

TECHNICAL DATA SHEET

20 nm MWCNT Powders, >99 wt% (Base, COOH and NH₂)

Product codes: 030111 (base) · 030113 (COOH) · 030114 (NH₂)

Revision 2026-10

Description

Three 20 nm class multi-walled carbon nanotube (MWCNT) powders listed at >99 wt% purity with 0 wt% ash: a base grade, a COOH functionalized grade and an NH₂ functionalized grade. Each is produced by CCVD, purified and functionalized with concentrated acid chemistry, giving control over the type and amount of surface functionality and an exfoliated powder that is easier to disperse in the host matrix. Supplied as dry powder in nano-suitable airtight containers.

Specifications

Property	Base 20 nm	COOH 20 nm	NH ₂ 20 nm
SKU	030111	030113	030114
Product ID	165	200	184
Outer diameter (nm)	<20	<20	<20
Inside diameter (nm)	4	4	4
Length (μm)	1-12	1-15	1-12
Purity (wt%)	>99	>99	>99
Ash (wt%)	0	0	0
Specific surface area (m ² /g)	~250	[not specified]	[not specified]
Primary functionality	None (base)	COOH	NH ₂ (amine)
Other functionalities	[not specified]	COH, C=O, other oxygen groups	N-H, O=C-N-H ₂ , C≡N
Source material	CCVD MWCNTs	CCVD MWCNTs	CCVD MWCNTs
Form supplied	Dry powder	Dry powder	Dry powder
Packaging	Nano-suitable airtight container	Nano-suitable airtight container	Nano-suitable airtight container
Electrical conductivity (S/cm)	[not specified]	[not specified]	[not specified]
Characterization	Ash 0 wt%; SSA ~250 m ² /g (base grade only). No usable micrographs, Raman or TGA data are published for this family.		

Functionality content (wt%) is not published for these grades. Method details beyond the acid chemistry note are not published.

Grade Selection

- **Base (030111):** the only grade in the family with a published surface area (~250 m²/g); for applications that want the exfoliated, easily dispersed powder without a targeted surface group.
- **COOH (030113):** oxygen groups promote dispersion in aqueous solutions (not water soluble; surfactant may be needed). COOH is useful in paints, polymers, epoxies and inks.
- **NH₂ (030114):** the amino termination allows further chemistry and covalent bonding to polymers and biological systems such as DNA and carbohydrates.

Representative Data

No usable micrographs are available for this family: the images on the base, COOH and NH₂ product pages carry a third-party watermark and are not reproduced here. Raman (IG/ID) and TGA (onset, residue) data are not published. Request application notes and characterization at sales@cheaptubes.com.

Storage and Handling

Supplied as dry powder in a nano-suitable airtight container. Store sealed, dry, at room temperature. Use local exhaust ventilation and respiratory protection when handling dry powder; see SDS.

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.