

BYK-377

Silicone surface additive for solvent-free, radiation curable, and solvent-borne coatings, adhesives, and printing inks with a strong reduction of surface tension. Hydroxy-functional and solvent-free.

Product data

Composition

Polyether-modified polydimethylsiloxane

Typical properties

The values indicated in this data sheet describe typical properties and do not constitute specification limits.

Density (20 °C): 1.02 g/cm³
OH value: approx. 45 mg KOH/g
Delivery form: liquid

Storage and transportation

Product shelf life in unopened original packaging: 36 months
Stir before use. Separation or turbidity may occur at temperatures below 5 °C. Warm to 20 °C and stir.

Applications

Printing inks

Special features and benefits

BYK-377 is a highly effective silicone additive, which improves substrate wetting of solvent-free UV curable overprint varnishes and printing inks even at low dosage levels. In most cases, half of the standard dosage of conventional silicones is sufficient. The significant reduction in surface tension makes this product especially suitable for wetting critical substrates and conventional offset inks. The benefits of BYK-377 are particularly apparent in printing inks on high speed printing machines. Since it is highly compatible with standard resins, it is also useful for the production of highly transparent overprint varnishes. When used in UV systems, the effectiveness of BYK-377 is comparable to that of BYK-UV 3510. Both products are interchangeable. Of all BYK silicone additives, BYK-377 is the most suitable for improving tape release properties in overprint varnishes.

Recommended use

Especially recommended for overprint varnishes, flexo inks, offset inks, and screen inks.

Recommended levels

0.05-2 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions

The additive can be incorporated during any stage of the production process, including post-addition.

Coatings industry**Special features and benefits**

Due to its high surface activity, the additive accumulates on the surface of the coating. Its reactivity allows it to be incorporated into the polymer network and therefore to be anchored in the coating surface. BYK-377 improves surface slip, substrate wetting, and tape release even at low dosage levels. Half of the standard dosage of conventional silicones is generally sufficient. If the additive is fixed in the coating surface via its reactive groups, these properties remain present longer than with conventional, non-reactive silicones.

Recommended use

BYK-377 reacts with the resin via primary OH-groups and is primarily used in solvent-borne and solventfree two-pack polyurethane systems, UV curable coatings, polyester/melamine baking systems as well as a variety of aqueous systems. The high level of compatibility allows the formulation of highly transparent coatings without turbidity.

Wood and furniture coatings	☒
General industrial coatings	☐

☒ especially recommended ☐ recommended

Recommended levels

0.05-1 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions

The additive can be incorporated during any stage of the production process, including post-addition.

Special note

When using the coatings in exterior areas, weathering removes the additive along with the top resin layer from the coating early on. Tests must be performed to determine whether these conditions allow the additive to be effective for a sufficiently long period of time. If the additive is used in coating systems which incorporate it via its functional groups, it is important that the coating is carefully and evenly sanded before recoating or retouching in order to facilitate sufficient adhesion.

Adhesives and sealants**Special features and benefits**

BYK-377 is a highly effective silicone additive, which significantly reduces surface tension and therefore improves wetting of critical substrates. Its OH functionality allows it to be incorporated into the adhesive matrix. The high level of compatibility allows the formulation of highly transparent adhesives without turbidity.

Recommended use

Especially recommended to improve substrate wetting of UV-crosslinking adhesive systems.

Recommended levels

0.05-1 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions

The additive can be incorporated during any stage of the production process, including post-addition.



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