



CNTs-based Conductive Additives for Lithium Ion Battery PRODUCT DATA SHEET

CNTs-based Conductive Additives for Lithium Ion Battery

Description

Carbon nanotubes are simple substances composed of carbon atoms and can be regarded as hollow tubular structures formed by the curling of graphene. On the surface of carbon nanotubes, the carbon atoms are bonded to each other in the form of sp^2 hybrid orbitals, which are arranged as hexagonal graphite layers. In theory, this regular hexagonal structure is perfectly evenly distributed over the entire surface of the carbon nanotubes. Topologically, the common structure and properties of graphene and carbon nanotubes are one of the important factors for their similarity. CNTs-based Conductive Additives for Lithium Ion Battery are a kind of composite. It is composed of high electric conductive CNTs and a kind of carbon black. The carbon black particles can not only prevent dispersed CNTs from reagglomerating, but also exhibit synergetic effect with CNTs in Li-ion battery. More important, the product is very easy to be dispersed in Li-ion battery electrode, and the CNTs network can ensure the Li-ion battery having the best cycle performance. As a CNTs-based conductive additive, the product can fit for artificial graphite, spherical natural graphite, MCMB, CMS, $Li_4Ti_5O_{12}$ et al anode materials, and for $LiCoO_2$, $LiFePO_4$, $LiMn_2O_4$, $LiNiCoO_2$, $LiNi_{0.5}Mn_{1.5}O_4$ et al cathode materials of lithium ion battery. Now, The product is utilized by most of lithium ion power vehicle manufacturers.

Abvigen offers high quality CNTs-based conductive additives for lithium ion battery. The product has high repeatability between batches, which can meet the needs of various customers for personalized materials such as research and development, testing and production.

For custom sizes, formulations or bulk quantities please contact our customer service department.

Website: www.abvigen.com **Phone:** +1 929-202-3014 **Email:** info@abvigenus.com

Characteristics

Type: CNTs-based Conductive Additives for Lithium Ion Battery

Size: 5 g

Outside diameter (d50): 50-80 nm (from HRTEM, Raman)

Length: 10-15 μm (TEM)

SSA: > 60 m^2/g (BET)



Appearance: Black Powder

PH value: 9

Ash: < 0.3 wt% (TGA)

Tap density: 0.17 g/cm³

Adsorption value: >530 ml/100 g

Volume resistivity: $2 \sim 5 \times 10^{-4} \Omega \cdot \text{cm}$ (Four-probe Method)

Moisture (as packed): 0.1-0.3 wt%

Content of Ni: < 0.5 wt% (ICP)

Content of Mg: < 50 ppm (ICP)

Content of Fe: < 50 ppm (ICP)

Advantages

Compared with traditional conductive additive of Li-ion battery, the product contributes the evident superiority for Li-ion battery as follows:

Longer cycle life and excellent performance at large current (increase twice)

Higher tap density (adding 10%)

Higher electrode conductivity

Stronger electrode mechanical strength and adhesive attraction

Applications

The product can be used on both anode and cathode of Li-ion battery. The appropriate quantity of additive is 2~3wt% on cathode or 1~2wt% on anode. Dispersion circumstance could be oil or water.

Note

Before using the product, disperse it in N-methyl-2-pyrrolidinone or water first (high-speed stirring for 2~3 h, adding PVP or other dispersing agents if necessary). After dispersion, add in binders and stir for 1 h. Then add in electrode materials and stir mixture for 4~5 h.

Ordering Information

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