



## Flash-Ignited Multi-Walled Carbon Nanotubes PRODUCT DATA SHEET

### Flash-Ignited Multi-Walled Carbon Nanotubes

#### Description

Carbon nanotubes are simple substances composed of carbon atoms and can be regarded as hollow tubular structures formed by the curling of graphene. On the surface of carbon nanotubes, the carbon atoms are bonded to each other in the form of  $sp^2$  hybrid orbitals, which are arranged as hexagonal graphite layers. In theory, this regular hexagonal structure is perfectly evenly distributed over the entire surface of the carbon nanotubes. Topologically, the common structure and properties of graphene and carbon nanotubes are one of the important factors for their similarity. 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. Flash-Ignited Multi-Walled Carbon Nanotubes can be ignited by a household camera flash. It is composed of thin diameter multi-walled carbon nanotubes, amorphous carbon and some Fe nanoparticles. The Fe nanoparticles content is about 25 wt%. The product is manufactured by xylene pyrolysis using ferrocene as catalyst.

Abvigen offers high quality flash-ignited multi-walled carbon nanotubes. 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:** Flash-Ignited Multi-Walled Carbon Nanotubes

**Size:** 1 g

**Purity:** > 50 wt% carbon nanotubes (from TGA & TEM)

**Purity:** > 70 wt% carbon content (from TGA & TEM)

**Fe Content (100nm):** ~25 wt%



**Outside diameter:** 2-50 nm (from HRTEM, Raman)

**Length:** ~50  $\mu\text{m}$  (TEM)

**SSA:** > 300  $\text{m}^2/\text{g}$  (BET)

**Color:** Black

**Electrical conductivity:** >100  $\text{s}/\text{cm}$

**Tap density:** 0.2  $\text{g}/\text{cm}^3$

**True density:** ~2.1  $\text{g}/\text{cm}^3$

**Manufacturing method:** CVD

### 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

Website: [www.abvigen.com](http://www.abvigen.com)

Phone: +1 929-202-3014

Email: [info@abvigenus.com](mailto:info@abvigenus.com)