

LAPOX[®] ARL-140 | AH-419



Technical Data Sheet | Polymers Business

Ambient cure high Tg epoxy system

Lapox ARL-140	100	pbw
Lapox AH-419	42	pbw

Description

Lapox ARL-140 is specially modified, low viscosity epoxy resin for high performance applications. Lapox AH-419 is a modified polyamine hardener suitable to cure epoxy resin at ambient temperature. The low initial viscosity of this system at elevated temperature ensures fast and complete impregnation of reinforcing fibers such as glass, carbon and polyamide and allows composite components to be produced by contact pressure, vacuum or pressure bag techniques, filament windings, and resin infusion (RI).

Applications

All types of tools
Structural composite components used in static and dynamic conditions
This resin can be suitably applied for fabrication of high temperature resistant FRP moulds

Processing

Contact pressure moulding techniques
Filament winding
Resin transfer moulding (RTM)
Resin infusion
Wet lay-up

Typical specifications

Lapox ARL-140

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 15
Viscosity at 25°C	m Pas	ASTM D2196	12,000 - 18,000
Epoxy content	Eq/kg	ASTM D1652	8.00 - 9.09
Specific gravity at 25°C	-	ASTM D792	1.10 - 1.20

Lapox AH-419

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 2
Viscosity at 25°C	m Pas	ASTM D2196	10 - 30
Specific gravity at 25°C	-	ASTM D792	0.9 - 1.0

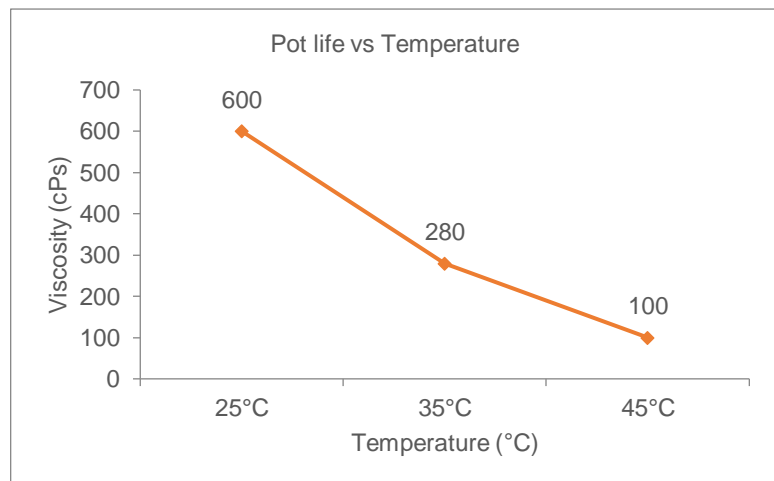
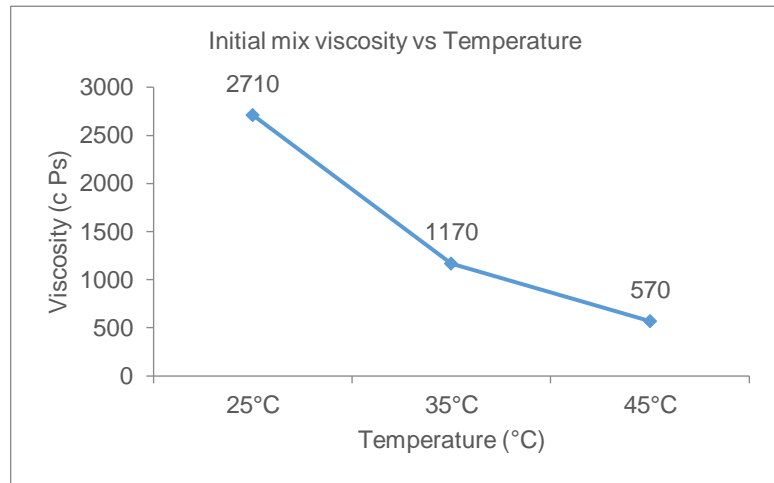
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Processing properties

Properties	Unit	Test method	Values
Mixing ratio (by weight)	-	Visual	Resin: 100 Hardener: 42
Initial mix viscosity	m Pas	ASTM D2196	400 - 600 at 25 °C 350 - 450 at 40 °C 300 - 400 at 50 °C
Pot life at 25°C	Minutes	ASTM D2471	6 hours - 8 hours at 25°C 120 - 160 at 40 °C 35 - 50 at 50°C
Curing shrinkage	%	-	1.5
Curing schedule	°C / hours	-	80°C / 2 hours + 120°C / 4 hours + 160°C / 2 hours + 200°C / 4 hours



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Typical properties of neat cured system

Curing schedule: 80°C / 2 hours + 120°C / 4 hours + 160°C / 2 hours + 200°C / 4 hours
Determined on standard test specimen at 25°C

Properties	Unit	Test method	Values
Cured density	g/cm ³	DIN 55990	-
Tensile strength	m Pa	ISO 527	40 - 45
Elongation at break	%	ISO 527	1.2 - 1.6
Elastic modulus in tension	g Pa	ISO 527	3.2 - 3.8
Flexural strength	m Pa	ISO 178	80 - 120
Flexural elongation at break	%	ISO 178	1.5 - 3.5
Elastic modulus in flexural	g Pa	ISO 178	3.2 - 3.8
Glass transition temperature (DSC)	°C	ISO 11357 - 2	190 - 220
Water absorption 25°C / 24 hours	% w/w	ISO 62	Max 0.15

Packaging

Lapox ARL-140 is available in 30 kg, 110 kg and 240 kg carboy. Lapox AH-419 is available in 1 kg HDPE bottles. Other packing may be considered on request.

Storage and handling

Lapox ARL-140 has shelf-life of 6 months. Resin viscosity keeps on increasing with storage after shelf-life. Lapox AH-419 have a shelf-life of at least 1 year if stored in its original container away from humidity and excessive heat. Care must be taken to avoid direct contact with skin as far as possible. If contact does occur, then wash 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

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Note

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

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