

## Ambient cure low viscous epoxy casting system

**Description** Lapox XR-110 is a medium viscosity modified epoxy resin based on bisphenol-A. Lapox XH-68 is a medium viscosity modified polyamide curing agent. When both components are mixed in recommended ratio, provides excellent flexibility, very low water absorption and low exotherm during cure at room temperature. The system is used for potting and encapsulation of flexible cable joints. Appropriately cured mass shows relatively high elongation, toughness, excellent resistance to impact and thermal shock.

**Advantages** Excellent flexibility and toughness  
Faster reactivity  
Good electrical insulation properties  
Low exotherm

**Applications** Potting and encapsulation of flexible cables

### Typical specifications

Test	Unit	Reference	Value	
			Resin	Hardener
Description	-	Visual	Clear, yellow liquid	Dark-brown liquid
Colour	GS	ASTM D1544	Max 5	Max 18
Viscosity at 25°C <sup>1</sup>	m Pas	ASTM D2196	2,500 - 5,000	2,500 - 5,000
Density	g/cc	ASTM D792	1.16 - 1.18	0.98 - 1.01

<sup>1</sup>Viscosity by Brookfield viscometer

### Mix specifications

Test	Unit	Reference	Value
Mixing ratio (resin : hardener)	w/w	-	100 : 100
Mix viscosity at 25°C	m Pas	ASTM D2196	3,000 - 5,000
Pot life at 5°C <sup>1</sup>	Minutes	ASTM D2471	90 - 100
Pot life at 25°C <sup>1</sup>	Minutes	ASTM D2471	30 - 45
Pot life at 40°C <sup>1</sup>	Minutes	ASTM D2471	10 - 15
Peak exotherm temperature <sup>2</sup>	°C	ASTM D2471	Max 120

<sup>1</sup>Pot life of 300 g mix mass in plastic disposable cup by 'Gardco' gel timer

<sup>2</sup>Total 100 g mix mass in plastic disposable cup at 25°C

### After cure specifications

Test	Unit	Reference	Value
Hardness <sup>1</sup>	Shore D	ISO/ R868	40 - 60
Shrinkage	%	ISO 3521	Min 6.5
Water absorption <sup>2</sup>	mg/cm <sup>2</sup>	ASTM D570	Min 15
Water absorption - Variation of weight <sup>2</sup>	%	ASTM D570	Min 5
Water absorption - Variation of hardness <sup>2</sup>	%	ISO/R868	Min 17.4 (D) Min 62.4 (A)
Loss of weight <sup>3</sup>	%		Min 5

<sup>1</sup>Hardness checked for 20 mm casting, after 24 hours curing

<sup>2</sup>Casted specimen (2 mm) immerse in water for 4 weeks at 70°C

<sup>3</sup>Casted specimen (2 mm) kept for 4 weeks at 120°C

## Processing

**Mixing:** Mixing is critical and must be accurate. Take resin and hardener in desired ratios. The combined liquids must be thoroughly mixed, manually or mechanically to completely remove any haziness or streaks. Scrap the sides and base of the mixing pot before transferring the mix to a desired mould for casting. It is advisable to apply the vacuum to remove air from the mix just prior to pouring into the mould. It is important to mix small quantity at a time as epoxy systems tend to give exotherm when kept in a mass.

**Applications:** Mix mass should then be poured into a mould. The mould can be hard or made of silicone rubber. Moulding can be carried out by gravity or under vacuum. It does not trap air easily and does not heat up when used properly. Excessive humidity (above ~65%), low daylight and low temperature (less than 20°C) may retard the curing. Cast system may not work effectively in the monsoon season. Ensure ambient material and workshop temperature is between 20°C and 35°C and humidity level below 65%. Filled mould can also be kept under vacuum to achieve air free components.

## Troubleshooting

Problem	Cause
Uncured after 24 hours to 48 hours	Wrong mix ratio and   or low ambient temperature
Sticky   greasy   hazy surface	High humidity
Air bubbles are entrapped	Mixing was too fast and did not have time to release air

## Packaging

Lapox XR-110 is available in 200 kg carboys and Lapox XH-68 is available in 100 kg carboys. Other packing may be considered on request.

## Storage and handling

Lapox XR-110 and Lapox XH-68 should be stored in a cool and dry place, preferably in a sealed container and should not be exposed to direct sunlight. This product has a shelf-life of 1 year, if stored in its original container between 2°C and 40°C away from humidity and excessive heat. 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, it 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](mailto:polymers@atul.co.in)  
Website: [www.atul.co.in](http://www.atul.co.in)

## Note

Lapox<sup>®</sup> 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](mailto:contact@atul.co.in)

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