

LAPOX[®] ARL-135 LV | AH-411



Technical Data Sheet | Polymers Business

Ambient cure epoxy system

Lapox ARL-135 LV	100	pbw
Lapox AH-411	24	pbw

Description

Lapox ARL-135 LV is a modified, very low viscosity epoxy resin which can be used with various hardeners for making fiber reinforced (FRP) parts. Lapox AH-411 is a low viscosity room temperature curing liquid polyamine hardener. Initial mix viscosity of this system is very low and which helps in better fiber impregnation. Properly cured laminate provides very high glass transition temperature.

Applications

Laminates for industrial and structural use
Recreational products

Processing

Filament winding
Pressure moulding
Pultrusion
Resin transfer moulding (RTM)

Typical specifications

Lapox ARL-135 LV

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 2
Viscosity at 25°C	m Pas	ASTM D2196	1,000 - 1,500
Epoxy content	Eq/kg	ASTM D1652	5.40 - 5.88
Specific gravity at 25°C	-	ASTM D792	1.1 - 1.2

Lapox AH-411

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 1
Viscosity at 25°C	m Pas	ASTM D2196	10 - 20
Specific gravity at 25°C	-	ASTM D792	0.89 - 0.90

Processing properties

Properties	Unit	Test method	Values
Mixing ratio (by weight)	-	Visual	Resin: 100 Hardener: 24
Initial mix viscosity	m Pas	ASTM D2196	250 - 400 / 25°C
Pot life at 25°C	Minutes	ASTM D2471	90 - 120
Curing shrinkage	%	-	1.5
Curing schedule	°C / hours	-	80°C / 2 hours + 100°C / 2 hours + 120°C / 2 hours + 150°C / 4 hours

Typical properties of neat cured system

Curing schedule: 80°C / 2 hours + 100°C / 2 hours + 120°C / 2 hours + 150°C / 4 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	3 - 6
Elastic modulus in tension	g Pa	ISO 527	2.7 - 3.2
Flexural strength	m Pa	ISO 178	115 - 130
Flexural elongation at break	%	ISO 178	6 - 10
Elastic modulus in flexural	g Pa	ISO 178	2.7 - 3.2
Glass transition temperature (DSC)	°C	ISO 11357 - 2	125 - 135
Water absorption 25°C / 24 hours	% w/w	ISO 62	Max 0.2

Packaging

Lapox ARL-135 LV is available in 30 kg, 110 kg and 240 kg carboys. Lapox AH-411 is available in 1 kg HDPE bottles. Other packing may be considered on request.

Storage and handling

Lapox ARL-135 LV and hardener Lapox AH-411 have shelf-life of 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 to such operators then the resin and hardener 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.

Contact

E-mail: polymers@atul.co.in
Website: www.atul.co.in

Note

Lapox[®] is a registered trademark of Atul Ltd.

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Manufacturing site

Atul 396 020, Gujarat, India

Telephone: (+91 2632) 230000 | 233261

E-mail: contact@atul.co.in

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