

## Chemical resistance epoxy system

### Description

Lapox B-11 is an unmodified epoxy resin based on bisphenol-A. Lapox K-42 is an accelerated version of Lapox K-41. This can be used with Lapox K-41 or alone depending upon pot life requirements. Reactivity or pot life of the mix can be altered by mixing proportions of Lapox K-41 and Lapox K-42. When resin and hardeners are used in appropriate ratios, it provides an excellent chemical resistance coupled with high mechanical properties, resistant to amine blush and high gloss. The perfectly cured mass will exhibit resistance to strong acid, alkali and various solvents.

### Applications

Chemical resistant tank linings  
High solids coatings  
Industrial flooring  
Secondary contaminate linings

### Advantages

Adjustable pot life  
Excellent chemical and thermal resistance  
High mechanical strength  
Solvent free

### Typical specifications

Test	Unit	Reference	Value		
			Lapox B-11	Lapox K-41	Lapox K-42
Description	-	Visual	Clear, viscous liquid	Brown-yellow liquid	Dark-brown liquid
Colour	GS	ASTM D1544	Max 1	Max 13	Max 16
Viscosity at 25°C <sup>1</sup>	m Pas	ASTM D2196	11,000 - 15,000	3,800 - 5,800	15,000 - 21,000
Epoxy value	Eq/kg	ASTM D1652	5.25 - 5.45	-	-
Amine value	Eq/kg	ASTM D2073	-	4.7 - 5.1	4.4 - 4.8

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

### Mix specifications

Test	Unit	Reference	System-1	System-2	System-3
Lapox B-11	pbw	-	100	100	100
Lapox K-41	pbw	-	50	45	30
Lapox K-42	pbw	-	10	15	20
Mixing ratio	w/w	-	100:60	100:60	100:60
Mix viscosity <sup>1</sup>	m Pas	ASTM D2196	8,000 - 10,000	10,000 - 12,000	12,000 - 15,000
Pot life <sup>2</sup>	Minutes	ASTM D2471	125 - 140	90 - 100	50 - 60

<sup>1</sup>Viscosity by Brookfield viscometer at 30 ± 1°C

<sup>2</sup>Pot life of 100 g mix mass at 25 ± 1°C in plastic disposable cup by 'Gardco' gel timer

## Chemical resistance of coated specimen<sup>1</sup>

	Reagents	Conclusion
Water	Deionised water	Resistant
	Sea water	Resistant
Oils	Castor oil	Resistant
	Linseed oil	Resistant
	Pine oil	Resistant
	Fish oil	Resistant
	Crude Petroleum	Resistant
Hydrocarbons	Fuel oil	Resistant
	Motor spirit	Resistant
	Benzene	Failure
	Hexane	Resistant
	Toluene	Failure
	Dipentene	Resistant
Alcohols	Methanol	Failure
	Ethanol, 95%	Failure
	Ethanol, 50%	Resistant
	Isopropanol	Resistant (up to 3 months)
	n-Butanol	Resistant (up to 3 months)
	Octanol	Resistant
Glycols	Ethylene Glycol	Resistant
	Glycerol	Resistant
	Propylene Glycol	Resistant
	Poly Ethylene Glycol	Failure
Ketones	Methyl Ethyl Ketone	Failure
	Acetone	Failure
	Methyl isobutyl ketone (MIBK)	Failure
Acids, anhydrides and aldehydes	Acetic Acid (Glacial)	Resistant
	Acetic Acid, 10%	Failure
	Acetic Anhydride	Resistant
	Formaldehyde, 37%	Failure
	Formic Acid	Resistant (up to 3 months)
	Lactic Acid	Failure
Acids	Sulfuric Acid (conc.)	Failure
	Sulfuric Acid, 50%	Resistant
	HCl, 30%	Failure
	HNO <sub>3</sub> (conc.)	Failure
	HNO <sub>3</sub> , 10%	Resistant
	Phosphoric acid, 43%	Resistant
Alkalis	Liquor Ammonia	Resistant
	Ammonium Hydroxide, 10%	Resistant
	Caustic Soda, 30%	Resistant
Chlorinated hydrocarbons	Carbon tetrachloride (CCl <sub>4</sub> )	Resistant (up to 3 months)
	Chlorobenzene	Failure
	Epichlorohydrine	Failure
	Tri chloroethylene	Failure
Plasticizers	Di butyl phthalate	Resistant
	Di octyl phthalate	Resistant
	Tri cresyl phosphate	Resistant
Food stuffs and beverages	Beer	Resistant

Wine	Resistant
Strong liquors	Resistant (up to 3 months)
Fruit juices	Resistant
Molasses	Resistant

<sup>1</sup>Chemical resistance as per ASTM D 543 of specimen cured at 25°C for 7 days. Chemical resistant data with one year immersion in selected reagents were presented in above table.

## Processing

**Surface preparation:** The adherents must be thoroughly degreased with a good degreasing solvent (e.g. toluene, acetone trichloroethylene) and abraded with coarse emery paper or chemically etched. Inadequately pre-treated substrates may not bond satisfactorily.

**Application:** The mixed mass is coat by brush, roller or spray. The mix must be used within its pot life. Mix mass should be poured into flat or open trays to maximise working time.

**Curing:** Curing normally takes place at room temperature within about 24 hours depending on the ambient temperature but may be accelerated by the application of heat.

## Packaging

Lapox B-11, Lapox K-41 and Lapox K-42 are available in 200 kg carboys. Other packing may be considered on request.

## Storage and handling

Lapox B-11, Lapox K-41 and Lapox K-42 should be stored in a cool and dry place, preferably in a sealed container and should not be exposed to direct sunlight. Lapox B-11 has a shelf-life of 2 years while Lapox K-41 and Lapox K-42 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

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## Note

Lapox<sup>®</sup> is a registered trademark of Atul Ltd.

## Manufacturing site

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