

TYPE

Oil-free, hydroxyl functional polyester

FORM OF DELIVERY (f.o.d.)

65 % in methoxypropyl acetate (65MPAC)

SPECIAL PROPERTIES AND USE

Medium reactivity, high hardness. Superior abrasion and impact resistance. Radiant brilliance.

Two-pack polyurethane enamels for metal and wood.

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219

dynamic viscosity	[mPa.s]	420 - 860
50 % propylene glycol methylether acetate (25 1/s; 23 °C)		

Iodine Colour Number DIN 6162

iodine colour number		<= 5
50 % propylene glycol methylether acetate		

Acid Value DIN EN ISO 2114

acid value	[mg KOH/g]	< 10
(non volatile matter)		

Non-Volatile Matter DIN 55671

non-volatile matter	[%]	63 - 67
(120 °C; 5 min)		

Not continually determined:

Hydroxyl Value DIN 53240

hydroxyl value	[mg KOH/g]	245
approx. (nFA; potentiometric)		

Non-Volatile Matter DIN EN ISO 3251

non-volatile matter	[%]	63 - 67
(1 h; 125 °C; 1 g)		

Density (Liquids) DIN EN ISO 2811-2

density	[g/cm³]	1,10
approx. (20 °C)		

Flash Point DIN EN ISO 1523

flash point	[°C]	45
approx.		

DILUTABILITY

special white spirit 100/140	○	methyl isobutyl ketone	●
white spirit	○	butyl acetate	⊙
turpentine oil	○	methoxypropyl acetate	●
xylene	⊙	methoxypropanol	●
solvent naphtha 180/210	⊙	ethanol	●
acetone	●	butanol	⊙

● = unlimited dilutability
 ○ = substantial dilutability

⊙ = limited dilutability
 ○ = very limited or no dilutability

COMPATIBILITY

% Vialkyd AN 928	90	75	50	25	10
% other binder	10	25	50	75	90

Polyisocyanates

Desmodur N, L, HL, IL	●	●	●	●	●
Beckocoat PU 428	●	●	○	○	○

Alkyd resins

Vialkyd AC 260, AC 433, AC 513	○	○	○	○	○
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Other binders

nitrocellulose 24 E	○	○	○	○	○
Ucar solution vinyl resin VAGH	○	○	○	○	○

● = definite compatibility ○ = very limited or no compatibility

SUGGESTED USES

Vialkyd AN 928 is a branched hydroxyl functional polyester suitable as crosslinker for aliphatic and aromatic polyisocyanates. The components react at ambient temperature and give films with outstanding light fastness and gloss retention. The high reactivity affords crosslinking particularly with Desmodur N, Desmodur L and Desmodur HL grades.

Vialkyd AN 928 can be used as sole binder in the formulation of clear and pigmented paints for coachworks and high rise panels affording excellent resistance to abrasion, chemicals and water. The substrates can be wood, metal or plastic.

PROCESSING

Curing with polyisocyanates

For an equivalent reaction of the reactive groups (NCO : OH = 1 : 1) the following equation applies, to the calculation of the necessary quantity of polyisocyanate, calculated on 100 parts by weight of Vialkyd (solid resin):

$$\text{polyisocyanate (f.o.d.)} = \frac{42 \times 100 \times \text{OH\% (solid resin)}}{17 \times \text{NCO\% (f.o.d.)}}$$

42 = molecular weight of the NCO-group
17 = molecular weight of the OH-group

For 100 parts by weight Vialkyd AN 928/65MPAC (f.o.d.) the following quantities of polyisocyanate are necessary for 100 % crosslinking:

<i>Polyisocyanates</i>	<i>parts by weight</i>
Desmodur N/75 %	73.0
Desmodur L/75 %	92.0
DesmodurHL/60 %	115.0
Desmodur IL/51 %	150.0
Tolonate HDB/75 %	73.0
Beckocoat PU 428/51 %	300.0

For stoichiometric crosslinking, calculated from the equivalent weights (NCO : OH = 1 : 1) approx. 350 parts by weight Vialkyd AN 928/65MPAC (f.o.d.) require approx. 255 parts weight Desmodur N/75 %.

Pigments

Inert pigments like titanium dioxide, lithopone, iron oxide, chromium oxide, and organic pigments can be used, as well as inert extenders like barytes, talcum, quartz powder, etc. Care should be taken that all materials are absolutely dry. The pigments and extenders should be checked individually.

Dilution

The solvents used with combinations of Vialkyd AN 928 and polyisocyanates should be absolutely free from hydroxyl groups and water. The main diluents are propylene glycol ether acetates, like methoxypropyl acetate or esters, like ethyl acetate or ketones like methyl ethyl ketone, methyl isobutyl ketone.

Additives

For accelerating the crosslinking reaction between Vialkyd AN 928 and polyisocyanate small quantities of organic tin or zinc compounds or of tertiary amines are sufficient. Polyurethane paints on Vialkyd AN 928 afford excellent flow which can be further enhanced through small quantities of silicone oils.

STORAGE

At temperatures up to 25 °C storage stability packed in original containers amounts to at least 730 days.

DISTINGUISHING FEATURES

In comparison with other hydroxyl functional Vialkyd grades Vialkyd AN 928 excels in resistance to chemicals and solvents.

Producer:

Desmodur N, L, IL, HL (Covestro)
Ucar solution vinyl resin VAGH (Union Carbide Benelux NV)