



Technical Data Sheet

ACS Material Purified Carboxylic Multi-Walled Carbon Nanotubes (MWNTs-COOH, 30-50 nm)

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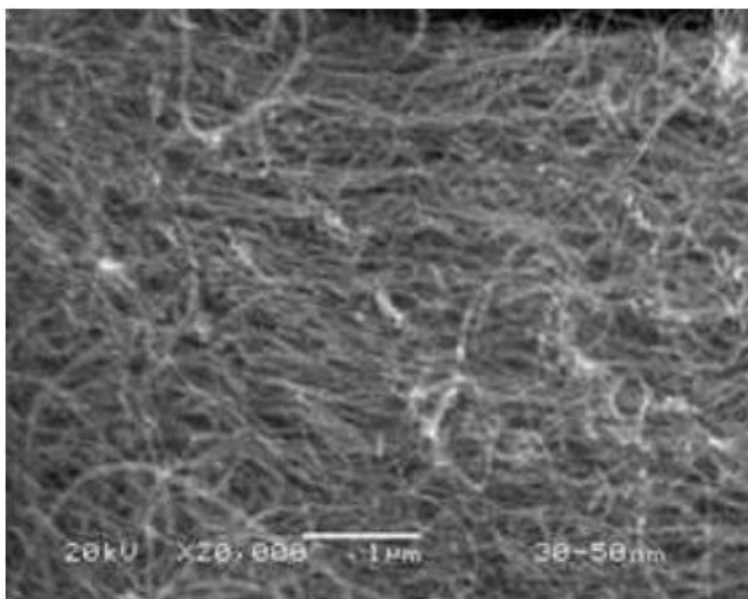
Revision: 010818

1. Preparation Method

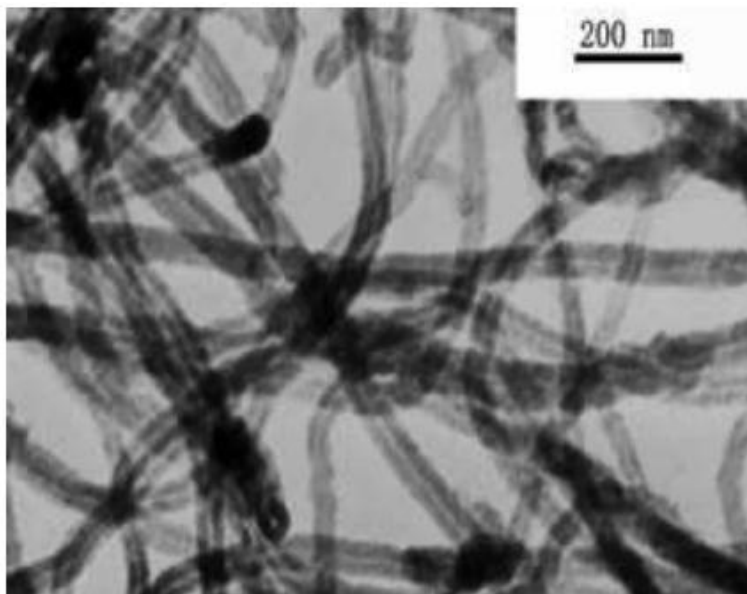
Chemical Vapor Deposition (CVD) Method

2. Characterizations

Purity:	>95%
-COOH Content:	0.73 wt.%
Color:	Black
Outer Diameter:	30-50 nm
Inner Diameter:	10-20 nm
Length:	<10 μm
SSA:	>60 m^2/g
Tap Density:	0.22 g/cm^3
True Density:	$\sim 2.1 \text{ g}/\text{cm}^3$
EC:	>100 S/cm



SEM Image of ACS Material Purified MWNTs-COOH (Length <10 μm)



TEM Image of ACS Material Purified MWNTs-COOH (Length <10 μm)

Certificate of Analysis

Components	Contents (%)
C	97.37
Cl	0.20
Fe	0.55
Ni	1.86
S	0.02

EDS Analysis of ACS Material Purified MWNTs-COOH (Length <10 μm)

3. Application Fields

Catalysts, additives in polymers, nanoelectrodes, drug delivery, sensors, electromagnetic-wave absorption and shielding, electron field emitters for cathode ray lighting elements, flat panel display, gas-discharge tubes in telecom networks, energy conversion, lithium-battery anodes, hydrogen storage, supercapacitors, nanotube composites (by filling or coating), nanoprobes for STM, AFM, and EFM tips, nanolithography, reinforcements in composites, *etc.*

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