

Adhesion Resin LTH

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General description

A hard, special-purpose supplementary resin designed to improve the initial, long-term and intercoat adhesion of paints based on a number of binders to metallic and mineral substrates and to certain plastics.

Specification

Property	Value	Unit	Test method
Viscosity at 23 °C (60% in xylene)	600 – 1500	mPa s	DIN EN ISO 3219
Melting point	90 – 102	°C	DIN 53 181
Acid number	12 - 20	mg KOH/g	DIN EN ISO 2114

Typical data

Colour (Gardner) (60% in xylene)	approx. 2	-	DIN ISO 4630
Density at 20 °C	approx. 1.23	g/cm ³	DIN 53 479-B //ISO/ R 1183
Hydroxyl number	approx. 25	mg KOH/g	DIN EN ISO 4629

Chemical Classification

A special-purpose polyester resin.

Supply Form

Irregular, drop-shaped pellets with a mean diameter of 1 - 2 cm.

Processing

Heat and fast stirrers should be used in the manufacture of resin solutions, if short dissolving times are to be achieved. Minimum temperatures of 50 - 60 °C are recommended in the case of solvents and 90 – 100 °C in the case of plasticizers.

Storage Stability and Packaging

PE bags antistatic with 25 kg net contents.

When protected against light and humidity and at storage temperatures of less than 25 °C, Adhesion Resin LTH has a storage stability of 6 months.

Food Contact

Actual information regarding national and international regulation for the use of Adhesion Resin LTH in food packaging is available upon request.

Solubility

Solvent/ Plasticizer	Resin content (% by weight)		Solvent/ Plasticizer	Resin content (% by weight)	
	50	10		50	10
White spirit	-	-	Butyl acetate 98/100	+	-
Toluene	+	+	Ethanol	-	-
Xylene	+	+	n-Butanol	-	-
Solvent naphtha	+	±	Methyl benzyl alcohol	+	+
Acetone	-	-	Methoxypropanol	+	+
Methyl ethyl ketone	+	+	Methoxypropyl acetate	+	+
Methyl isobutyl ketone	+	-	Methoxybutyl acetate	+	+
Cyclohexanone	+	+	Dibutyl phthalate	+	+
Di isobutyl ketone	-	-	Di-2-ethyl hexyl phthalate	+	-
Methyl acetate	-	-	Di isooctyl phthalate	+	±
Ethyl acetate	+	-			

+ = clear solution

± = slightly turbid solution

- = turbid solution

Some of the abovelisted solvents give a clear solution at a higher resin content, e.g. 50 % by weight. When such solutions are more highly diluted, turbidity or precipitation may result. To prevent such occurrences, it is necessary to add a solvent giving a clear 10 % solution.

Compatibility

Miscibility with binders:

Adhesion Resin LTH is compatible with vinyl chloride copolymers, polyvinyl chloride, chlorinated rubber, nitrocellulose, ketone resins, some alkyd and acrylic resins, saturated polyester resins, melamine and urea resins, epoxy resins, and a number of other binders and resins. Adhesion Resin LTH is incompatible with unsaturated polyester resins containing styrene. A detailed compatibility table can be supplied on request.

It is advisable to check the compatibility of Adhesion Resin LTH in the clear lacquer because binder combinations are often still compatible whereas individual constituents alone are incompatible with Adhesion Resin LTH.

Compatibility with pigments and fillers:

Adhesion Resin LTH is readily compatible with most pigments and fillers.

Properties and applications

Adhesion resin LTH is a hard resin having a high degree of resistance to light and weathering while simultaneously swelling very little in water and showing high resistance to saponification. It is a supplementary resin which improves the adhesion of numerous paints to metallic and mineral substrates and also to some plastics.

The attainable improvement in adhesion depends largely on the nature of the binder. It is significantly higher in pigmented paints than in clear paints. Adhesion Resin LTH is used in quantities equivalent to 5 – 15 % of the binder. In some cases even larger amounts are advantageous. Under certain conditions this may lead to a reduced flexibility of the paint which in most instances can be compensated for by increasing the amount of plasticizers. A greater addition of Adhesion Resin LTH may cause solvent retention in the film.

Among binders, it is particularly vinyl chloride copolymers whose adhesion can be increased most effectively. The use of Adhesion Resin LTH may be indicated even for vinyl chloride terpolymers which already possess good adhesion on account of their free carboxyl groups. In most cases this will markedly increase the long-term adhesion during prolonged outdoor weathering.

Adhesion Resin LTH is also used in combination with other binders and paint systems in order to improve the adhesion. Good results can be achieved in alkyd melamine resin stoving paints, paints based on acrylic resins and polyurethanes and in a large number of special combination paints. Adhesion Resin LTH enters into the reaction mechanism of two-component paints via its free hydroxyl and carboxyl groups or its double bonds.

When it is dissolved in plasticizers, it can be used in the manufacture of self-adhering organosols and plastisols. An improved adhesion can also be frequently achieved in printing inks for plastics such as polyvinyl chloride, or pretreated polyethylene. For the application to plasticized polyvinyl chloride, it is important to note that there is no plasticizer migration into Adhesion Resin LTH.

Safety and Handling

Please refer to our Safety Data Sheet.

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