

TYPE

Alkyd resin modified with styrene

FORM OF DELIVERY (f.o.d.)

60 % in xylene (60X)

SPECIAL PROPERTIES AND USE

Rapid-drying metal primers, spray-applied fillers and surfacers, one-coat paints and topcoats for interior use on metals.

Primers forced-dried by heat or stoving. Hammer finish paints, finishes for plastics.

RESIN COMPOSITION

(approx.)

30 % oil (as triglyceride)
19 % phthalic anhydride
45 % styrene

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219

| | | |
|-------------------|---------|-----------|
| dynamic viscosity | [mPa.s] | 460 - 630 |
| 50 % xylene | | |
| (25 1/s; 23 °C) | | |

Iodine Colour Number DIN 6162

| | | |
|----------------------|--|------|
| iodine colour number | | < 10 |
| 50 % xylene | | |

Acid Value DIN EN ISO 2114

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

Non-Volatile Matter DIN 55671

| | | |
|---------------------|-----|---------|
| non-volatile matter | [%] | 58 - 62 |
| (120 °C; 5 min) | | |

Not continually determined:

Non-Volatile Matter DIN EN ISO 3251

| | | |
|---------------------|-----|---------|
| non-volatile matter | [%] | 58 - 62 |
| (1 h; 125 °C; 1 g) | | |

Density (Liquids) DIN EN ISO 2811-2

| | | |
|---------|---------|------|
| density | [g/cm³] | 0,99 |
| approx. | | |
| (20 °C) | | |

Flash Point DIN EN ISO 1523

| | | |
|-------------|------|----|
| flash point | [°C] | 26 |
| approx. | | |

DILUTABILITY

| | | | |
|---------------------|---|----------------------|---|
| white spirit | ⊙ | butyl acetate | ● |
| xylene | ● | ethyl glycol acetate | ● |
| solvent naphtha | ● | ethyl glycol | ⊙ |
| methyl ethyl ketone | ● | ethanol | ○ |
| ethyl acetate | ● | butanol | ○ |

● = unlimited dilutability

⊙ = substantial dilutability

⊙ = limited dilutability

○ = very limited or no dilutability

SUGGESTED USES

The styrene-modified alkyd resin Vialkyd AV 303 is used mainly as sole binder. With the solvent contents suitably adjusted, paints based on this resin are comparable to nitrocellulose combination lacquers.

Primers

Even in unfavourable climatic conditions metal primers based on Vialkyd AV 303 dry faster than equivalent primers based on conventional alkyd resins. The overspray properties and inter-film adhesion of coatings based on this resin can be improved by admixing pure phenolic resins or terpene phenolic resins, but it must be noted that this increases the yellowing tendency of the coatings.

One-coat paints, top coats

Vialkyd AV 303 is processed for rapid drying paints intended mainly for the industrial coating of machinery, household goods, toys, metal cabinets and measuring instruments for which no long-term weather resistance is required.

Hard resins additions of 5 - 10 % also improve pigment wettability and gloss.

Drying at elevated temperatures

Paints based on Vialkyd AV 303 modified with styrene can also be forced-dried at elevated temperatures or stoved at even higher temperatures. The surface hardness of these films can be increased by small additions of urea and melamine resins.

Hammer finish paints

Because of its rapid physical drying Vialkyd AV 303 is ideal as binder for hammer finish paints.

PROCESSING

Pigmentation

This styrene-modified resin is incompatible with basic pigments such as red lead and zinc white.

For the formulation of primers it is advisable to use not only iron oxide pigments but also active pigments and extenders in the appropriate amount. The ratio of binder to pigment in primers of this type ought to be in the region of 1 : 1 to 1 : 1.5. In gloss top coats a pigment level of some 70 - 80 % should be aimed for.

It is inadvisable to disperse the paint ingredients with steel ball mills, as iron compounds may be formed which in certain circumstances cause thickening of the paint.

Driers

Paints manufactured with Vialkyd AV 303 and pigmented in a ratio of more than 1 : 1 based on the binder (solid) do not require any addition of driers. If, however, it is desired to accelerate through-drying, a little cobalt drier can be added (e. g. 0.01 % cobalt metal, relative to solid resin). It is not advisable to use more than 0.02 - 0.03 % Co metal, relative to solid resin, especially in pigmented coatings. Additions of calcium, lead, zirconium and iron driers impair the stability of the paint's viscosity.

Dilution

Spray-applied paints are ideally thinned with aromatic hydrocarbons and - to promote better flow - with small additions of higher esters. For hammer finish paints useful additions to accelerate drying are not only aromatic hydrocarbons but also highly volatile esters such as butyl acetate and ethyl acetate.

For brush-applied paints it is advisable to work with both white spirit and terpene hydrocarbons.

Stabilization

The storage stability of pigmented brush coatings, especially when stored in warm climatic regions, can be improved by adding small proportions of butanol or ethyl glycol.

STORAGE

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

DISTINGUISHING FEATURES

Because of the lower content of fatty acids and the higher styrene modification Vialkyd AV 303 shows a more rapid drying than Vialkyd AV 352m.