TECHNICAL DATA SHEET

Industrial Grade Multi Walled Carbon Nanotubes

Product code / SKU: 030108

Description

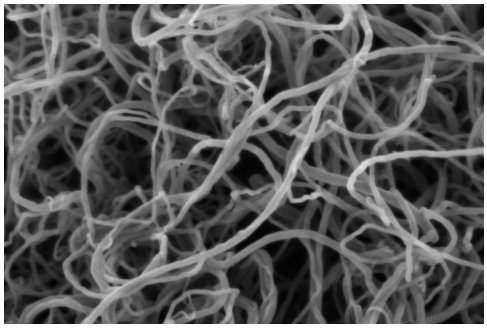
Industrial grade multi walled carbon nanotube (MWCNT) powder produced by catalytic chemical vapor deposition (CCVD) with an outer diameter of 10 to 20 nm and a length of 20 to 50 um. BET specific surface area is 230 to 270 m2/g and purity greater than 97 wt%. This product is engineered as a cost-effective conductive additive for high volume applications including lithium-ion battery electrode slurries, supercapacitor electrodes, polymer composites and conductive/antistatic formulations.

Specifications

Property	Specification
Appearance	Black powder
Outer diameter (OD)	10-20 nm (by TEM)
Length	20-50 um (by SEM)
Purity	> 97 wt%
Ash content	≤ 3 wt% (muffle furnace, 900 C, 4 h)
Specific surface area (BET)	230-270 m2/g
Bulk density	0.063 g/cm3
Tapped density	0.05-0.08 g/cm3
Powder resistivity	< 1000 uOhm·m (four-probe, compressed)
Iron (Fe)	≤ 5000 ppm
Chromium (Cr)	≤ 15 ppm
Nickel (Ni)	≤ 15 ppm
Copper (Cu)	≤ 15 ppm
Zinc (Zn)	≤ 50 ppm
Cobalt (Co)	≤ 330 ppm

Values shown are representative of typical production. Outer diameter by TEM; length by SEM; specific surface area by nitrogen adsorption (BET); powder resistivity by four-probe on a compressed sample; metals by ICP-OES on the post-ash residue.

Characterization



SEM, 100,000x, scale bar 300nm, representative

Applications

Conductive additive for lithium-ion battery cathodes and anodes, supercapacitor electrodes, polymer composites for conductive, antistatic and mechanical reinforcement applications, coatings and inks. Suitable for preparation of conductive MWCNT pastes and slurries.

Packaging

Standard packaging is multi-layer bags for 2 to 8 kg quantities and lined bulk bags for 50 to 100 kg quantities, with inner polyethylene liners. Packaging is clean, intact and sealed to prevent moisture pickup, leakage and breakage during storage and transport.

Storage and Handling

Store sealed, dry, at room temperature (recommended 10 to 40 C, humidity below 85%). Shelf life is 12 months in unopened original packaging under the specified storage conditions. Minor moisture fluctuation during prolonged ambient storage is normal. Low-density black powder; use local exhaust ventilation and respiratory protection when handling dry powder; see SDS.

Safety Data Sheet available at cheaptubes.com/nanomaterial-msds-safety-sheets.