

NANOGRAFI NANOTECHNOLOGY

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifiers

Product Form	Substance
Trade Name	(-COOH) Functionalized Multi Walled Carbon Nanotubes, >96%, OD: 8-18 nm
Product Number	NG01MW0303
CAS Number	308068-56-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	Research
------------------------------	----------

1.3 Details of the supplier of safety data sheet

Company	Nanografi Nanotechnology
Address	ODTÜ Teknokent İkizler Binası B-1/H ODTÜ Teknokent 06531- ANKARA
Phone	+90 312 285 85 09
Fax	+90 312 210 13 09

1.4 Emergency Telephone Number

Emergency Telephone Number	+90 312 285 85 09
----------------------------	-------------------

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Eye irritation (Category 2A), H319

Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

NANOGRAFI NANOTECHNOLOGY

2.2 Label Elements

Hazard Pictograms



Signal Word

Warning

Hazard Statements

H319 Serious eye irritation.

H335 May cause respiratory irritation.

Precautionary Statements

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other Hazards

None.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

NANOGRAFI NANOTECHNOLOGY

Synonyms	MWCNT, MWNT, Multi-Walled Carbon Nanotubes
CAS Number	308068-56-6

3.2 Mixtures

Not applicable.

SECTION 4 FIRST AID MEASURES**4.1 Description of first aid measures**

First-aid measures after inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	Wash with plenty of soap and water. Remove/take off immediately all contaminated clothing. Wash contaminated clothing before reuse.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
First-aid measures after ingestion	Get medical attention if gastrointestinal symptoms develop.

4.2 Most important symptoms and effects, including acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5 FIREFIGHTING MEASURES**5.1 Extinguishing media**

NANOGRAFI NANOTECHNOLOGY

Suitable Extinguishing Media	Powder, alcohol-resistant foam, water spray, carbon dioxide.
Unsuitable Extinguishing Media	None known.

5.2 Special hazards arising from the substance or mixture

Hazardous Decomposition Products	Carbon dioxide. Carbon monoxide.
----------------------------------	----------------------------------

5.3 Advice for firefighters

In case of fire wear self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective Equipment	Wear suitable protective clothing.
Emergency Procedures	Avoid formation of dust. Avoid contact with skin, eyes and clothes. Ensure adequate ventilation. Evacuate area.

6.2.2 For emergency responders

Protective Equipment	Wear suitable protective clothing, gloves and eye/face protection.
Emergency Procedures	Provide adequate ventilation. Evacuate area. Avoid generation of dust. Avoid contact with skin and eyes.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6.3 Methods and material for containment and cleaning up

For Containment	Sweep up, shovel or vacuum. Avoid generation of dust.
-----------------	---

NANOGRAFI NANOTECHNOLOGY

Methods for cleaning up

Use approved industrial vacuum cleaner for removal.
Avoid generation of dust. Collect in closed containers for disposal.

6.4 Reference to other sections

For further information refer to section 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for Safe Handling

Avoid contact with skin, eyes and clothes. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures

Do not eat, drink or smoke when using this product.
Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Storage Conditions

Store in dry, cool, well-ventilated area. Keep container tightly closed.

Technical Measures

Provide adequate ventilation to minimize dust concentrations.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

NANOGRAFI NANOTECHNOLOGY

Appropriate Engineering Controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Hand Protection	Wear suitable gloves tested to EN 374-3 (>60 minutes).
Eye Protection	Safety glasses with face shield. DIN EN 14605
Skin and Body Protection	TYPE 5 Category of protection with wrist covers or cuffs.
Respiratory Protection	Dust production: dust mask with filter type P3/FFP3 according to EN 149.
Environmental Exposure Controls	Avoid release to the environment.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State	Solid
Color	Black
Odor	Odorless
Odor Threshold	No data available
pH	No data available
Relative Evaporation Rate	No data available
Melting Point	3652-3697 °C
Freezing Point	No data available
Boiling Point	No data available
Flash Point	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Flammability (solid, gas)	No data available
Vapor Pressure	No data available
Relative vapor density at 20°C	No data available
Relative Density	No data available
Solubility in H ₂ O	insoluble
Log Pow	No data available

NANOGRAFI NANOTECHNOLOGY

Viscosity, Kinematic	No data available
Viscosity, Dynamic	No data available
Explosive Properties	No data available
Oxidizing Properties	No data available
Explosive Properties	No data available

9.2 Other information

No other information available.

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable at normal conditions.

10.3 Possibility of hazardous reactions

None known.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

Thermal combustion may release carbon monoxide and dioxide.

SECTION 11 TOXICOLOGICAL INFORMATION

NANOGRAFI NANOTECHNOLOGY

11.1 Information on toxicological effects

Acute Toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Respiratory or Skin Sensitization	No data available
Germ Cell Mutagenicity	No data available
Carcinogenity	No data available
Reproductive Toxicity	No data available
STOT-Single Exposure	Inhalation: may cause respiratory irritation.
STOT-Repeated Exposure	No data available
Aspiration Hazard	No data available
Other Information	RTECS: Not available To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology-general	No data available.
Acute aquatic toxicity	No data available.
Chronic aquatic toxicity	No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment



NANOGRAFI NANOTECHNOLOGY

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste treatment methods

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

SECTION 14 TRANSPORT INFORMATION

Safe to carry by any means of transportation. Not restricted any mode of transportation.

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act.

California Prop. 65 Components

NANOGRAFI NANOTECHNOLOGY

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16 OTHER INFORMATION

16.1 Abbreviation of acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
IATA	International Air Transport Association
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PBT	Persistent Bioaccumulative Toxic
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
vPvB	Very Persistent and Very Bioaccumulative

16.2 Full text of H-statements

Eye Irrit.	Eye irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation
STOT SE	Specific target organ toxicity - single exposure

16.3 Hazard classification

Health	1
Flammability	0
Reactivity	0
Special Hazards	



NANOGRAFI NANOTECHNOLOGY

Disclaimer

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.