epoxy resin and have a code 9, UN 3082. The products can cause allergy and skin sensitivity in direct skin contact and thus we recommend always wearing rubber gloves and personal eye protection.

Legal notice

All this data has been measured by Amroy Europe Ltd and its partners and is done according to the best knowledge, but it should not be used as a guarantee. Nor should the data be used in construent with any patents.

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