BYK-ET 3031

Aqueous wetting and dispersing additive for aqueous concentrates of electrically conductive carbons and for the formulation of highly filled electrode slurries of Li-ion cells.

Product data

Composition
Aqueous solution of a polyether-modified styrene-maleic anhydride copolymer

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

Density (20 °C):	1.06 g/cm³
Non-volatile matter (10 min, 150 °C):	40 %
Solvents:	water
Acid value:	10 mg KOH/g
Electrochemical stability:	0,1 V to 4,8 V (vs. Li/Li^+)

Storage and transportation
Separation or turbidity may occur during storage or transportation below 0 °C. Heat to 20 °C and stir.

Applications

Energy storage

Special features and benefits
The stabilizing effect of BYK-ET 3031 shortens the dispersion process of carbon black and other conductive carbons (e.g. Ketjenblack®, carbon nanotubes, etc.). Adding BYK-ET 3031 achieves better stabilization of the particles, leading to reduced viscosity of the slurry compared to standard systems without dispersant. BYK-ET 3031 facilitates the formulation of electrode slurries for Li-ion cells with a higher solid content. The higher solid content in turn accelerates the drying process and improves the productivity of the electrode manufacturing.

Recommended levels
Amount of additive (as supplied) based upon:

Carbon black/Ketjenblack®/CNT/graphene: 5–50 %

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

Incorporation and processing instructions
BYK-ET 3031 should first be mixed with the solvent. Then the carbons should be added and homogeneously mixed in. The suitable dispersion time of the slurry is determined by measuring the particle size development over the dispersion time. The volume resistivity of the electrode coating should also be measured over the dispersion time.

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Data sheet
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