LAPOX® ARL-135 | AH-336

Technical Data Sheet | Polymers Business

Ambient cure epoxy system for hand lay-up

Lapox ARL-135	100	pbw
Lapox AH-336	32	pbw

Description

Lapox ARL-135 is a modified epoxy laminating resin designed for high performance applications and Lapox AH-336 is a modified polyamine based hardener suitable for high mechanical performance applications in static and dynamic load conditions. The low initial viscosity of this system ensures fast and complete impregnation of reinforcing fibers such as glass, carbon and polyamide and allows components to be produced by various process techniques with high consistency in performance properties. The components cured at room temperature provides an excellent handling strength. The optimum properties, however, will only be obtained after post curing at temperature of more than 50°C. Fully cured components prepared by this system are recommended to operate between 60°C and 80°C temperature.

Applications

Automotive
Electrical
Gliders
Motor gliders and planes
Moulds and tools
Other industrial and house hold components.
Recreational and sporting goods
Ships and boats
Wind turbine blades

Processing

Contact pressure mouldings
Filament winding
Pultrusion
Resin infusion (RI)
Resin transfer moulding (RTM)
Vacuum and pressure bag techniques
Wet lay-up lamination

Typical specifications

Lapox ARL-135

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 2
Viscosity at 25°C	m Pas	ASTM D2196	1,700 - 2,500
Epoxy content	Eq/kg	ASTM D1652	5.40 - 5.88
Specific gravity at 25°C	-	ASTM D792	1.1 - 1.2

Lapox AH-336

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear, transparent liquid
Colour	GS	ASTM D1544	Max 4
Viscosity at 25°C	m Pas	ASTM D2196	20 - 100
Specific gravity at 25°C	-	ASTM D792	0.93 - 0.99

Processing properties

Properties	Unit	Test method	Values
Mixing ratio (by weight)	-	Visual	Resin: 100 Hardener: 32
Initial mix viscosity	m Pas	ASTM D2196	300 - 700 / 25°C
Pot life	Minutes	ASTM D2471	120 - 160 at 20°C 80 - 100 at 25°C
Curing shrinkage	%	-	1.6
Curing schedule	°C / hours	-	25°C / 24 hours + 70°C / 8 hours

Typical properties of neat cured system

Curing schedule: 25°C / 24 hours + 70°C / 8 hours
Determined on standard test specimen at 25°C

Properties	Unit	Test method	Values
Tensile strength	m Pa	ISO 527	60 - 70
Elongation at break	%	ISO 527	4 - 7
Elastic modulus in tension	g Pa	ISO 527	2.8 - 3.4
Flexural strength	m Pa	ISO 178	115 - 130
Elastic modulus in flexural	g Pa	ISO 178	3.0 - 3.6
Compressive strength	m Pa	ISO 604	120 - 140
Hardness	Shore D	ISO 868	80 - 90
Glass transition temperature (DSC)	°C	ISO 11357 - 2	75 - 85
Water Absorption 25°C / 24 hours	% w/w	ISO 62	Max 0.5

Packaging

Lapox ARL-135 is available in 30 kg, 110 kg and 240 kg carboys. Lapox AH-336 is available in 1 kg HDPE bottles. Other packing may be considered on request.

Storage and handling

Lapox ARL-135 and hardener Lapox AH-336 have shelf-life up to 2 years if stored in their original sealed containers. Resin and hardener may crystallise if stored below 15°C. Crystallisation may be reversed completely by heating the material between 60°C and 70°C. It is recommended to use resin and hardener only when they are clear and free from cloudiness. Both resin and hardener may cause irritation to sensitive skins. If contact does occur then it should be washed off immediately with soap and warm water. Please refer to the Safety Data Sheet (SDS) for detailed instructions on storage and handling.

Safety

Wear personal protective equipment (PPE). Avoid contact with the eyes and skin. In case of direct contact and irritation, the resin should be washed off immediately with soap and warm water. Avoid breathing vapours, mist or gas. Please refer to the SDS for detailed safety instructions.

Spills and disposal

In case of spills, sweep up and shovel the spilled material. Keep spilled material in suitable, closed containers for disposal. Soak up with an absorbent such as clay, sand or other suitable material. Flush area with water to remove trace residue. Do not allow the product to reach the sewage system. Waste must be disposed of in accordance with federal, state or local regulations, as applicable.

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Note Lapox® is a registered trademark of Atul Ltd.

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