

TECHNICAL DATA SHEET

OH Functionalized Multi-Walled Carbon Nanotube Powders

Product codes: 030203 (ID 354, 8 nm) · 030202 · 030203 (ID 252, 10-20 nm) · 030204 · 030206 · 030207

Revision 2026-10

Description

OH (hydroxyl) functionalized multi-walled carbon nanotube (MWCNT) powders, made by CCVD, purified and functionalized with concentrated acid chemistry. Six outer-diameter grades from <8 nm to 50-80 nm, all >98 wt% purity with <1.5 wt% ash and >100 S/cm electrical conductivity. Hydroxyl content declines with diameter, from 5.5 wt% at <8 nm to 0.7 wt% at 50-80 nm. OH groups promote dispersion in aqueous solutions but do not make the powder water soluble; surfactant may still be needed.

Specifications

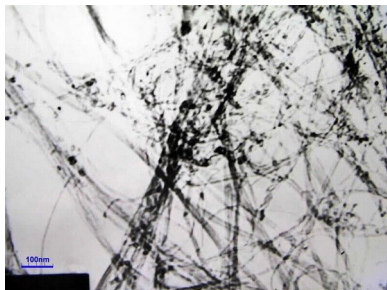
Property	8 nm	8-15 nm	10-20 nm	20-30 nm	30-50 nm	50 nm
SKU	030203 *	030202	030203 *	030204	030206	030207
Product ID	354	254	252	250	248	246
Outer diameter (nm)	<8	8-15	10-20	20-30	30-50	50-80
Inside diameter (nm)	2-5	3-5	3-5	5-10	5-10	5-10
Length (μm)	10-30	10-50	10-30	10-30	10-20	10-20
Purity (wt%)	>98	>98	>98	>98	>98	>98
Ash (wt%)	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
OH group content (wt%)	5.5	3.7	up to 2.0	1.6	1.0	0.7
Specific surface area (m ² /g)	500	233	233	110	60	60
Electrical conductivity (S/cm)	>100	>100	>100	>100	>100	>100
Bulk density (g/cm ³)	0.27	0.15	0.22	0.28	0.28	0.18
True density (g/cm ³)	~2.1	~2.1	~2.1	~2.1	~2.1	~2.1
Characterization	OH content 5.5 to 0.7 wt% by grade (product pages); ash (residue) <1.5 wt%; TEM micrographs on product pages (below). Raman IG/ID and TGA onset/residue: not published.					

OH group content is as stated on each product page (basis stated there as a percent; shown here as wt%). * SKU 030203 is listed on two product IDs (354 and 252); use the product ID to identify the grade. Appearance and color are not published.

Grade Selection

- **<8 nm (ID 354):** highest OH content (5.5 wt%) and surface area (500 m²/g).
- **8-15 nm (030202) and 10-20 nm (030203, ID 252):** 3.7 wt% and up to 2.0 wt% OH at 233 m²/g; 8-15 nm tubes run 10-50 μm.
- **20-30 nm (030204):** 1.6 wt% OH, 110 m²/g.
- **30-50 nm (030206) and 50-80 nm (030207):** 1.0 and 0.7 wt% OH at 60 m²/g.
- **OH or COOH:** select OH or COOH groups when dispersing in aqueous solvents or mixtures. Short OH and OH graphitized grades are in their own TDS documents.

Representative Data



TEM, <8 nm grade (ID 354). Scale bar 100 nm.



TEM, 10-20 nm grade (030203, ID 252). Scale bar 100 nm.



TEM, 50-80 nm grade (030207, ID 246). Scale bar 100 nm.

Micrographs are the images published on the cheaptubes.com product pages; instrument and imaging conditions are not stated. The same micrographs are used on the pristine, COOH and OH product pages, so they show tube morphology and do not indicate surface functionality.

Raman (IG/ID) and TGA (onset, residue) data are not published on the product pages for this family and are not shown here. Application loading data are not published; request application notes at sales@cheaptubes.com.

Storage and Handling

Store sealed, dry, at room temperature. Use local exhaust ventilation and respiratory protection when handling dry powder; see SDS. Disperse with surfactant (PVP, SDS or SDBS for aqueous systems) and high-shear mixing or sonication; oxygen-bearing groups aid wetting in water but do not make the powder water soluble.

Documentation

Values are representative of typical production and do not constitute a lot-specific guarantee. A lot-specific Certificate of Analysis (CoA) ships with each order.

Safety Data Sheet available at cheaptubes.com/nanomaterial-msds-safety-sheets.

Application results depend on formulation, equipment and process conditions; confirm with your own trials. Specifications reflect the product pages at cheaptubes.com as of October 2026. Entries marked [not specified] are not published for that grade; contact sales@cheaptubes.com.