DISPERBYK-2205

Wetting and dispersing additive for solvent-borne and solvent-free liquid coatings, printing inks and inkjet inks to stabilize inorganic and organic pigments.

Product data

Solvent-free

Composition
High molecular-weight copolymer with pigment-affinic groups

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

Density (20 °C):	1.03 g/cm³
Non-volatile matter (10 min, 150 °C):	> 99 %
Melting point:	50 °C
Flash point:	> 120 °C
Acid value:	24 mg KOH/g
Amine value:	27 mg KOH/g
Delivery form:	Pellets

Storage and transportation
To be stored and transported at a temperature below 40 °C.

Special note

Overview: Solubility of DISPERBYK-2205 in different solvents and reactive diluents

30 % DISPERBYK-2205 dissolved in 70 % solvent	4 hours' storage at 50 °C	1 day's storage at 20 °C	4 weeks' storage at 20 °C
Alcohols and glycol ethers			
Butylglycol	Soluble	Soluble	Insoluble
Ethanol	Soluble	Insoluble	Insoluble
Isopropanol	Soluble	Insoluble	Insoluble
n-Butanol	Soluble	Insoluble	Insoluble
Diacetone alcohol	Soluble	Insoluble	Insoluble
Isobutanol	Soluble	Insoluble	Insoluble
Propylene glycol	Insoluble	Insoluble	Insoluble
Di-methoxy propanol	Soluble	Insoluble	Insoluble
Methoxy propanol	Soluble	Soluble	Insoluble
Water	Insoluble	Insoluble	Insoluble
Ethoxy propanol	Soluble	Partially soluble	Partially soluble
Texanol	Partially soluble	Insoluble	Insoluble

30 % DISPERBYK-2205 dissolved in 70 % solvent	4 hours' storage at 50 °C	1 day's storage at 20 °C	4 weeks' storage at 20 °C
Other organic solvents			
Isophorone	Soluble	Soluble	Soluble
Dimethyl sulfoxide	Soluble	Insoluble	Insoluble
Dimethyl carbonate	Soluble	Soluble	Soluble
Propylene carbonate	Soluble	Insoluble	Insoluble
PCBTF	Soluble	Soluble	Soluble
Aromatic and aliphatic hydrocarbons			
Toluene	Soluble	Soluble	Soluble
Xylene	Soluble	Soluble	Soluble
Solvent naphtha 100	Soluble	Soluble	Soluble
Solvent naphtha 150 ND	Soluble	Soluble	Soluble
Solvent naphtha 200 ND	Soluble	Soluble	Soluble
White spirit	Insoluble	Insoluble	Insoluble
Isoparaffins 166 °C	Insoluble	Insoluble	Insoluble
Isoparaffins 180 °C	Insoluble	Insoluble	Insoluble
Ketones and esters			
Acetone	Soluble	Soluble	Soluble
Methyl ethyl ketone	Soluble	Soluble	Soluble
Methyl isobutyl ketone	Soluble	Soluble	Soluble
Cyclohexanone	Soluble	Soluble	Soluble
Ethyl acetate	Soluble	Soluble	Soluble
Butyl acetate	Soluble	Soluble	Soluble
t-Butyl acetate	Soluble	Insoluble	Insoluble
Methoxypropyl acetate	Soluble	Soluble	Soluble
Butyl glycol acetate	Soluble	Insoluble	Insoluble
Butyl diglycol acetate	Soluble	Insoluble	Insoluble
Ethyl diglycol acetate	Soluble	Insoluble	Insoluble
Dibasic ester	Soluble	Soluble	Soluble
Texanol	Partially soluble	Insoluble	Insoluble

30 % DISPERBYK-2205 dissolved in 70 % reactive diluent.
The DISPERBYK-2205 – reactive diluent mixture dissolves when heated up to 60 °C

Reactive diluents	
TPGDA	Soluble
TMPTA	Soluble
HDDA	Soluble
DPGDA	Soluble

Applications

Coatings industry

Special features and benefits

DISPERBYK-2205 is characterized by its highly effective stabilization of inorganic and organic pigments in solvent-borne and solvent-free coating systems. In combination with the pigments, the use of DISPERBYK-2205 minimizes thixotropy whilst generating Newtonian flow behavior. It also significantly improves both color strength and transparency, and increases gloss whilst minimizing haze. Furthermore, due to its effective reduction in viscosity, DISPERBYK-2205 enables an increase in the pigment content of organic and inorganic pigments in pigment concentrates. The product is suitable for single grinds and co-grinds.

DISPERBYK-2205 is also suitable for acid-catalyzed systems.

Recommended use

Coil coatings	■
Industrial coatings	■
Wood coatings	□
Automotive coatings	■

■ especially recommended □ recommended

Recommended levels

Amount of additive (as supplied) based on the pigment:

Inorganic pigments:	2–7 %
Organic pigments:	15–30 %
Carbon black:	20–70 %

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

Incorporation and processing instructions

DISPERBYK-2205 can be used in different ways in the dispersing process:

a. Dissolving in organic solvents: The solubility of DISPERBYK-2205 is significantly dependent on the type of organic solvent that is being used. This is why concentrated solutions of DISPERBYK-2205 in organic solvents should be used immediately after their manufacture; in suitable solvents, the mixture can be stored for several days. Some examples are provided in the table under “Special Note”.

b. Dissolving of DISPERBYK-2205 in the grinding resin - solvent mix before incorporating pigments and fillers: For this purpose, the grinding resin and/or additional solvent is pre-mixed with the additive and homogeneously distributed whilst stirring, until the DISPERBYK-2205 is completely dissolved; only then should solids be incorporated.

c. Addition of the additive to the millbase without prior dissolving: The dispersing process can be started without the prior homogenization of the additive in the millbase. This method is suitable only if it is assured that the millbase achieves a temperature of at least 60 °C.

Printing inks

Special features and benefits

DISPERBYK-2205 is particularly recommended for the manufacture of medium-polarity to non-polar, solvent-borne pigment concentrates and printing inks. It improves the color strength and transparency of the grinds. The viscosity of the concentrate and printing inks is reduced.

Recommended use

DISPERBYK-2205 is recommended for use in polyurethane and vinyl systems, in toluene and other non-polar gravure inks, and lamination inks.

Recommended levels

Amount of additive (as supplied) based on the pigment:

5–15 % additive (as supplied) based on organic pigments.
5–15 % additive (as supplied) based on carbon black.

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

Incorporation and processing instructions

DISPERBYK-2205 can be used in different ways in the dispersing process:

a. Dissolving in organic solvents: The solubility of DISPERBYK-2205 is significantly dependent on the type of organic solvent that is being used. This is why concentrated solutions of DISPERBYK-2205 in organic solvents should be used immediately after their manufacture, in suitable solvents, the mixture can be stored for several days. Some examples are provided in the table under “Special Note”.

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Inkjet Inks

Special features and benefits

DISPERBYK-2205 is recommended for use in both solvent-borne drop-on-demand and also in continuous inkjet applications. Thanks to its outstanding deflocculation, DISPERBYK-2205 significantly improves pigment wetting and optical properties (color strength, transparency, gloss, haze). The viscosity both of the pigment concentrates as well as the final inkjet inks is reduced and thixotropic flow behavior prevented. In addition, it can achieve long-term stability without changing viscosity. The excellent deflocculating properties result in a very fine and close particle size distribution, through which the filtration times of the inkjet inks are considerably reduced.

Recommended use

Drop-on-demand inkjet inks	■
Strong-solvent inkjet inks	■
Mild-solvent inkjet inks	■
Continuous inkjet inks	■

■ especially recommended □ recommended

Recommended levels

Amount of additive (as supplied) based on the pigment:

20–70 % additive (as supplied) based on organic pigments.
30–90 % additive (as supplied) based on carbon black.

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

Incorporation and processing instructions

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a. Dissolving in organic solvents: The solubility of DISPERBYK-2205 is significantly dependent on the type of organic solvent that is being used. This is why concentrated solutions of DISPERBYK-2205 in organic solvents should be used immediately after their manufacture, in suitable solvents, the mixture can be stored for several days. Some examples are provided in the table under “Special Note”.

b. Dissolving of DISPERBYK-2205 in the grinding resin - solvent mix before incorporating pigments and fillers: For this purpose, the grinding resin and/or additional solvent is pre-mixed with the additive and homogeneously distributed whilst stirring, until the DISPERBYK-2205 is completely dissolved; only then should solids be incorporated.

c. Addition of the additive to the millbase without prior dissolving: The dispersing process can be started without the prior homogenization of the additive in the millbase. This method is suitable only if it is assured that the millbase achieves a temperature of at least 60 °C.

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Data sheet
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