



## Technical Data Sheet

# ACS Material Purified Multi-Walled Carbon Nanotubes (MWNTs, ~8 nm)

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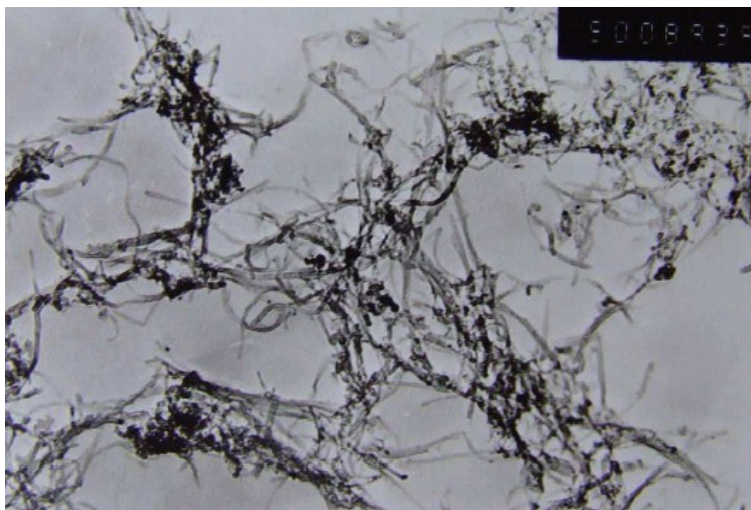
Revision: 110917

## 1. Preparation Method

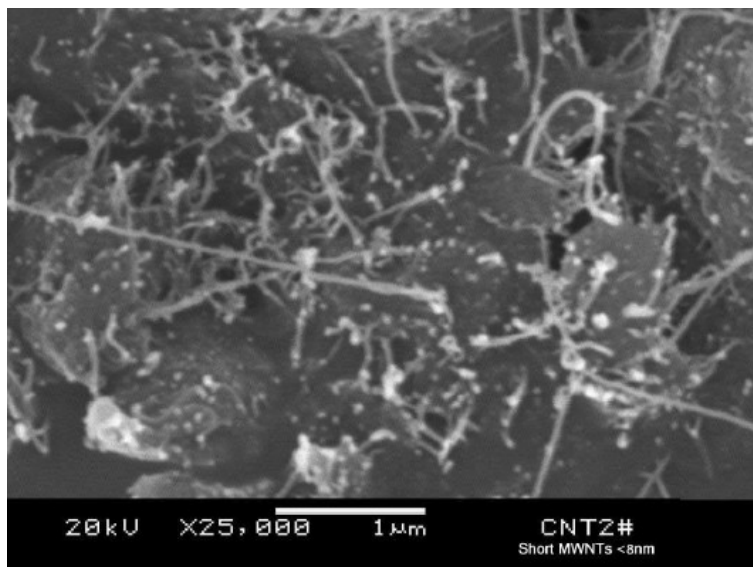
Chemical Vapor Deposition (CVD) Method

## 2. Characterizations

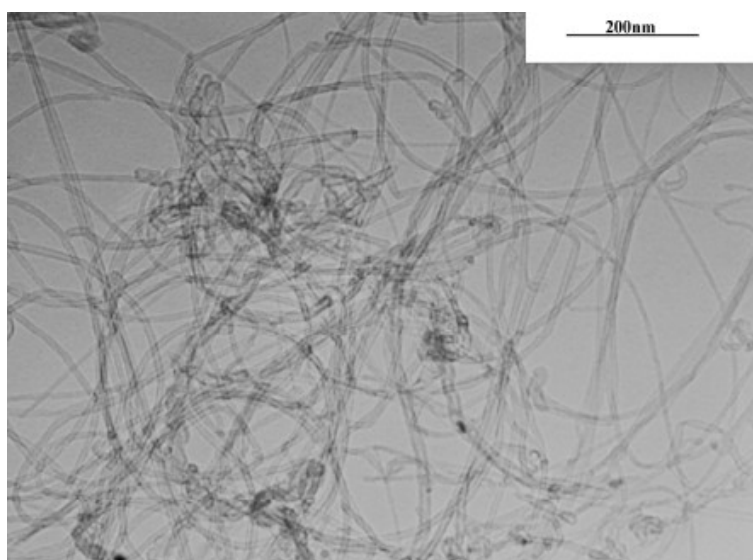
|                        |  |
|------------------------|--|
| <b>Purity:</b>         | >95%                                       |
| <b>Color:</b>          | Black                                      |
| <b>Outer Diameter:</b> | <8 nm                                      |
| <b>Inner Diameter:</b> | 2-5 nm                                     |
| <b>Length:</b>         | 0.5-2 $\mu\text{m}$<br>10-30 $\mu\text{m}$ |
| <b>SSA:</b>            | >500 $\text{m}^2/\text{g}$                 |
| <b>Tap Density:</b>    | 0.27 $\text{g}/\text{cm}^3$                |
| <b>True Density:</b>   | $\sim 2.1 \text{ g}/\text{cm}^3$           |
| <b>EC:</b>             | >100 S/cm                                  |



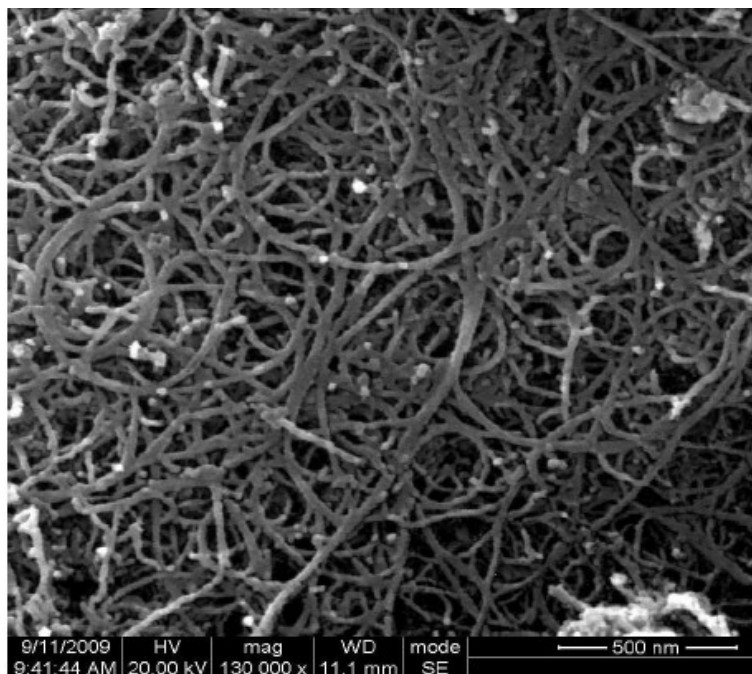
TEM Image of ACS Material Purified MWNTs (Length = 0.5-2  $\mu\text{m}$ )



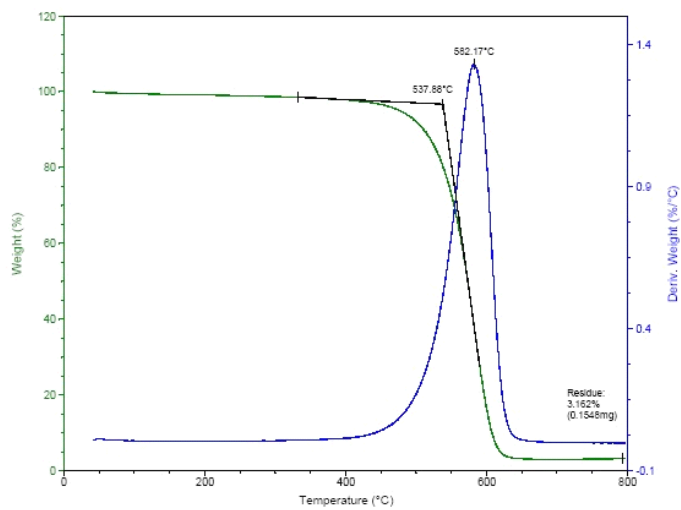
SEM Image of ACS Material Purified MWNTs (Length = 0.5-2 µm)



TEM Image of ACS Material Purified MWNTs (Length = 10-30 µm)



SEM Image of ACS Material Purified MWNTs (Length = 10-30  $\mu\text{m}$ )



TGA Analysis of ACS Material Purified MWNTs (Length = 0.5-2  $\mu\text{m}$ )

| Components | Contents (%) |
|------------|--------------|
| C          | 97.46        |
| Al         | 0.19         |
| Cl         | 1.02         |
| Co         | 1.09         |
| S          | 0.24         |

EDS Analysis of ACS Material Purified MWNTs (Length = 0.5-2  $\mu\text{m}$ )

### Certificate of Analysis

| Components | Contents (%) |
|------------|--------------|
| C          | 97.46        |
| Cl         | 1.02         |
| Co         | 1.09         |
| S          | 0.24         |

EDS Analysis of ACS Material Purified MWNTs (Length = 10-30  $\mu\text{m}$ )

### 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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