



# Institute for Environmental Nanotechnology

## TECHNICAL DATA SHEET

MWNT™ -OH

HYDROXYL FUNCTIONALIZED MWCNT

We provide ultra-pure -OH functionalized Multiwall Carbon Nano Tubes to enhance performance of product in a matrix when compared to non-functionalized materials.

### Performance

- ❖ Improves Thermal conductive
- ❖ Improves Electrically Conductive
- ❖ Improves Mechanically Stability
- ❖ Dispersed much easier

MWNT	Description
Production method	Chemical Vapor Deposition
Available form	Black powder
Purity	90%
Diameter	10-15 nm
OH Content	20%
Surface Area	~340 m <sup>2</sup> /g
Length	~4 μm

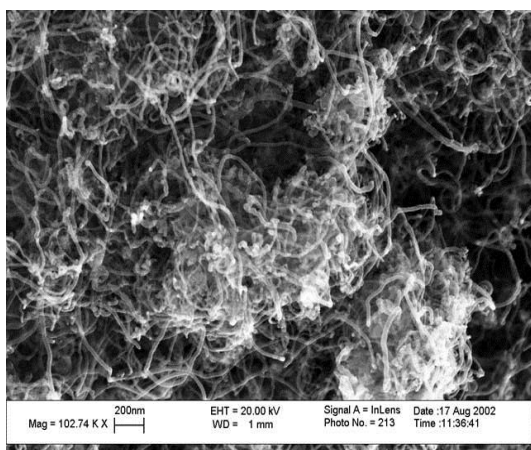


Fig 1. TEM Image of MWNT-COOH

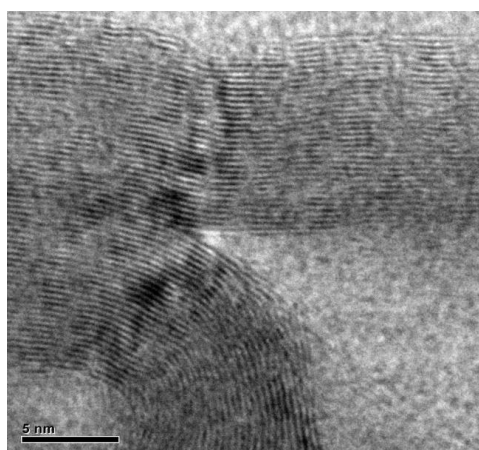


Fig 2. SEM Image of MWNT-COOH



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## Chemical analyses, values expressed on mass percentage

Carbon	Chlorine	Oxygen	Hydrogen	Sulfur	Cl	Trace metals	Ash
>C 75%	<1%	> 18 %	5%	<1%	1.5%	<0.03%	<0.1%

### APPLICATION AREA

IEN-T-MWNT-OH is powder and seeks unlimited application. Optimally, when MWNT-OH mixes in minute quantity to host matrix such as polymer, metals, it improves the Mechanical, Thermal & Electrical/Sensing properties without significant increase in the finished products cost.

This grade of MWNT has been successfully implemented and is recommended for following areas. Although the main users are: Academic research centers, Defense laboratories AND Industries covering-Composite /Structural materials, Paint & Coating, Energy, Biomedical etc.

Protective Structural Materials (as Nanofillers and Nanocomposites), Fuel (Cryogenic), Tanks, EM Shielding, Ballistic/fragment protection, Engine and turbine components, Protective Elastomer components, Reinforcement of polymers[Epoxyes].	Transparent Conductive Film, Organic Photovoltaic cells, Organic light emitting diodes, Sensors & Catalysts, Liquid Crystal Displays, Touch screens, Conductive films, Conductive plastic Transparent conductive coatings.
Energy Storage and Electric Devices, Solar energy Supercapacitors, Li-ion batteries, Integrated circuits, Electrochromic devices, Field-effect transistors, E-papers & Conductive inks MICR inks.	Anti-microbial, Chemical & Thermal Anti-bacterial paper, Air & water purification, Chemical and explosive detecting sensors, Microbial detection and diagnosis devices Biomaterials and Tissue Engineering.

## **DISCLAIMER**

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