TECHNICAL DATA SHEET

VILEPOX® A-1/ VILTER NM/Flexibiliser G/ VILTER Z /Silica Flour

Baking resin system for casting

Field of application:

A baking casting resin system used for electroinsulating castings, transformers, voltage- and current transformers, isolators, pin/supporting insulators, and is also suitable for impregnating various coils.
Recommended technology:
Conventional vacuum-casting with extender. Silica flour is the most common extender (see below).

Benefits:

- Excellent mechanical properties
- Excellent dielectric properties
- Excellent chemical resistance
- Excellent thermal resistance
- Wide range of application
- Solvent-free system
- Complies with RoHS requirements

Specification of the liquid components:

	VILEPOX® A-1	VILTER NM	Flexibiliser	VILTER Z
Charasteristics	A solvent-free, medium-viscosity epoxy resin	A low viscosity mixture of organic acid anhydrids and additives	Polyether based plasticizer	Tertiary-amine based accelerator
Appearance	light-yellow, clear, transparent liquid	colourless or slightly yellowish transparent liquid	colourless liquid	brownish-yellow liquid with effluvium
Density at 25 °C, g/cm3	1,13-1,19	1,15-1,26	0,97-1,03	0,96 – 1,00
Viscosity at 25°C, mPas	11000 - 14 000	30-70	45-95	130-300
Flash point, °C	>200	>148	>170	>110
Non-volatile matter content, %	min. 99,8	min. 99	min. 99,8	min.99,8
Storage conditions	in tightly closed, original containers at 5-25°C, in a dry place far from heaters			
Shelf-life	12 months	12 months	12 months	12 months
Packaging	metallic can or drum	metallic can or drum	metallic can or drum	metallic can
Inflammability	III. grade	III. grade	III. grade	III. grade

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Specification of the mixture:

Mixing ratio:

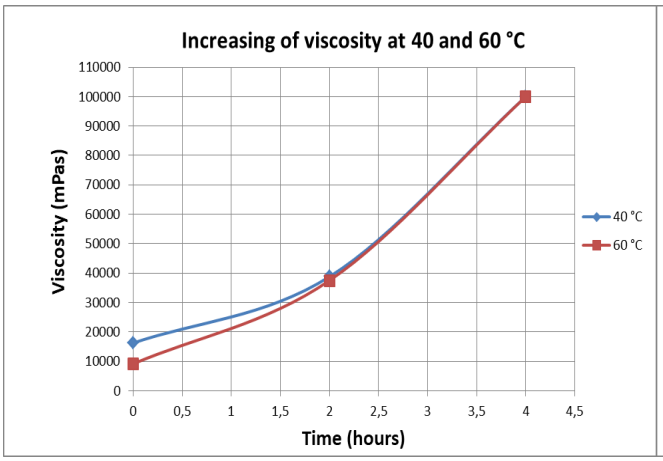
VILEPOX® A-1	100	parts of mass (kg)
VILTER NM	85	p.o.m. (kg)
Flexibiliser G	0-25	p.o.m. (kg) *
VILTER Z	0,5-1,5	p.o.m. (kg)
Silica Flour	320-440	p.o.m. (kg) *

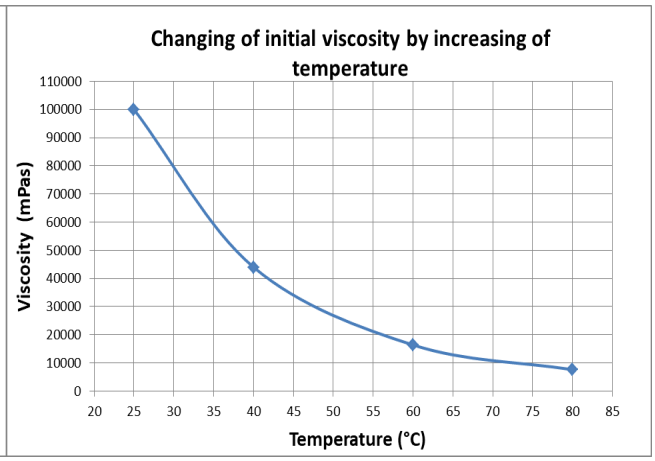
* The quantity of these materials can be changed. This may slightly change the technical parameters.

Mixing ratio at test:

Vilepox® **A-1 100** p.o.m./Vilter® **NM 85** p.o.m./Flexibiliser **G 20** p.o.m./Vilter® **Z 0,7** p.o.m./Silica flour **W12 380** p.o.m.

Properties of the mixture	Standard	Unit	Value
Initial viscosity at 25 °C	HSZ 010 (ISO 2555)	mPas	88 000 – 94 000
Initial viscosity at 40 °C	HSZ 010 (ISO 2555)	mPas	40 000 – 45 000
Initial viscosity at 60 °C	HSZ 010 (ISO 2555)	mPas	9 000 – 13 000
Initial viscosity at 80 °C	HSZ 010 (ISO 2555)	mPas	3 000 – 5 000
Pot life at 25°C	HSZ 010 (ISO 2555)	hour	appr.24
Gel time at 80°C, 100g	HSZ 012	minute	153 - 179
Gel time at 100°C, 100g	HSZ 012	minute	57 - 75
Gel time at 120°C, 100g	HSZ 012	minute	21 - 42





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Properties of the hardened material	Standard	Unit	Value
Silica flour content	-	mass %	65
Density at 25 °C	ISO 1675	g/cm3	1,75-1,85
Bending strength	ISO 178	N/mm^2	120-135
Impact-bending strength	ISO 179	kJ/mm^2	11-13
Compression strength	ISO 604	N/mm^2	135-150
Tensile strength	ISO 527	N/mm^2	70-85
Elongation at break	ISO 527	%	0,9-1,2
Dimensional stability according to Martens	DIN 53458	°C	75-85
Glass transition temperature	ISO 11357-2	°C	85-95
Linear heat-expension co-efficient 20-60 °C	DIN 53752	$10^{-6}/K^{-1}$	30-40
Thermal conductivity	ISO 8894-1	W/mK	0,8-0,9
Fire retardancy, 4 mm	UL 94	grade	HB
Thermal resistance	IEC 60085	class	F
Water absorbtion in 10 days at 25°C	IEC 60062	mass %	< 0,2
Water absorbtion in 60 minutes at 100°C	IEC 60062	mass %	< 0,2
Dielectric strength at 25°C	IEC 60243	kV/mm	18-22
Specific surface resistivity	IEC 93	Ohm	$>10^{15}$
Specific volume resistivity	IEC 93	Ohmxcm	$>10^{14}$
Dielectric constant 50 Hz, at 25°C	IEC 60250	ε	3,8
Dielectric constant, ε, 10^6 Hz, at 25°C	IEC 60250	ε	3,3
Loss factor tg δ, 50 Hz, at 25°C	IEC 60250	tg δ	0,005
Loss factor tg δ, 10^6 Hz, at 25°C	IEC 60250	tg δ	0,025
Arc resistance	IEC 61621/97	s	185-195
Tracking resistance with A test solution	IEC 60112-11/03	-	CTI > 600-0,0
Tracking resistance with B test solution	IEC 60112-11/03	-	CTI > 600M-0,0
Electrolytic corrosion	DIN 53489	grade	A1

Information on application:

- During mixing the temperature of the components should be between 15-25 °C.
- Prescribed mixing ratio has to be respected at every mixing.
- The order and method of mixing the components : at first component „A" and component „B" should be measured and mixed up separately. After that Flexibiliser G, Silica Flour and Vilter® Z accelerator should be added to the mixture.
- After pouring them together the components have to be mixed accurately till receiving absolute homogenity and applied as soon as possible
- The quantity of the Flexibiliser G-Silica Flour-Vilter Z® can be optionally changed according to the above given quantities.
- Mixture should be used within potlife - preferably within the viscosity-doubling time but maximum of viscosity-tripling time. Material of increased viscosity or with begun gelling must not be used.

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- For cleaning tools and brushes Vilepox® H-1 thinner should be used. The hardened material can be removed by mechanical way or by baking.

Labour safety information:

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

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.

VILEPOX® A-1/NM/Flex G/ Z September, 2019

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