

ORGACYL™

CNT solventborne dispersions

ORGACYL™ NMP2313

Multiwall carbon nanotube solvent-borne dispersions with polymeric dispersant

General Information

Description

Nanocyl is a leader in developing and commercializing Carbon Nanotubes (CNT) and carbon nanotubes based products to meet high performance industrial needs. Our strategy is to deliver benefits to the challenges of the Energy, Electronics and Transportation industries.

ORGACYL™ NMP2313 dispersion is Nanocyl dispersion of NC5000™ multiwall carbon nanotube (MWCNT) in N-Methyl-2-pyrrolidone (NMP) solvent.

This product has been specifically designed to ease-up the incorporation of carbon nanotubes in application systems using NMP such as Lithium-ion electrode formulations, coatings and films. The dispersion contains a polymeric dispersant for superior dispersion and stability over long period of time.

Key Applications

- Lithium-ion batteries

Benefits

The product has been designed to improve performances by:

- Improving the mechanical properties of electrodes
- Decreasing the internal resistance of battery cells
- Increasing the lifecycle of the battery

And to ensure processing compatibility:

- Compatible with electrode material
- Direct incorporation possible into electrode slurry compatible with electrolyte media

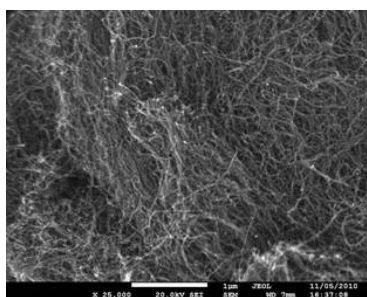
Technical Data

Main Characteristics

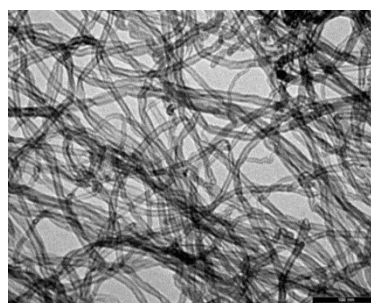
ORGACYL™ NMP2313 – Composition:

Component	Loading
Multiwall carbon nanotube NC5000™	3 % wt.
Polymeric Dispersing agent	< 2 % wt.
N-Methyl-2-pyrrolidone	> 95 % wt.

NANOCYL® NC5000™ (Figure 1), thin multiwall carbon nanotubes, are produced via the Catalytic Chemical Vapor Deposition (CCVD) process.



A



B

Figure 1. NC5000™ multiwall carbon nanotubes – scale: A) 1 μm – SEM; B) 100 nm - TEM.

Specific Characterization of NC5000™

Properties	Unit	Value	Method of Measurement
Average diameter	10 ⁻⁹ m	7 - 9	Transmission Electron Microscopy (TEM)
Average length	μm	< 15	Transmission Electron Microscopy (TEM)
Carbon purity	%	92	Thermogravimetric Analysis (TGA)
Transition metal oxide	%	< 1%	Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
Surface area	m ² /g	300 – 380	BET surface area Analysis

*Pyrolytically deposited carbon on the surface of NC5000™

Rheological Characteristics

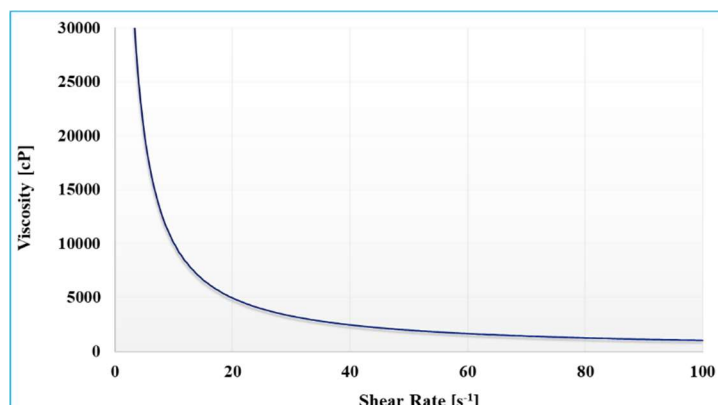


Figure 2. Viscosity flow curve of ORGACYL™ NMP2313 at 25°C

Commercial/Safety Information

Packaging

ORGACYL™ NMP2313 is available in fluorinated plastic bottles/canisters with double-caps.

Minimum Order of Quantity

Nanocyl's minimum order quantity for ORGACYL™ NMP2313 is 10kg. Smaller sample is available on request.

Storage

Keep ORGACYL™ NMP2313 only in the original closed container in a dedicated place. Keep containers in a cool, dry storage place with adequate ventilation. Keep storage temperature between 5-30°C. Keep away from freezing. It is recommended not to store this product outdoors during the winter.

Health and Safety

A Material Safety Data Sheet (MSDS) is available to provide both workers and emergency personnel with the proper procedures for handling or working with the ORGACYL™ NMP2313. This MSDS includes information such as physical data (form and color, melting point, etc.), handling and storage recommendations, first aid measures and ecological information. The Safety Data Sheet is provided with any order and should be observed.

Disclaimer

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