LAPOX® A-16 | K-6

Technical Data Sheet | Polymers Business

General purpose adhesive epoxy system

Description

Lapox A-16 is an unmodified liquid epoxy resin based on bisphenol A. Lapox K-6 is clear transparent aliphatic amine. When resin and hardener are used in appropriate ratio, it provides excellent adhesion and mechanical strength. This system commonly employed for civil engineering applications where low viscosity and fast setting at ambient temperature is desired.

Advantages

Faster reactivity
Low viscosity

Applications

Gel coat
Mortar and mastics
Stone processing (Crack filling and coating)

Typical specifications

Test	Unit	Reference	Value	
			Resin	Hardener
Description	-	Visual	Clear viscous liquid	Clear liquid
Colour	GS	ASTM D1544	Max 1	Max 3
Viscosity at 25°C[1]	m Pas	ASTM D2196	10,000 - 12,000	10 - 20
Epoxy value	eq/kg	ASTM D1652	5.30 - 5.45	-
Density	g/cc	ASTM D792	1.1 - 1.2	0.97 - 0.99

[1]Viscosity by Brookfield viscometer

Mix specifications

Test	Unit	Reference	Value
Mixing ratio (resin : hardener)	By weight	-	100 : 10
Mix viscosity at 25°C	m Pas	ASTM D2196	5,000 - 8,000
Pot life at 25°C[1]	Minutes	ASTM D2471	30 - 40

[1]Pot life of 100 g mix mass at 25 ± 1°C in plastic disposable cup by 'Gardco' gel timer

After cure specifications

Test[1]	Unit	Reference	Typical values
Hardness[2]	Shore D	ISO 868	70 - 80
Lap shear strength[3]	Kg/cm^2	ASTM D1002	100 - 120
Tensile strength	N/mm^2	ISO 527	50 - 60
Compressive strength	N/mm^2	ISO 604	110 - 120
Flexural strength	N/mm^2	ISO 178	130 - 150
Impact strength	KJ/m^2	ISO 180	17 - 20
Elastic modulus in tension	N/mm^2	ISO 527	4,400 - 4,600
Coefficient of linear thermal expansion	$10^{-6}/°C$	ISO 11359-2	64 - 68
Thermal conductivity	w/mk	ISO 22007-2	0.24
Water absorption (20°C/10 days)	% w/w	ISO 62	0.5 - 0.6
Water absorption (100°C/1 h)	% w/w	ISO 62	0.8 - 1.0

[1]Properties evaluate after 7 days of curing at 25°C.
[2]Hardness checked for 20 mm casting, after 24 hours curing at 30°C.
[3]Lap shear strength checked on sand blasted aluminum to aluminum lap joint cured at room temperature for 24 hours.

Processing

Mixing: Mixing is critical and must be accurate. Take resin and hardener in desired ratio. The mass must be thoroughly mixed, manually or mechanically to homogeneous consistency. Scrap the sides and base of the mixing pot before transferring the mix. It is important to mix small quantity at a time as this epoxy systems has short pot life and tend to give exotherm.

Applications: After through mixing of resin and hardener, the mix mass applied by brush on the substrate. Appropriately bonded joints need to cure for 24 hours at room temperature. Excessive humidity (above ~65%) and low temperature (less than 20°C) may retard the curing process. Optimum properties achieved after 7 days of curing at room temperature.

Troubleshooting

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

Packaging

Lapox A-16 is available in 240 kg HDPE carboy and metal drums. Lapox K-6 is available in 30 kg HDPE carboy. Other packing may be considered on request.

Storage and handling

Lapox A-16 and Lapox K-6 should be stored in a cool and dry place, preferably in a sealed container and should not be exposed to direct sunlight. Lapox K-6 curing agent is hygroscopic in nature and may pick up moisture and carbon dioxide from the atmosphere. Lapox A-16 has shelf-life of at least two years while Lapox K-6 has shelf life of one year, if stored in its original container between 2°C and 40°C away from humidity, air, direct sunlight 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

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Note

Lapox® is a registered trademark of Atul Ltd.

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