

TYPE

Epoxy resin-modified non-drying alkyd resin, after neutralization with amines water-thinnable

Neutralization agent

1.3 % N,N-dimethylethanolamine, as salt

FORM OF DELIVERY (f.o.d.)

70 % in butyl glycol (70BG), partially neutralized (containing also 6.7 % methoxypropanol)

CONTENT OF FATTY ACIDS

approx. 22 % vegetable fatty acids (as triglycerides)

SPECIAL PROPERTIES

Excellent pigment wetting. Outstanding anticorrosive properties. High reactivity, very good storage stability.

Used for waterborne corrosion-resistant dipping and spray primers for low stoving temperatures. High-grade waterborne single-coat finishes for industrial applications.

PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219

dynamic viscosity (10 1/s; 23 °C)	[mPa.s]	12000 - 20000
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Acid Value DIN EN ISO 2114

acid value 25 % partly neutralized with N,N-Dimethyl ethanol amine (non volatile matter)	[mg KOH/g]	35 - 65
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Non-Volatile Matter DIN EN ISO 3251

non-volatile matter (1 h; 125 °C; 1 g; EAC)	[%]	68 - 72
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Not continually determined:

Colour / Appearance VLN 250

colour	brown
appearance	clear to light cloudy

Non-Volatile Matter DIN 55671

non-volatile matter (120 °C; 5 min)	[%]	68 - 72
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Density (Liquids) DIN EN ISO 2811-2

density approx. (20 °C)	[g/cm³]	1,08
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Flash Point DIN EN ISO 1523

flash point approx.	[°C]	38
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SUGGESTED USES

For achieving film formation, Resydrol AX 246w has to be combined with water-compatible melamine resins. Although the resin itself has a high degree of reactivity, its curing temperature naturally also depends on the reactivity of the partner resin. In combination with reactive melamine resins cross-linking will occur after 20 minutes at a temperature of 120 °C.

Paint coats on the basis of Resydrol AX 246w are remarkable for their high degree of corrosion resistance, which can also be obtained without anticorrosive pigments, e. g. chromates. As Resydrol AX 246w only has a very low tendency to yellowing under the influence of heat, it can be employed for light one-coat finishes applied by dipping or spraying, which are characterized by excellent film stability and resistance to water, petrol and mineral oils. Resydrol AX 246w shows good adhesion to all metallic substrates, especially to aluminium and galvanized zinc ground.

DILUTABILITY

After neutralization with organic nitrogen bases such as dimethylethanolamine or triethylamine, Resydrol AX 246w can be diluted with water in the pH range from 7.3 to 8.5.

It should be noted that 25 % of the acid value have already been neutralized by dimethylethanolamine. Resydrol AX 246w can also be diluted to any desired extent with water-miscible solvents such as glycol ethers and low alcohols. Simultaneous use of small amounts of solvents which are not miscible with water has to be carefully tested.

COMPATIBILITY

Resydrol AX 246w is fully compatible with both Resydrol VAR 5400w and water-thinnable melamine resin types.

Further combinations, e. g. with acrylic resins or oil-free polyester types, are also possible but require testing of compatibility in every individual case.

PROCESSING

Curing with amino resins

Favourable conditions for combination with all suitable melamine resins are in the range of 90 : 10 to 75 : 25 (referred to 100 % of resins).

Adjustment of pH value

Adjustment of the required pH value is best done with dimethylethanolamine or also with triethylamine. In some cases, simultaneous employment of amines of low volatility, e. g. triethanolamine, may be necessary, as high reactivity of the resin might cause wrinkling of the surface.

Pigmentation

Resydrol AX 246w has very good pigment wetting properties and can be processed with all pigments and fillers suitable for water-soluble systems. Active anticorrosive pigments, e. g. lead silico-chromate and strontium chromate, may also be used but in most cases are not necessary on account of the high corrosion-protection effect of Resydrol AX 246w. Of phosphate pigments, chromium phosphate is very well suited.

Beside current fillers such as barium sulfate, micro talcum, aluminium silicate etc., also aluminium oxide hydrates (e. g. Martinal OL) lend themselves very well for this use. Dispersion is possible on all current aggregates and is best performed in neutralized form. In addition to organic auxiliary solvents, a certain amount of deionized water should always be used for adjustment of viscosity of the paste.

Paints and primers on the basis of Resydrol AX 246w show very good storage stability if the recommend pH range is carefully observed. For achieving maximum stability, simultaneous use of solvents (80 - 100 parts of 100 % of resin) is recommended.

Dilution

Simultaneous application of solvents improves thinning and flow properties of Resydrol AX 246w. Tap water of not too high hardness can be used for thinning.

Application

The processing viscosity of dipping paints is in the range of 90 - 170 mPa.s, that of spray paints in the range of 120 - 220 mPa.s, DIN EN ISO 3219, 23 °C, cone-and-plate apparatus, shear rate: 25 s⁻¹. Addition of appropriate defoaming and wetting agents is recommended.

STORAGE

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

DISTINGUISHING FEATURES

In comparison with Resydrol VAR 5400w Resydrol AX 246w has a higher degree of reactivity and resistance to yellowing.