



TECHNICAL DATA SHEET

VILEPOX® HK-9 UV-resistant resin system

Field of application: An epoxy resin hardening at room-temperature used for UV-resistant castings, composites and LEDs exposed to outdoor conditions e.g. sunlight. Thanks to its low viscosity and favourable potlife it gives convenient application properties.

Benefits:

- crystal-clear, glassy appearance
- excellent UV- and weather resistance
- favourable application properties
- excellent dielectric properties
- excellent mechanical properties, hardness and shock resistance
- excellent chemical resistance
- solvent-free system
- excellent adhesion to most of the structures, but does not adhere to polyethylene, polypropylene, silicone and non-stick surfaces
- hardened material is physiologically harmless

Technical properties of the components:

	Vilepox® HK-9 „A”	Vilepox® HK-9 „B”
Characteristics	A modified cycloaliphatic epoxy resin free of solvents	A low viscosity, polyamine based, solvent-free hardener.
Appearance	clear, transparent liquid	colourless, transparent liquid
Density (at 25 °C), g/cm³	1,19 - 1,23	0,93-0,96
Viscosity (at 25 °C), mPas	450 - 1100	8-15
Flash-point, °C	> 160	
Non-volatile matter content	99,8	99,8
Total chlorine-content, %	max. 0,4	
Shelf-life	min. 12 months*	min. 12 months
Storage	min. 12 months if stored in dry place at 5-20°C, in tightly sealed original containers.	



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Mixing ratio:

Vilepox HK-9 component „A”

100 parts by mass (kg)

Vilepox HK-9 component „B”

36 parts by mass (kg)

	Properties of the mixture:
Gel time (at 25°C, 100 g), min	560-630
Gelnorm (18 ml, 25°C, min)	550-650
Density of the mixture (25 °C, g/cm ³)	1,12-1,15
Initial viscosity, (at 25°C), mPas	150-350
Potlife:	
Time untill reaching double viscosity, 100 g, 25 °C, min	appr. 100
Time untill reaching tripple viscosity, 100 g, 25 °C, min	appr. 130
Viscosity 15000 mPass, 100 g, 25 °C, min	appr. 340
Hardening time at room temperature, hours	appr.48
Time of hardening, (at 40°C, 4 g, max. 2mm thickness) , hours	8-9
Time of hardening, (at 60 °C, 4 g, max. 2mm thickness) , hours	appr. 2
Time of hardening, (at 80 °C, 4 g, max. 2mm thickness) , hours	appr. 1
Full hardening time at room temperature, days	7

	Properties of the hardened material*:
Density at 24 °C), g/cm ³	1,05-1,13
Compression strength, N/mm ²	min. 90
Bending strength, N/mm ²	min. 60
Tensile strength , N/mm ²	min. 40
Martens value**, °C	min. 45
Specific surface resistivity Ohm	min. 10 ¹³
Specific volume resistivity Ohmxcm	min. 10 ¹⁴
Dielectric strength at 25 °C, kV/mm	min. 18

*Tests should be made after a min. 7-day conditioning at room-temperature.

** Above that Martens value the material softens gradually, but after cooling down the material hardens again.



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Labour safety information

During work: Closed working-clothes, safety glasses and gloves have to be worn.

Skin protection: A skin-protective cream has to be applied on hands before starting work.

Removing the material from the skin: The material has to be absorbed with a dry clothes or paper and the skin has to be washed with soapy warm water and dried. Afterward it has a protective cream has to be used. The dirty paper or clothes used for absorption should be disposed to a plastic container or sack.

Ventilation: The working place has to be ventilated 3-5 times an hour. Workers should avoid breathing in the vapours.

First-aid: In case the material gets into the eyes, they should be rinsed thoroughly with water for 15 minutes and the worker should see a doctor as soon as possible. From skin the material should be removed as above. Contaminated clothes should be taken off immediately.

In case somebody feels unwell after breathing in vapours he has to be taken on open air and see a doctor as soon as possible.

The hardened material is physiologically harmless. Labour safety and environmental information is detailed in the „Material Safety Data Sheets” of the product.

Information on application

- During mixing the temperature of the components should be between 15-25 °C (room-temperature). Relative humidity of air should stay below 70 %.
- Casting process should be begun by preparing the workpieces in a quantity, that can be casted with resin obtained within its potlife by one mixing (at room temp.).
- Prescribed mixing ratio has to be respected at every mixing.
- After pouring together, the two components have to be mixed thoroughly till receiving absolute homogeneity.
- The mixture should be used within potlife. A material with increased viscosity or undergoing gelling process already, must not be used.
- For cleaning the tools and brushes Vilepox H-1 should be used.

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This brochure was compiled according to our best knowledge, but no legal obligation can be based on its content.

Vilepox HK-9 natural ENG 4.