

# LAPOX<sup>®</sup> L-12 | K-5200

Technical Data Sheet | Polymers Business



## Hot cure epoxy system

Lapox L-12	100	pbw
Lapox K-5200	24	pbw

## Description

Lapox L-12 is a liquid, unmodified medium viscosity epoxy resin which can be used with various hardeners for making fiber reinforced composites. Epoxy curing agent Lapox K-5200 is a liquid amine curing agent. It is often preferred over Diamino diphenyl methane (DDM or MDA) in epoxy resin systems, as the system does not give stains. This hardener is recommended to achieve very high Tg along with long pot life.

## Applications

FRP components for high temperature resistance applications for general electrical and engineering items.

## Processing

Filament winding  
Pultrusion  
Resin transfer moulding (RTM)  
Wet-lay up

## Typical specifications

### Lapox L-12

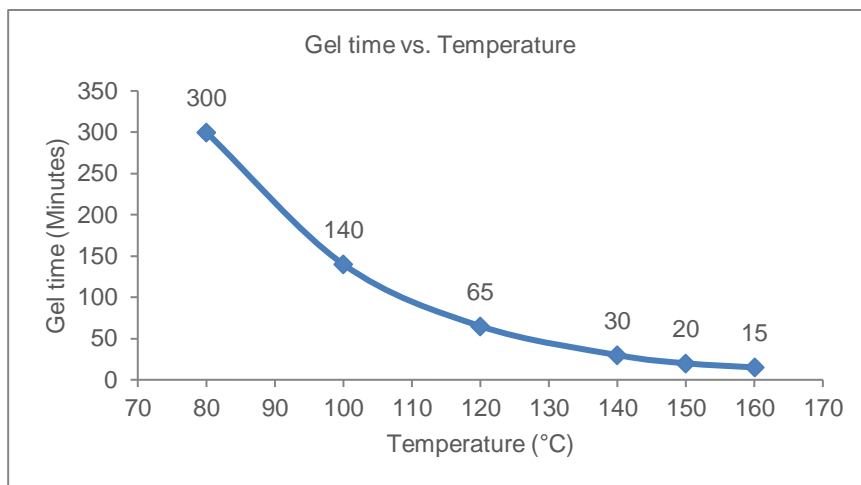
Properties	Unit	Test method	Values
Appearance	-	Visual	Clear viscous liquid
Colour	GS	ASTM D1544	Max 1
Viscosity at 25°C	m Pas	ASTM D2196	9,000 - 12,000
Epoxy content	Eq/kg	ASTM D1652	5.26 - 5.55
Specific gravity at 25°C	-	ASTM D792	1.1 - 1.2

### Lapox K-5200

Properties	Unit	Test method	Values
Appearance	-	Visual	Clear, brownish liquid
Viscosity at 25°C	m Pas	ASTM D2196	150 - 180
Specific gravity at 25°C	-	ASTM D792	1.0 - 1.1
Shelf-life	Years	-	2

## Processing properties

Properties	Unit	Test method	Values
Mixing ratio (by weight)	-	Visual	Resin: 100 Hardener: 24
Initial mix viscosity	m Pas	ASTM D2196	4,000 - 6,000 / 25°C
Pot life at 25°C	Minutes	ASTM D2471	2 - 3 days at 20°C 5 hours at 80°C
Gel time	Minutes	DIN 16945 / 6.3.1	See chart (below)
Curing schedule	°C / hours	-	100°C / 2 hours + 160°C / 2 hours + 180°C / 2 hours



## Typical properties of neat cured system

Composition:

Curing schedule: 100°C / 2 hours + 160°C / 2 hours + 180°C / 2 hours

Determined on standard test specimen at 25°C

Properties	Unit	Test method	Values
Tensile strength	m Pa	ISO 527	50 - 70
Elongation at break	%	ISO 527	2.5 - 3.5
Elastic modulus in tension	g Pa	ISO 527	2.7 - 3.3
Flexural strength	m Pa	ISO 178	90 - 110
Flexural elongation at break	%	ISO 178	4 - 8
Elastic modulus in flexural	g Pa	ISO 178	2.7 - 3.3
Compressive strength	m Pa	ISO 604	120 - 140
Glass transition temperature (DSC)	°C	ISO 11357 - 2	180 - 190
Water absorption 25°C / 24 hours	% w/w	ISO 62	0.25

## Typical electrical properties of filled cured system

Properties	Unit	Test method	Values
Breakdown strength (50 Hz, 25°C)	kV/mm	IEC 60243	17 - 20
Loss factor (50 Hz, 25°C)	%	IEC 60250	0.02
Dielectric constant (50 Hz, 25°C)	-	IEC 60250	3 - 4
Volume resistivity at 1,000 V, 25°C	ohm.cm	IEC 60093 / DIN 53482	10 <sup>15</sup>
Surface resistivity at 1,000 V, 25°C	ohm.cm	IEC 60093 / DIN 53482	
Arc resistance	Seconds	IEC 61621 / ASTM D495	> 180
Tracking resistance	V	IEC 60112	400

## Packaging

Lapox L-12 is available in 30 kg, 110 kg and 240 kg carboys. Lapox K-5200 is available in 1 kg HDPE bottles. Other packing may be considered on request.

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## Storage and handling

Lapox L-12 and Lapox K-5200 have a shelf-life of at least 2 years 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<sup>®</sup> is a registered trademark of Atul Ltd.

## Manufacturing site

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