

NANOGRAFI NANOTECHNOLOGY

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

1.1 Product identifiers

Product Form	Substance
Trade Name	Multi Walled Carbon Nanotubes Water Dispersion, 4 wt%, Purity: > 96%, OD: 3-13 nm, Length: 45 µm
Product Number	NG02CN0101
CAS Number	CNT CAS#: 308068-56-6 Water CAS#: 7732-18-5

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

Use of the substance/mixture	Research
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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
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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

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

2.2 Label Elements

Hazard Pictograms

Signal Word

None

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.

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SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

Product	CAS Number	Concentration	Classification
CNT	308068-56-6	%4	Eye Irrit. 2A; STOT SE 3; H319, H335
Water	7732-18-5	%96	

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. Consult a physician.
First-aid measures after eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
First-aid measures after ingestion	Rinse mouth with water. Get medical attention.

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.

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SECTION 5 FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media Dry chemical, 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 dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

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.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

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For Containment	Sweep up, shovel or vacuum. Avoid generation of dust.
Methods for cleaning up	Sweep up and shovel 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 and eyes. 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.

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8.2 Exposure controls

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	For any handling steps where the substance is in particulate form or in a suspension with pure water where the substance is not solubilized, the gloves must be comprised of material that successfully passes ASTM F-1671. For any handling steps where the substance is part of a carrier liquid, other than the aqueous suspension noted in the previous paragraph, gloves must be comprised of material that successfully passes ASTM F-739 (continuous liquid contact method). Gloves must be changed before they show degradation and before the designated breakthrough time for the carrier liquid (as determined by the ASTM F-739 testing or by the manufacturer). Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye Protection	Safety glasses with face shield. DIN EN 14605
Skin and Body Protection	Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection	The EPA mandates the use of full face respirators with minimum N100 grade cartridges if there is any risk of exposure to the dust. For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type

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ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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	Liquid
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
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

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9.2 Other information

No other information available.

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

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

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

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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

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

12.6 Other adverse effects

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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 by 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

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

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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
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

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	

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.