

LAPOX® ARC-18 | AH-123



Technical Data Sheet | Polymers Business

Hot cure prefilled epoxy potting system

Lapox ARC-18	100	pbw
Lapox AH-123	30	pbw

Description

Lapox ARC-18 is a pre-filled liquid modified epoxy resin suitable for potting application. Lapox AH-123 is a low viscosity liquid curing agent suitable for elevated temperature cure.

Advantages

Excellent workability
Good adhesion with metallic and non-metallic surfaces
Good penetration
Helps to provide leak proof barrier to humidity for casted components
Relatively low exotherm

Applications

Electrical and electronics applications for medium and high voltage applications like ignition coils, fly back transformers, regulators, rectifiers etc.

Processing

Casting
Encapsulation
Potting

Typical specifications

Lapox ARC-18

Properties	Unit	Test method	Values
Appearance	-	Visual	Pre-filled, flowable liquid
Colour	GS	ASTM D1544	White to off-white
Viscosity at 25°C	m Pas	ASTM D2196	70,000 - 1,50,000
Specific gravity at 25°C	-	ASTM D792	1.70 - 1.80
Flash point	°C	ASTM D93	> 150
Shelf-life	Months	-	6

Lapox AH-123

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear to pale-yellow
Colour	GS	ASTM D1544	Max 4
Viscosity at 25°C	m Pas	ASTM D2196	40 - 80
Specific gravity at 25°C	-	ASTM D792	1.16 - 1.23
Flash point	°C	ASTM D93	165
Vapour pressure at 20°C	Pa	ASTM D323	1
at 60°C			10
Shelf-life	Year	-	1

Processing properties

Properties	Unit	Test method	Values
Mixing ratio (by weight)	-	Visual	Resin: 100 Hardener: 30
Initial mix viscosity at 25°C	m Pas	ASTM D2196	2,500 - 3,500
Gel time	Minutes	DIN 16945 / 6.3.1	110 - 140 / 80°C 30 - 40 / 100°C
Curing schedule	°C / hours	-	80°C / 3 hours + 130°C / 2 hours

Processing recommendations

Since Lapox ARC-18 contains inorganic filler of higher density, there are possibility of filler to settle down upon storage. It is always recommended to stir the product thoroughly before use. Slightly raising the resin temperature to 60°C will help in easy mixing. After ensuring homogeneity of resin, add recommended amount of hardener Lapox AH-123 directly into it. Usually resin and hardener are mixed in small lots to avoid thickening which may interfere with penetration into intricate parts. Perform mixing at 50°C to 60°C under vacuum of 0.5 mbar to 5 mbar. The process of mixing and pouring into the mould must be completed rapidly to avoid thickening or pre-gelling of the resin mix. Pour air free hot mix into preheated mould, up to 80°C, under vacuum and ensure void free potting | casting. A good release agent must be applied thinly on the surface of the mould to ensure smooth surface finish and effortless de-moulding. Lapox K-28 is recommended as a good resale agent from Lapox range of products.

Typical properties of filled cured system

Composition: Lapox ARC-18 (100) + Lapox AH-123 (30)
Curing schedule 80°C / 3 hours + 130°C / 2 hours
Determined on standard test specimen at 25°C

Properties	Unit	Test method	Values
Cured density	g/cm ³	DIN 55990	1.5
Tensile strength	m Pa	ISO 527	30 - 50
Flexural strength	m Pa	ISO 178	70 - 90
Flexural elongation at break	%	ISO 178	1.5 - 2.5
Impact strength	kJ/m ²	ISO 179	> 2.5
Glass transition temperature (DSC)	°C	ISO 11357 - 2	105 - 120
Co-efficient of linear thermal expansion (Mean value for temperature range 20°C - 80°C)	K ⁻¹	DIN 53752	< 50 X 10 ⁻⁶
Thermal conductivity	W/mk	ISO 8894 - 1	0.8 - 0.9
Water absorption 25°C / 10 days	% w/w	IEC 60062	0.10 - 0.15

Typical electrical properties of filled cured system

Cured at: 80°C / 3 hours + 130°C / 2 hours

Properties	Unit	Test method	Values
Breakdown strength (50 Hz, 25°C)	kV/mm	IEC 60243	> 20
Loss factor (50 Hz, 25°C)	%	IEC 60250	0.8 - 1.5
Dielectric constant (50 Hz, 25°C)	-	IEC 60250	3.0 - 4.0
Volume resistivity at 1,000 V, 25°C	ohm.cm	IEC 60093 / DIN 53482	> 10 ¹⁵
Arc resistance	Seconds	IEC 61621 / ASTM D495	180 - 190
Tracking resistance	V	IEC 60112	> 600

Packaging

Lapox ARC-18 is available in 25 kg MS drums and Lapox AH-123 is available in 30 kg carboys. Other packing may be considered on request.

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Storage and handling

Lapox ARC-18 and Lapox AH-123 should be stored in a cool and dry place, preferably in an original sealed container and should not be exposed to direct sunlight. Resin should be stored between 15°C and 25°C and hardener Lapox AH-123 can be stored at room temperature (RT), away from humidity and excessive heat. Under these conditions, the shelf-life will correspond to the time stated in respective table in current TDS. Partly used containers should be closed immediately after use. There are possibility of filler to settle down upon storage. It is always recommended to stir the product thoroughly before use. Slightly raising the resin temperature to 60°C will help in easy mixing. 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.

Manufacturing site

Atul 396 020, Gujarat, India
Telephone: (+91 2632) 230000 | 233261
E-mail: contact@atul.co.in

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