

<b>Ambient cure epoxy tooling system</b>	Lapox ARL-138	100	pbw
	Lapox AH-417	30	pbw

**Description** Lapox ARL-138 is a modified, low viscosity epoxy resin for high performance applications and Lapox AH-417 is a polyamine hardener suitable to cure epoxy resin at ambient temperature. The low initial viscosity of this system ensures fast and through 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). The components cured at room temperature provides good handling strength, the optimum properties, however, will only be obtained after post curing at temperature 120°C or more. Fully cured components prepared by this system can be used for high performance requirements at elevated temperature

**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 infusion  
Resin transfer moulding (RTM)  
Wet lay-up

**Typical specifications**

**Lapox ARL-138**

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 2
Viscosity at 25°C	m Pas	ASTM D2196	1,200 - 1,800
Epoxy content	Eq/kg	ASTM D1652	5.98 - 6.45
Specific gravity at 25°C	-	ASTM D792	1.10 - 1.15

**Lapox AH-417**

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear liquid
Colour	GS	ASTM D1544	Max 2
Viscosity at 25°C	m Pas	ASTM D2196	5 - 20
Specific gravity at 25°C	-	ASTM D792	0.90 - 0.95

### Processing properties

Properties	Unit	Test method	Values
Mixing ratio (by weight)	-	Visual	Resin: 100 Hardener: 30
Initial mix viscosity	m Pas	ASTM D2196	200 - 300 / 25°C
Pot life at 25°C	Minutes	ASTM D2471	90 - 150
Curing shrinkage	%	-	1.5
Curing schedule	°C / hours	-	80°C / 2 hours + 100°C / 2 hours + 120°C / 8 hours

### Typical properties of neat cured system

Curing schedule: 80°C / 2 hours + 100°C / 2 hours + 120°C / 8 hours  
Determined on standard test specimen at 25°C

Properties	Unit	Test method	Values
Cured density	g/cm <sup>3</sup>	DIN 55990	-
Tensile strength	m Pa	ISO 527	65 - 75
Elongation at break	%	ISO 527	4 - 6
Elastic modulus in tension	g Pa	ISO 527	2.9 - 3.1
Flexural strength	m Pa	ISO 178	115 - 125
Flexural elongation at break	%	ISO 178	5 - 10
Elastic modulus in flexural	g Pa	ISO 178	2.9 - 3.1
Glass transition temperature (DSC)	°C	ISO 11357 - 2	100 - 110
Water absorption 25°C / 24 hours	% w/w	ISO 62	Max 0.15

### Packaging

Lapox ARL-138 is available in 30 kg, 110 kg and 240 kg carboys. Lapox AH-417 is available in 1 kg HDPE bottles. Other packing may be considered on request.

### Storage and handling

Lapox ARL-138 and Lapox AH-417 has self-life up to 2 years in their sealed original container. 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. Hardener is sensitive to moisture. Container must be closed properly immediately after use. 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, consult doctor immediately. 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.

# LAPOX<sup>®</sup> ARL-138 | AH-417

Technical Data Sheet | Polymers Business



## 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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