



## Aligned Multi-Walled Carbon Nanotubes, 30-100 $\mu\text{m}$ PRODUCT DATA SHEET

### Aligned Multi-Walled Carbon Nanotubes, 30-100 $\mu\text{m}$

#### Description

Multi-walled carbon nanotubes (MWCNTs) are materials made of multiple layers of carbon nanotubes stacked on top of each other, each layer can be viewed as a single-walled carbon nanotube. This unique structure gives multi-walled carbon nanotubes a range of excellent physical and chemical properties, including high strength, high toughness, good electrical conductivity and chemical stability. MWCNTs are widely used in many fields. In industries such as coatings, rubber, plastics, inks and batteries, multi-walled carbon nanotubes are often used as reinforcement materials due to their excellent mechanical properties and chemical stability. Aligned Multi-Walled Carbon Nanotubes gathered in bundles, and most of the nanotubes arrayed in same direction. The MWNTs in each bundle are closely compact and parallel to each other along the direction of the bundle axis. The bundle length often reaches 100 microns. The product is manufactured by acetylene catalytic decomposition over Ni-based catalyst at elevated temperature. The product has excellent electrical conductivity and good dispersibility. This product has potential applications as a composite enhancer or a high-strength nanostructure.

Abvigen offers high quality aligned multi-walled carbon nanotubes, 30-100  $\mu\text{m}$ . The product has high repeatability between batches, which can meet the needs of various customers for personalized materials such as research and development, testing and production.

For custom sizes, formulations or bulk quantities please contact our customer service department.

**Website:** [www.abvigen.com](http://www.abvigen.com) **Phone:** +1 929-202-3014 **Email:** [info@abvigenus.com](mailto:info@abvigenus.com)

#### Characteristics

**Type:** Aligned Multi-Walled Carbon Nanotubes, 10-20 nm

**Size:** 1 g

**Purity:** > 95 wt% carbon nanotubes (from TGA & TEM)

**Outside diameter:** 10-20 nm (from HRTEM, Raman)

**Inside diameter:** 5-10 nm (from HRTEM, Raman)

**Length:** 30-100  $\mu\text{m}$  (TEM)



**SSA:** > 165 m<sup>2</sup>/g (BET)

**Ash:** < 2 wt% (TGA)

**Color:** Black

**Electrical conductivity:** >1250 s/cm

**Tap density:** 0.07 g/cm<sup>3</sup>

**True density:** ~2.1 g/cm<sup>3</sup>

**Ignited temperature:** >661°C (TPO)

**Manufacturing method:** CVD

### **Advantages**

Excellent electrical conductivity

Good dispersibility

### **Applications**

(1) additives in polymers; (2) catalysts; (3) electron field emitters for cathode ray lighting elements; (4) flat panel display; (5) gas-discharge tubes in telecom networks; (6) electromagnetic-wave absorption and shielding; (7) energy conversion; (8) lithium-battery anodes; (9) hydrogen storage; (10) nanotube composites (by filling or coating); (11) nanoprobe for STM, AFM, and EFM tips; (12) nanolithography; (13) nanoelectrodes; (14) drug delivery; (15) sensors; (16) reinforcements in composites; (17) supercapacitor.

### **Ordering Information**

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