

### TYPE

Cyclized rubber

### USES

Chemically resistant paints; anticorrosion paints; zinc-rich paints; interior coatings for drinking-water tanks

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

Pellets

### PRODUCT DATA

The data are determined by our quality control for each batch (lot) before release

#### Determined per batch:

#### Melting Interval DIN 53181

melting range [°C] 127 - 145  
capillary method

#### Dynamic Viscosity (Ubbelohde) DIN 53177

dynamic viscosity [mPa.s] 350- 700  
50 % toluene  
(23 °C)

#### Iodine Colour Number DIN 6162

iodine colour number <=60  
50 % toluene

#### Not continually determined:

#### Colour Scale (Gardner) DIN EN ISO 4630-1

Gardner colour value <=12

#### Density (Solids) DIN EN ISO 1183-1

density [g/cm³] 1,00  
analogous, approx.

#### Colour Scale (Gardner) DIN EN ISO 4630-1:

Diese Norm wurde vom ISO/TC 35/SC 10 "Test methods for binders for paints and varnishes" (Sekretariat: Deutschland) in Zusammenarbeit mit ASTM D01.34 "Naval Stores" ausgearbeitet und mit ASTM D 1544-98, Standard Test Method for Color of Transparent Liquids (Gardner Color Scale), harmonisiert.

DIN EN ISO 4630-1 (2005-03 Seite 2)

### DILUTABILITY

Special petroleum fraction 100/140	●	Acetone	C
Special petroleum fraction 80/110	●	Methylethyl ketone	C
Solvent naphtha	●	Methoxypropanol	C
White spirit	●	Cyclohexanone	●
Oil of turpentine	●	Ethyl acetate	C
Toluene	●	Butyl acetate	●
Xylene	●	Methoxypropyl acetate	C
Tetrahydronaphthaline	●	Ethanol	C
Dekahydronaphthaline	●	Butanol	C
Trichlorethylene	●	Isobutanol	C
●unlimited soluble	○	limited soluble	
●substantial soluble	○	very limited or no soluble	

### COMPATIBILITY

% ALPEX® CK 450	90	75	50	25	10
% other binder	10	25	50	72	90

#### Drying oils (cold mix)

Refined linseed oil	●	●	●	●	●
Linseed oil-stand oil 30 dPa.s, 60 dPa.s, 90 dPa.s	●	●	●	●	●

#### Alkyd resins

Vialkyd AL 520, AR 680	●	●	●	●	●
Viakyd AM 380	●	●	○	○	○
Vialkyd AM 440	●	○	○	○	○

#### Other binders

Nitrocellulose 1/2s, Hostaflex CM 620, CM 630	○	○	○	○	○
-----------------------------------------------	---	---	---	---	---

#### Plasticizers

Chlorparaffin 40 fl. 50 fl.	●	●	○	○	○
Chlorparaffin 70 fl., 70 fest	●	●	●	○	○
Hordaflex LC, LC 50	●	○	○	○	○
Desavin, dibutyl phthalate	●	●	○	○	○
Resamin HF 480	●	●	○	○	○

● definite compatibility ○ very limited or no compatibility

### PAINTS

#### Properties and uses

ALPEX® CK 450 is a synthetic resin based on cyclized rubber. Paints based on ALPEX® CK 450 dry initially by the physical process of solvent evaporation. The originally reversible solubility of the films gradually diminishes through the action of oxygen. As sole binding agent ALPEX® CK 450 is very brittle, and it is therefore normally used in conjunction with plasticizers, drying oils and alkyd resins such as VIALKYD® AR 680. Four ALPEX® CK 450 combinations have been particularly successful:

	a	b	c	d
ALPEX® CK 450 (solid resin)	65 - 55	55 - 50	40 - 35	25 - 20
Plasticizer (unsubonifiable)	35 - 45	40 - 35	25 - 20	15 - 10
Alkyd resin (solid) or stand oils	-	5 - 15	35 - 45	60 - 70

#### Application and drying of the paints

When paint systems are applied in several layers, each coat should be allowed to dry for about 1 - 2 days but not longer. After about 14 days paints which are required to be highly resistant to chemicals will have through-hardened adequately.

#### Processing

ALPEX® CK 450 is fully compatible with the pigments normally used. When pigments containing iron, manganese or lead compounds are used, particularly in the presence of dryers, the storage stability of the paints is adversely affected. The suitability of such pigments should therefore be checked separately in each case. As a general principle, no dryers should be used in red-lead paints which contain ALPEX® CK 450. As a rule, only small quantities of dryers need be used in combinations of ALPEX® CK 450 with alkyd resins, e.g. 0.02 - 0.03% Co metal, calculated on solid AlpeX.

#### Antiskinning agents

ALPEX® CK 450 also is crosslinking by oxidation. Therefore the addition of antiskinning agent like ADDITOL® XL 297, approx. 1.5% calculated on solids of ALPEX® CK 450, is recommended.

### PRINTING INKS

#### Properties and uses

It is readily compatible with mineral oils used in offset and letterpress inks. Because of the non-polar structure, ALPEX® CK 450 reduce emulsification of offset inks with the dampening agent employed. It improve ink transfer, and provides prints with good scratch resistance immediately after printing. When suitable formulated, it also improve gloss. The ALPEX® resin has good resistance to chemicals. ALPEX® CK 450 can be used in screen printing inks for various purposes including the production of printed circuits. In gravure printing the ink transfer properties are improved and flocculation of pigments is reduced.

#### Viscosity, 23°C

	Unit	Value
40% in linseed oil	dPa.s	1500
35% in linseed oil	dPa.s	500
50% in PKWF 4/7	dPa.s	350
40% in PKWF 4/7	dPa.s	50

ALPEX® CK 450, 45 % in PKWF 4/7, yield clear solution in ratios of 3:1, 2:1 and 1:1 (solid) with the following products: linseed oil, linseed oilstand oil (30, 60 and 90 dPa.s), VIALKYD® AL 636, VIALKYD® AL 810 and VIALKYD® AR 680.

#### Compatibility

ALPEX® CK 450: PKWF 4/7 <sup>1</sup>	1:x	>10
MOT <sup>2</sup> of the 40% linseed oil solution	%	>1000
Ethanol tolerance <sup>3</sup> of the 40% linseed oil solution	cm <sup>3</sup>	20

<sup>1</sup> 1 part resin: x parts PKWF 4/7

<sup>2</sup> Turbidity titration with PKWF 28/31 af

<sup>3</sup> Turbidity titration with ethanol

Test formulation: 10 g of the 40% resin solution in linseed oil diluted with 30 g xylene and titrated with ethanol until turbidity appears.

- Chemically resistant paints for internal coating of tanks, pipelines and equipment where the paint is in continuous contact with aggressive media such as acids, alkalis or salt solutions. These paints are not resistant to weathering.
- Paints with limited resistance to chemicals primarily for interior surfaces continuously exposed to less aggressive media.
- Anticorrosion paints with limited or short-term resistance to chemicals for plant structures in the open.
- Weather-resistant anticorrosion paints for plants and steel buildings exposed to corrosive atmospheres, as in industrial or coastal regions. Other uses include heat-resistant paints (up to 200°C), concrete paints, underwater paints, road-marking paints, zinc-rich paints and stoving enamels.

#### Processing

ALPEX® CK 450 can be easily dissolved in mineral oils either by heating to about 180 °C or by using a high-speed-solving process. The entertainment of air during mixing should be avoid to prevent changes in compatibility due to oxidation and consequent increases in viscosity. Blanketing with inert gas is recommended.

### STORAGE

At temperatures up to 25 °C storage stability packed in original containers amounts to at least 365 days.

### DISTINGUISHING FEATURES

ALPEX® CK 450 differs from ALPEX® CK 514 in having higher viscosity and larger compatibility with mineral oils. ALPEX® CK 514 is less inclined to cause misting. It is the preferred product for addition to letterpress inks for high-speed printing machines.