BYK-ET 3000

Wetting and dispersing additive for solvent-borne concentrates of electrically conductive carbons and for the formulation of highly filled electrode slurries of Li-ion cells.

Product Data

Composition
Solution of a modified styrene maleic acid copolymer

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

Density (20 °C):	1.07 g/ml
Solvents:	1-methyl-2-pyrrolidone
Non-volatile matter (20 min, 175 °C):	30 %
Amine value:	2.8 mg KOH/g
Acid value:	1.6 mg KOH/g
Electrochemical stability:	0.1 to 4.8 V (vs. Li/Li^+)
Appearance:	Yellow to intense green

Storage and Transportation
This product is moisture sensitive. To prevent separation and turbidity, temperature should be from 10 to 50 °C during transportation and storage. To homogenize the product, heat to 20 °C and stir.

Applications

Energy Storage

Special Features and Benefits
The stabilizing effect of BYK-ET 3000 shortens the dispersion process of carbon black and other conductive carbons (e.g. Ketjenblack®, carbon nanotubes, etc.). Adding BYK-ET 3000 achieves a better stabilization of the particles, leading to reduced viscosity of the slurry compared to standard systems without dispersant. BYK-ET 3000 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

Additive (as supplied) based upon:

Conductive carbons (carbon black/Ketjenblack®/CNT/Graphene):	5-50 %
Active material:	0.3-2.0 %

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 3000 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 dispersion time. The volume resistivity of the electrode coating should also be measured over dispersion time.

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