

TYPE

Vinyl ester resin based on epoxy-novolak

REACTIVITY

high reactive

SPECIAL PROPERTIES

Excellent chemical resistance and high deflection temperature

USE

for fabrication of equipment and structures in the chemical industry

PRODUCT DATA

Determined per batch:

Non-Volatile Matter DIN 55671
non-volatile matter [%] 64,5 - 68,5
(120 °C; 5 min)

Dynamic Viscosity DIN EN ISO 3219
dynamic viscosity [mPa.s] 240 - 410
(25 1/s; 23 °C)

Gel Time (UP-Resins) DIN 16945 / 6.3.1.2
gel time [min] 13 - 27
2 % MEKP(33%) + 3 % Co(1%) + 2 % DMA(5%)
(20 °C)

Colour / Appearance VLN 250
colour green
appearance clear

Not continually determined:

Density (Liquids) DIN EN ISO 2811-2
density [g/cm³] 1,04
approx.
(20 °C)

Flash Point DIN EN ISO 1523
flash point [°C] 34
approx.

FURTHER SPECIAL PROPERTIES

Cured VIAPAL™ VUP 4652/67 is resistant against corrosion, oxidation and solvent with excellent mechanical and thermal properties. It can be used in many applications involving combinations of acids, liquors, halogens, chlorinated hydrocarbons and aliphatic or aromatic solvents. VIAPAL™ VUP 4652/67 is used for the fabrication of tubes and containers in areas of oil fields and refineries.

CURING

Curing is possible at room temperature by addition of a suitable curing system, e. g. Co 6% + DMA 10 and ketone peroxide.

PROCESSING TIME

By adding a commercial inhibitor (e.g. ADDITOL® VXL 5918) the processing time can be considerably extended without significant effect on hardening (when adequate amounts of hardener and accelerator are used).

POST-CURE

To achieve optimum curing of mouldings, an elevated temperature post-cure is normally required, but this will depend on temperature, time and thickness of the parts used in actual processes. As a guide value for mouldings with 3 mm thickness produced at room temperature post-curing for at least 2 hours at 70 °C is recommended.

STORAGE

The product should be stored under exclusion of direct sunlight in the original, undamaged and closed packaging in a dry and cool place at temperatures of maximum 25 °C.

Gel time and curing time can change during progressive storage. Shelf live is reduced at higher storage temperatures.

SHELF LIFE

Standard Shelf Life is 120 days from the date of manufacturing.
For products still in allnex possession allnex may extend the expiration date of a batch upon re-testing by QC.

PRODUCT DATA OF CURED RESIN

Determined per batch:

Not continually determined:

Hardness (BARCOL) DIN EN 59

Barcol-hardness 934-1		47
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Density (Solids) DIN EN ISO 1183-1

density	[g/cm³]	1,166
(20 °C; Pyknometer Procedure)		

Tensile Test (Unreinforced Plastics) DIN EN ISO 527-2

tensile strength	[MPa]	60
breaking elongation	[%]	2
modulus of elasticity in tension	[MPa]	3596

Flexural Test (Unreinforced Plastics) DIN EN ISO 178

bending strength	[MPa]	149
flexural strain at flexural strength	[%]	5,6
flexural modulus	[MPa]	3175

Heat Deflection Temperature DIN EN ISO 75-2

heat deflection temperature	[°C]	142
(annealing: 10 h at 140 °C; outer fiber stress, 1,80 MPa, flat)		

Impact Strength (Charpy) DIN EN ISO 179-1

impact strength	[kJ/m²]	9
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Glass Transition Temperature DIN EN 61006

glass transition temperature	[°C]	146
(dynamic mechanical analysis; 2 K/min)		

Volume Shrinkage (UP) VLN 304

volume shrinkage	[%]	6,9
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Water Absorption (Plastics) DIN EN ISO 62

water absorption	[%]	0,59
(24 h)		

Water Absorption (Plastics) DIN EN ISO 62

water absorption	[%]	1,47
(7 d)		

Not continually determined data do not constitute a quality description, but correspond to single values, determined on a random sample.
Deviations caused by production are possible.

PRECAUTIONS

Please notice the information in the material safety data sheet (MSDS).

TANK CLEANING

If a storage tank is used, it is recommended to clean the tank at least once per year.