VIALKYD® AC 451n/70SNB

Technical Datasheet

TYPE

Medium oil, non drying alkyd resin

FORM OF DELIVERY (f.o.d.)

70 % in solvent naphtha 180/210 (70SNB)
(containing also 3.5 % xylene)

SPECIAL PROPERTIES AND USE

Automotive finishes with high gloss and excellent weather resistance and paints for household appliances.

RESIN COMPOSITION

(approx.)

46 % synthetic fatty acids (as triglycerides)
29 % phthalic anhydride

DILUTABILITY

white spirit	○	ethyl acetate	●
xylene	●	butyl acetate	●
solvent naphtha 150/180	●	ethanol	●
methyl ethyl ketone	●	butanol	●

● = unlimited dilutability
⦿ = limited dilutability
◉ = substantial dilutability
○ = very limited or no dilutability

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219		
dynamic viscosity (25 1/s; 23 °C)	[mPa.s]	4400 - 5200
Iodine Colour Number DIN 6162		
iodine colour number		<= 3
Acid Value DIN EN ISO 2114		
acid value (non volatile matter)	[mg KOH/g]	< 6
Hydroxyl Value DIN 53240		
hydroxyl value (solid matter content)	[mg KOH/g]	125 - 155
Non-Volatile Matter DIN 55671		
non-volatile matter (120 °C; 5 min)	[%]	68 - 72

Not continually determined:

Non-Volatile Matter DIN EN ISO 3251		
non-volatile matter (1 h; 125 °C; 1 g)	[%]	68 - 72
Density (Liquids) DIN EN ISO 2811-2		
density approx. (20 °C)	[g/cm³]	1,05
Flash Point DIN EN ISO 1523		
flash point approx.	[°C]	56

COMPATIBILITY

% Vialkyd AC 451n	90	75	50	25	10
% other binder	10	25	50	75	90
Alkyd resins					
Vialkyd AC 371, AC 531	●	●	●	●	●
Vialkyd AR 340, AR 427	●	●	●	●	●
Other binders					
Beckopox EP 301	●	●	○	○	○

● = definite compatibility
○ = very limited or no compatibility

SUGGESTED USES

Stoving enamels

Vialkyd AC 451n/70SNB is suitable for cross-linking with amino resins especially to formulate high quality stoving systems for automotive top-coats and one-coat systems for household and electrical appliances.

Films based on Vialkyd AC 451n have good gloss, high body and excellent outdoor durability as well as resistance to petrol and UV radiation. Excellent impact resistance, flexibility, adhesion and surface hardness round out of Vialkyd AC 451n properties.

Vialkyd AC 451n is generally used with reactive conventional melamine resins in ratios of 70 : 30 to 75 : 25 (on solids). Depending on the reactivity of the melamine resin curing takes place at temperatures of 120 - 140 °C for 30 min. When using high reactive dehydrated castor oil alkyd resin grades such as Vialkyd AR 340 in combination with melamine resin it is possible to reach curing conditions of 30 min 100 - 120 °C. In addition it is possible using an acid catalyst (e. g. 0.5 - 1 % p-toluene sulphonic acid, 10 % in xylene) to increase reaction speed to enable on-line repair in the automotive industry.

PROCESSING

Pigmentation

Vialkyd AC 451n/70SNB possesses good pigment wetting properties and is therefore generally used as base resin for pigment grinds. The use of basic pigments should first be investigated through lab trials. The crosslinker should be added after the milling step has been completed.

Dilution

For stoving enamels aromatic hydrocarbons are recommended as diluents together with small quantities of polar solvents such as alcohols.

STORAGE

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

DISTINGUISHING FEATURES

Compared with Vialkyd AC 371 Vialkyd AC 451n has a lower viscosity, Vialkyd AC 451n is more reactive than Vialkyd AC 531 and has better compatibility with short-oil dehydrated castor oil alkyd resins such as Vialkyd AR 340.