BYK-3771

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

Product Data

Composition
Polyether-modified, hydroxy-functional polydimethylsiloxane

SVHC label-free (EU SDS)

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

Density (20 °C): 1.03 g/ml
OH value (solids): approx. 45 mg KOH/g

Food Contact Legal Status
For the current food contact legal status, please contact our product safety department or visit www.byk.com for further information.

Storage and Transportation
Mix well before use. Separation or turbidity may occur at temperatures below 5 °C. Warm to 20 °C and mix well.

Special Note
BYK-3771 is a low-cycle version of BYK-377. The cyclic siloxane content D4 / D5 / D6 is in each case less than 0.1 %, therefore the SVHC label is not required in the safety data sheet.

Applications

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-3771 improves surface slip, substrate wetting, and tape release even at low dosages. 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-3771 reacts with the binder via primary OH groups and is primarily used in solvent-borne and solvent-free two-pack polyurethane systems, UV-curable coatings, polyester/melamine baking systems as well as a variety of aqueous systems. Its good compatibility enables highly transparent coatings to be formulated without turbidity.

Wood and furniture coatings	■
Can coatings	■
Coil coatings	□
Leather 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. Optimal levels are determined through a series of laboratory tests.

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 binder 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.

Printing Inks

Special Features and Benefits
BYK-3771 is a highly effective silicone additive, and 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. As a result of the strong reduction in surface tension, this product is especially suitable for wetting critical substrates and conventional offset inks. The benefits of BYK-3771 are particularly apparent in printing inks on high-speed printing machines. The good compatibility with standard resins enables highly transparent overprint varnishes to be produced. When used in UV systems, the effectiveness of BYK-3771 is comparable to that of BYK-UV 3510. Both products are interchangeable. Of all the BYK silicone additives, BYK-3771 is the most suitable for improving tape release properties in overprint varnishes.

Recommended Use
Especially recommended for overprint varnishes, flexographic inks, offset inks, and screen printing inks.

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

The above recommended levels can be used for orientation. Optimal levels are determined through a series of laboratory tests.

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

Adhesives & Sealants

Special Features and Benefits
BYK-3771 is a highly effective silicone additive and provides a strong reduction in surface tension. It thereby improves the wetting of critical substrates. Its OH functionality allows it to be incorporated into the adhesive matrix. Its good compatibility enables highly transparent adhesives to be formulated without turbidity.

Recommended Use
Especially recommended for improving the 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. Optimal levels are determined through a series of laboratory tests.

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

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