KORAX Kft.

TECHNICAL DATA SHEET

VILEPOX® D-5ML/VILTER NM/VILTER Z
Laminating and casting system

Application: A baking resin-system for production of laminates reinforced by glass- or carbon fiber. Also used for castings, electrical insulators and fiber reinforced composites eg. "dry" transformers, insulators.

Benefits:

- Excellent mechanical properties
- Excellent wetting properties of fillers and glass fibers.
- Excellent chemical resistance
- Excellent dielectric properties
- „F" thermal- class
- Good thermal-shock resistance
- Good liquidity even in case of high content of fillers
- Solvent-free system
- On request available in coloured version too

Specification of the components

	Vilepox® D-5ML	Vilter NM	Vilter Z
Characteristics	a modified, solventless epoxy resin of very low viscosity	A low viscosity acid anhydrid based hardener with additives	a low viscosity solventless, tertiary-amine based accelerator
Appearance	opal liquid*	colourless or slightly yellowish, transparent liquid	yellow liquid
Density, g/cm^3 (at 25 °C):	1,11-1,15	1,17-1,25	0,96 – 1,00
Viscosity (at 25°C), mPas	800-1200	30-80	180-270
Flash point, °C	>110	150	appr.107
Non-volatile matter content, %	> 99,8	> 99,8	
Total chlorine content, %	max. 0,3		
Storage	in tightly closed, original containers at 5-25°C, in a dry place far from heaters		
Shelf-life	min. 12 months	min. 12 months	min. 12 months
Packaging	metal can or drum	metal can or drum	metal can
Flammability	III. grade	III. grade	III. grade

*On request available in coloured version e.g. RAL 3013, RAL 8016, RAL 5010

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Specification of the mixture

Mixing ratio of colours RAL 3013, RAL 8016:

Vilepox D-5ML	**100,0 parts of mass (kg)***
Vilter NM	**80,0 parts of mass (kg)**
Vilter Z accelerator	**0,7 parts of mass (kg)****

*In case of coloured **Vilepox D-5ML** the mixing ratio may be different depending on the colour. In such cases exact ratio will be given in the confirmation.
** The quantity of **Vilter Z** accelerator may be changed by 0,3-1,5 parts of mass (kg).

	Properties of the mixture
Initial viscosity, mPas (at 25 °C)	200-500
Density of the mixture (at 25 °C, g/cm^3)	1,15-1,20
Geltime (at 120°C, 100g, min)	27-42
Geltime (at 100°C, 100g, min)	appr. 60
Geltime (at 80°C, 100g, min)	appr. 135
Potlife:	
until reaching doubble viscosity, 100 g, 25 °C, hours	appr. 4,5
until reaching tripple viscosity, 100 g, 25 °C, hours	appr. 21
Viscosity 15000 mPass, 100 g, 25 °C, hours	appr. 192 (8 days)

Properties of the hardened material:

Suggested curing schedule*: at 90 °C - 4 hours and + 150 °C 6 hours.

	Properties of the hardened material
Bending strength, N/mm^2	min. 80
Tensile strength , N/mm^2	min. 45
Martens-value , °C**	min. 90
Dielectric strength at 25°C kV/mm	min. 12
Water absorbtion, at 25°C, %	max. 0,2
Specific surface resistivity, Ohm	min. 10^{15}
Specific volume resistivity, Ohmxcm	min. 10^{14}
Dissipation factor, tg δ (l kHz) at 25°C	max. 1,5x 10^{-2}
Arc strength, s	min. 100
Inflammability grade	HB

*Curing schedule may be different to a certain extent depending on the manufacturing conditions and demands. Technical parameters may in this case change.
**Martens value slightly depends on the baking temperature, thus higher baking temperature causes a few degrees higher Martens-value as well.

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Labour safety information

During work: Closed working-clothes, safety glasses and gloves have to be worn.
Skinprotection: 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, then creamed with a protective cream afterwards. The dirty paper or clothes used for absorbtion 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 to the eyes, they shoud 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 of 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.

Labour safety and environmental information is detailed in the „Safety data sheets" of the product.

Information on application

-Temperature of the components should stay between 15-25 °C during mixing. At higher temperature gel time decreases, that makes application more difficult.
-To avoid possible sedimentation component „A" should always be stired up thoroughly before use.
-Prescribed mixing ratio has to be strictly kept at every mixing.
-After pouring them together the components have to be mixed accurately till receiving absolute homogeneity and applied as soon as possible.
-The mixture can only be used within the potlife.
-After pouring together, the two components have to be mixed thoroughly till receiving absolute homogenity.
-Suggested way of curing: To avoid overheating material should be hardened at lower temperature first. This way the material becomes already hard, but to reach its final excellent features it should be post-cured at higher temperature. Suggested curing schedule*: at 90 °C - 4 hours and + 150 ºC 6 hours.
-Actual time of curing is longer by the time necessary for warming up the pieces.
-For cleaning the tools and brushes Vilepox H-1 should be used.

The information contained in this data sheet has been collected on the basis of our best engineering knowledge, however, it is not intended to provide any legal commitment.

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