

# NC7000™

Multiwall carbon nanotubes

## 1. Identification of the product and the company

Trade Name:	NC7000™
Type of product:	Multi-walled carbon nanotubes (MWCNTs) Short tangled MWCNTs obtained by catalytic chemical vapour deposition- Synthetic graphite in tubular shape
General use:	additive
REACH Registration N°:	01-2119879048-26-0001.
Belgium nanoregistration N°:	BE-000200.
Company:	Nanocyl S.A. Rue de l'Essor, 4 B-5060 Sambreville Belgium
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## 2. Hazards identification

**Hazards classification:** not classified

### Label elements including precautionary statements

- \* Pictograms: not applicable
- \* Signal words: not applicable
- \* Hazard statements: not applicable
- \* Precautionary statements:

<b>P233</b>	Keep container tightly closed.
<b>P260</b>	Do not breathe dust/fume/gas/mist/vapours/spray.
<b>P273</b>	Avoid release to the environment.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.

### Other hazards which do not result in classification:

Explosive hazard: dust may form explosive mixture with air.

### 3. Composition/information on ingredients

Components	CAS/EC N°	% (wt.)	Classification
<i>Short tangled MWCNTs</i>	-/936-414-1	90 %	/
<i>Others</i>	Proprietary	10 %	/

### 4. First aid measures

After skin contact:	Remove contaminated clothing immediately. Wash contacted skin areas with plenty of cold to lukewarm water and soap. If irritation develops, consult a physician.
Eye contact:	Hold the eyes open and rinse with water for a sufficiently long period of time (at least 10 minutes). Obtain medical attention if pain, blurred vision, swelling, burning or redness persist.
After inhalation:	If high concentration of dust is inhaled, move the person into fresh air, keep warm and allow to rest. If breathing is difficult, oxygen may be administered and medical attention should be obtained.
Ingestion:	Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Obtain medical attention.

### 5. Fire-fighting measures

Suitable extinguishing media:	Water fog, Foam, Carbon Dioxide, Dry Chemical.
Unsuitable extinguishing media:	High volume water jet.
Specific hazards:	/
Protective equipments:	Wear self-contained breathing apparatus. Wear suitable protective clothing.
Combustion products:	May form toxic fumes, carbon monoxide, carbon dioxide, metal oxides.

### 6. Accidental release measures

Personal precautions:	Equip cleanup crew with proper protection (see chapter 8). Ensure adequate ventilation/exhaust extraction. Prevent formation of explosive dust-air mixture.
Environmental precautions:	Collect for disposal. Avoid discharge to natural waters, sewers and biological waste water treatment plants.

Spill procedures: Collect the spill material using a vacuum with Hepa filter or damp sweep. Avoid formation of dust. Use sealable dedicated containers.

## 7. Handling and storage

Handling: Good ventilation of the workplace is required. Avoid formation of dust. Contact with skin and eyes and inhalation of dust must be avoided under all circumstances. Handle in accordance with good industrial hygiene and safety procedures. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities.

Storage: Keep only in the original closed container in a dedicated place. Keep containers in a cool, dry place with adequate ventilation. Keep away from open flames and high temperature.

## 8. Exposure controls / Personal protection

### Components with workplace parameters:

No official Occupational Exposure Limit has yet been established. Obtain special instructions before use.

Remark: DNEL (Derived No Effect Level)-Multi-walled carbon nanotubes – long term exposure: 0.05 mg/m<sup>3</sup>

### Personal protective equipment:

Hand protection: Protecting gloves: Suitable materials for safety gloves/ EN 374-3: Nitrile rubber (NBR; > 0.35 mm). Unsuitable material: do not wear neoprene gloves, as neoprene absorbs nanoparticles.

Skin and body protection: Wear gloves and other clothing as required to avoid contact.

Respiratory protection: Wear suitable respiratory equipment with high efficiency dust cartridge a P3 filter when directly exposed or handling the powder.

Eye protection: Chemical goggles or safety glasses.

In case of contact, ensure prompt removal from eyes, skin and clothing. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and leaving work. Facilities storing or utilizing this material should be equipped with an eyewash facility. Change contaminated clothing immediately.

## 9. Physical and chemical properties

Form and Color: solid black powder  
Odor: odorless  
Melting point/range: not applicable  
Boiling point/range: not applicable  
Vapor pressure: not applicable

Bulk density:	~ 60 g/L
Solubility in water:	insoluble
Viscosity:	not applicable
pH:	not applicable
Explosibility class:	ST1 (VDI 2263)
Explosive properties:	Kst=42 bar.m/s (VDI 2263)
Smouldering temperature:	> 400°C (EN 50281-2-1)
Minimum Ignition Energy:	> 10 J (VDI 2263)
Lower Explosion Limit:	180 g/m <sup>3</sup> (EN 14034-3)

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## 10. Stability and reactivity

Stability:	Stable under normal handling and storage conditions.
Materials to avoid:	Strong oxidizing and reducing agents.
Conditions to avoid:	Exposure to moisture. Avoid dust formation.
Hazardous decomposition:	No hazardous decomposition products known at room temperature (see also section 5).

## 11. Toxicological information

Acute toxicity, oral:	LD50 rat > 5,000 mg/kg
Acute toxicity, dermal:	LD50 rat > 2,000 mg/kg
Genotoxicity:	Not mutagenic (Ames test).
Skin irritation/corrosion:	No irritation and no corrosion.
Sub-Chronic toxicity:	* Inhalation, repeated dose, 5 days, rat, LOAEC: 2 mg/m <sup>3</sup> Target organ: lung (pulmonary inflammation) * Inhalation, repeated dose, 90 days, rat, LOAEC: 0.1 mg/m <sup>3</sup> Target organ: lung (multifocal granulomatous inflammation) * Oral, repeated dose, 28 days, rat, NOAEL: 0.5 mg/kg
Carcinogenicity:	No carcinogenic response. (2-year bioassay in the peritoneal cavity of the rat)
Possible hazards:	May be harmful if inhaled

## 12. Ecological information

Biodegradability:	No biodegradation expected
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- Short term toxicity:
- \* Fish, Danio rerio, 14 days, EC50 > 100 mg/l
  - \* Invertebrate, Daphnia magna, freshwater, 48h, EC50 > 100 mg/l
  - \* Algae, Desmodesmus subspicatus, freshwater, 72h, EC50: 134 mg/l
- Long term toxicity:
- \* Fish, Danio rerio, semi static, EC10: 100 mg/l
  - \* Invertebrate, Daphnia magna, semi static, NOEC > 25 mg/l
- Environmental precautions: Do not allow to enter ground soil, sewage, drains.

### 13. Disposal considerations

- Product: Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, use the appropriate code according to the European Waste Catalogue (EWC).
- Container: Empty containers can be landfilled after have been emptied as thoroughly as possible, when in compliance with the Environmental Protection Regulation and with local, state and federal regulations.

### 14. Transport information

According to national and international guidelines, which regulate the road-, rail-, air-, and sea transport, this product is classified as not dangerous.

### 15. Regulation information

#### Labelling according to EEC Directive (CLP/GHS)

- Symbol(s) : /
- H Phrase(s) : /
- P Phrase(s) :
- P233** Keep container tightly closed.
  - P260** Do not breathe dust/fume/gas/mist/vapours/spray.
  - P273** Avoid release to the environment.
  - P280** Wear protective gloves/protective clothing/eye protection/face protection.

Specific regulatory dossiers were established based on data generated on the above mentioned product. For all dossiers no CAS number was provided to the authorities and this product was registered under the chemical name "short tangled multi-walled carbon nanotubes obtained by catalytic chemical vapour deposition". In Europe, the material is REACH registered (01-2119879048-26-0001). In the USA, Nanocyl S.A. has filled a pre-manufactured notice (PMN). In Canada, since a component of this product is not listed on the Canadian Domestic Substance List (DSL) or non-Domestic Substances List (NDSL), schedule 5 of the New Substances Notification Regulations (Chemicals and Polymers) of the Canadian Environmental Protection Act, 1999, have been granted.

This material is listed on the following inventories under specialty graphite (CAS 7782-42-5): Japanese Existing and New Chemical Substances (ENCS), Korean Existing Chemicals List (ECL), Philippines Inventory of Chemicals and Chemical Substances (PICCS), Swiss Giftliste 1 Inventory of Notified New Substances, Chinese Chemical Inventory of Existing Chemical Substance (IECS) and Taiwan Existing chemical Substance Nomination (ECN).

## 16. Other information

The contents and format of this MSDS are in accordance with EEC Regulation REACH 1907/2006 art.31 and EEC Regulation 1272/2008 (CLP/GHS).

Vertical lines in the left hand margin indicate an amendment from the previous version.

## Disclaimer:

Nanocyl S.A. provides the information contained herein in good faith and makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material.