

## Ambient cure high viscous adhesive system

### Description

Lapox A-83 and Lapox K-83 is two component modified, viscous epoxy adhesive system. When both components are mixed in recommended ratio and cured appropriately at room temperature, excellent bond strength can be achieved with metal and non-metal substrates. Excellent electrical insulation properties along with thermal shock resistance are special features which makes this system ideal for heavy duty electrical machines operating in extreme conditions. Faster productivity can be achieved if curing is performed at higher temperature, i.e. 40°C to 60°C.

### Applications

Automobile  
High performance joints for heavy duty electrical machines  
Railways

### Advantages

High bond strength  
High electrical insulation properties  
High mechanical strength even in dynamic conditions  
Thixotropic, can be use for gap filling  
Water and chemical resistant

### Typical specifications

Test	Unit	Reference	Value	
			Resin	Hardener
Description	-	Visual	Off-white paste	Off-white paste
Viscosity at 25°C <sup>1</sup>	m Pas	ASTM D2196	30,000 - 50,000	15,000 - 25,000
Density	g/cc	ASTM D792	1.65 - 1.75	1.65 - 1.75
Flash Point	°C	-	110	> 104

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

### Mix specifications

Test	Unit	Reference	Value
Mixing ratio (resin : hardener)	w/w	-	100 : 40
Mix viscosity at 25°C	m Pas	ASTM D2196	20,000 - 30,000
Pot life <sup>1</sup>	Minutes	ASTM D2471	60 - 80
Curing schedule	-	-	40°C / 16 hours 60°C / 2 hours 80°C / 30 minutes

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

### After cure specifications

Test	Unit	Reference	Typical Value
Hardness <sup>1</sup>	Shore D	ISO 868	80
Tensile Strength <sup>2</sup>	M Pa	ASTM D638	40
Tensile Modulus <sup>2</sup>	M Pa	ASTM D638	4,500
Volume Resistivity	ohms-cm	IEC 60093	2 x 10 <sup>17</sup>
Coefficient of thermal expansion (18°C to 93°C)	in/in/°C	ASTM E831	1.9 x 10 <sup>-6</sup>
Dielectric Strength	KV/mm	IEC 60243	20
Lap shear strength at 25°C <sup>3</sup>	kg/cm <sup>2</sup>	ASTM D1002	125

<sup>1</sup>Hardness checked after 24 hours at 25°C

<sup>2</sup>Checked at 25°C after curing for 16 hours at 40°C

<sup>3</sup>Lap shear strength on prepared aluminum strips after 24 hours curing

# LAPOX<sup>®</sup> A-83 | K-83

(New Code ARA-14 | AH-720)

Technical Data Sheet | Polymers Business



## 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. For special treatments, please refer to the specific Instruction sheet on this subject or to IS13199:191 "Adhesives-Guidelines for surface preparation for adhesive bonding".

**Application:** The mixed mass is applied by brush or spatula on the surface to be adhered. The mix mass must be used within its pot-life. A layer of adhesive 0.002 to 0.004 inches (0.05 to 0.10mm) thick will normally impart the greatest lap shear strength to a joint.

**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 A-83 is available in 20 kg, 25 kg and 50 kg HDPE carboys. Lapox K-83 is available in 10 kg, 20 kg and 40 kg HDPE carboys. Other packing may be considered on request.

## Storage and handling

Lapox A-83 and Lapox K-83 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 two years for Lapox A-83 and one year for Lapox K-83, if stored in its original container between 2°C and 40°C away from humidity and excessive heat. Hardener K-83 is sensitive to moisture; hence proper care must be taken to avoid its exposure to humidity and moisture. 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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