VIALKYD® AY 120/65XMPAC

Technical Datasheet

TYPE

Acrylic modified, hydroxyl groups containing alkyd resin

FORM OF DELIVERY (f.o.d.)

65 % in xylene / methoxypropyl acetate (65XMPAC)

Average hydroxyl content (solid resin)

approx. 3 %

OH equivalent weight (f.o.d.)

approx. 860

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219		
dynamic viscosity 50 % xylene (25 1/s; 23 °C)	[mPa.s]	230 - 620
Iodine Colour Number DIN 6162		
iodine colour number 50 % xylene		<= 5
Acid Value DIN EN ISO 2114		
acid value (non volatile matter)	[mg KOH/g]	< 12
Non-Volatile Matter DIN 55671		
non-volatile matter (120 °C; 5 min)	[%]	63 - 67

Not continually determined:

Hydroxyl Value DIN 53240		
hydroxyl value approx. (solid matter content)	[mg KOH/g]	100
Non-Volatile Matter DIN EN ISO 3251		
non-volatile matter (1 h; 125 °C; 1 g)	[%]	63 - 67
Density (Liquids) DIN EN ISO 2811-2		
density approx. (20 °C)	[g/cm³]	1,01
Flash Point DIN EN ISO 1523		
flash point approx.	[°C]	30

DILUTABILITY

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

● = unlimited dilutability
⊙ = limited dilutability
◎ = substantial dilutability
○ = very limited or no dilutability

COMPATIBILITY

% Vialkyd AY 120	90	75	50	25	10
% other binder	10	25	50	75	90
Polyisocyanates					
Desmodur N	●	●	●	○	○
Desmodur L, Z 4370	●	●	●	●	●
Desmodur HL, IL	○	○	○	○	○
Desmodur N 3200	●	●	●	●	○
Beckocoat PU 428	●	○	○	○	○
Alkyd resins					
Vialkyd AC 254, AC 260, AC 290, AN 800, AN 928	○	○	○	○	○
Vialkyd AY 422	●	●	●	●	●
Acrylic resins					
Viacryl SC 341	●	●	●	●	●
Macrynal SM 564, SM 540, SM 548, SM 500	●	●	●	●	●
Other binders					
nitrocellulose 24 E	○	○	○	●	●
Vinyl VAGH, VROH	○	○	○	○	○
Hostaflex CM 131	○	○	○	○	○
CAB-551-0.2	○	○	○	○	○

● = definite compatibility
○ = very limited or no compatibility

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SPECIAL PROPERTIES

Very rapid initial and through drying. Quick rise in hardness, long pot life. Good body, excellent gloss retention, superior weather resistance

SUGGESTED USES

Vialkyd AY 120, combined with aliphatic polyisocyanates, preferably with Desmodur N, gives fast drying brilliant car refinishing enamles with good build and finishing enamels for railroad coaches, busses, etc. Vialkyd AY 120 may also be used for the formulation of two coat metallic finishes.

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 obtaining optimum properties a minimum degree of crosslinking of 80 % should be guaranteed. For 100 p.b.w. of Vialkyd AY 120 (f.o.d.) the following quantities of polyisocyanate (e.g. Desmodur) are necessary for a crosslinking degree of 80 %:

polyisocyanates	*parts by weight*
Desmodur N/75 %	23.7
Tolonate HDB/75 %	23.7

For stoichiometric crosslinking, as calculated from the equivalent weights, e.g. for 100 % crosslinking (NCO : OH = 1 : 1) ca. 860 p.b.w. Vialkyd AY 120 (f.o.d.) require ca. 255 p.b.w. Desmodur N/75; for 80 % of crosslinking, ca. 860 p.b.w. of Vialkyd AY 120 (f.o.d.) require ca. 204 p.b.w. Desmodur N/75 %.

Dilution

The solvents used with combinations of Vialkyd AY 120 and polyisocyanates should be absolutely free from hydroxy groups and water. The main diluents are propylene glycol ether acetates, like methoxypropyl acetate or esters like ethyl acetate, butyl acetate or ketones, like methyl ethyl ketone, methyl isobutyl ketone. Aromatic solvents like xylene or Shellsol A can be used to blend the diluents.

Additives

Suitable slip and levelling aids are Additol XL 121 or Additol XL 122. Catalysts do not markedly enhance hardening of combinations of Vialkyd AY 120 with Desmodur N.

STORAGE

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

SPECIAL INDICATIONS

Sometimes the form of delivery of Vialkyd AY 120 may be opaque. But that does not reduce the performance of the paint.

Producers:

Desmodur (Covestro)
Vinyl VAGH, VROH (Union Carbide)
CAB-551-0.2 (Eastman)