

# VIALKYD<sup>®</sup> AY 140/50XBAC

## TYPE

Acrylic modified, hydroxyl group containing alkyd resin

## FORM OF DELIVERY (f.o.d.)

50 % in xylene / butyl acetate (50XBAC)

## Average hydroxyl content (solid resin)

approx. 2 %

## OH equivalent weight (f.o.d.)

approx. 1600

## PRODUCT DATA

### Determined per batch:

#### Dynamic Viscosity DIN EN ISO 3219

dynamic viscosity [mPa.s] 120 - 400  
40% X  
(100 1/s; 23 °C)

#### Iodine Colour Number DIN 6162

iodine colour number <= 5

#### Acid Value DIN EN ISO 2114

acid value [mg KOH/g] < 15  
(solids)

#### Non-Volatile Matter DIN 55671

non-volatile matter [%] 48 - 52  
(120 °C; 5 min)

### Not continually determined:

#### Hydroxyl Value DIN 53240

hydroxyl value [mg KOH/g] 70  
approx.  
(solids)

#### Non-Volatile Matter DIN EN ISO 3251

non-volatile matter [%] 48 - 52  
(1 h; 125 °C; 1 g)

#### Density (Liquids) DIN EN ISO 2811-2

density [g/cm<sup>3</sup>] 1,00  
approx.  
(20 °C)

#### Flash Point DIN EN ISO 1523

flash point [°C] 25  
approx.

## DILUTABILITY

special white spirit 100/140

white spirit

turpentine oil

xylene

solvent naphtha 180/210

acetone

● = unlimited dilutability

● = substantial dilutability

○ methyl isobutyl ketone

○ butyl acetate

○ methoxypropyl acetate

● methoxypropanol

⊙ ethanol

● butanol

⊙ = limited dilutability

○ = very limited or no dilutability

## COMPATIBILITY

% Vialkyd AY 140	90	75	50	25	10
% other binder	10	25	50	75	90

### Polyisocyanates

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

### Alkyd resins

Vialkyd AC 260	●	○	○	○	○
Vialkyd AC 305	○	○	○	●	●
Vialkyd AC 433	○	○	○	○	●

### Acrylic resins

Macrynal SM 564	●	○	○	○	○
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### Other binders

nitrocellulose 24 E	●	●	●	●	●
Ucar solution vinyl resin VAGH	●	●	●	●	●
Hostaflex CM 131	●	●	●	●	●
CAB-381-0.5, CAB-551-0.2	○	○	○	○	○

● = definite compatibility

○ = very limited or no compatibility

## SPECIAL PROPERTIES

Very low hydroxyl number. Long pot life.  
Very rapid initial and through drying.  
High resistance characteristics. High viscosity.

## SUGGESTED USES

Vialkyd AY 140/50XBAC in combination with preferably aliphatic polyisocyanates, e.g. Desmodur N, also with additions of copolymers or nitrocellulose, gives polyurethane furniture lacquers with rapid sanding, excellent resistance to solvents and with high light fastness. The lacquers have good flexibility and resistance characteristics.

Lacquers on Vialkyd AY 140 can be used by any industrial application method as well as by brushing. For spray application the lacquers should have a viscosity of below 50 s, 4 mm, for application by brush of approx. 30 s, 5 mm, and for curtain coating approx. 30 - 40 s, 5 mm, DIN EN ISO 2431, 23 ° C. High boiling solvents, which influence levelling favourably, require drying times between 10 and 40 minutes.

In formulations with non-aliphatic polyisocyanates or if other binders are coemployed, the mechanical properties should be checked.

Lacquers based on Vialkyd AY 140 can be applied on wood, metal, and - after preliminary tests - on various plastics. High quality paints with extremely short application time for the whole system can be obtained with a UV-roller coating on a two-pack paint based on Vialkyd AY 140.

## 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 of Viakyd AY 140, f.o.d., the following quantities of polyisocyanate are necessary for a 100 % crosslinking reaction:

<i>polyisocyanates</i>	<i>parts by weight</i>
Desmodur N/75 %	15.0
Desmodur L/75 %	19.0
Desmodur HL/60 %	23.0
Beckocoat PU 428/51 %	61.0

For stoichiometric crosslinking, calculated from the equivalent weights (NCO : OH = 1 : 1), approx. 1600 parts by weight of Vialkyd AY 140 (f.o.d.) require approx. 255 parts by weight of 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 AY 140 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 and butyl acetate or ketones like methyl ethyl ketone and methyl isobutyl ketone. Toluene or xylene can be used to blend the diluent.

### Additives

Initial and through drying of Vialkyd AY 140 are very rapid additional catalysts give no significant acceleration.

## STORAGE

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

## DISTINGUISHING FEATURES

Vialkyd AY 140 has the highest viscosity and the lowest OH-value of all hydroxyl-functional Vialkyd types. Only Vialkyd VAY 6126/50BAC cures faster and has better sandability.

### Producers:

Desmodur N, L, HL, IL (Bayer)  
Ucar solution vinyl resin VAGH (Union Carbide)  
CAB-381-0.5, CAB-551-0.2 (Eastman)

4.0/01.04.2014 ( replaces edition 3.0/17.07.2013 )

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