

SECTION 1: Identification of the hazardous chemical or mixture and of the supplier or manufacturer

1.1. GHS product identifier

Product form : Substance
 Generic name : Single wall carbon nanotubes
 Product code : 01RW02, 01RW03

1.2. Other means of identification

Formula : C

1.3. Recommended use of the chemical and restrictions on use

Recommended use : The additive used for producing lithium-ion batteries, rubbers, transparent conductive coatings, metal composites and ceramic materials. Used as reinforcing material in plastics. Formulation; Industrial use.

1.4. Supplier's details

Supplier

USA:
 OCSiAI LLC
 950 Taylor Station
 Road
 Suite W
 Gahanna, OH 43230
 T +1 415 906 5271
 09.00-17.00 GMT-4
 usa@ocsial.com

1.5. Emergency phone number

Americas : +1 202 464 2554 (English)
 Americas : +1 215 207 0061 (English, Spanish, Portuguese)
 Mexico : +52 55 5004 8763 (English, Spanish)
 Brazil : +55 11 3197 5891 (Portuguese, English)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS MX classification

Serious eye damage/eye irritation, Category 2 H319 Causes serious eye irritation.
 Full text of H-statements: see section 16

2.2. Label elements

GHS MX labelling

Hazard pictograms (GHS MX) : 

Signal word (GHS MX) : Warning
 Hazard statements (GHS MX) : H319 - Causes serious eye irritation.
 Precautionary statements (GHS MX) : P264 - Wash hands thoroughly after handling.

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P280 - Wear eye protection, protective clothing, protective gloves.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : None under normal conditions.
Adverse physicochemical, human health and environmental effects : To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Single wall carbon nanotubes
Trade name : TUBALL
Chemical name : Single wall carbon nanotubes

Name	Product identifier	%	GHS MX classification
Single wall carbon nanotubes* (Main constituent)	CAS-No.: 7440-44-0 (Representative only)	80 – 100	Eye Irrit. 2, H319

Full text of H- and EUH-statements: see section 16

Comments : * Single wall carbon nanotubes TUBALL™

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of necessary first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get medical attention.
First-aid measures after skin contact : Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Wash with plenty of soap and water. Wash skin with plenty of water.
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 : Rinse mouth out with water. Do not induce vomiting. Get medical attention.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after eye contact : Eye irritation.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Powder, Alcohol-resistant foam, Water spray, Carbon dioxide (CO₂).
Unsuitable extinguishing media : Do not use water jet.

5.2. Specific hazards arising from the chemical

Fire hazard : None known.

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According to the NOM-018-STPS-2015

Explosion hazard : None known.
Hazardous decomposition products in case of fire : Carbon monoxide. Carbon dioxide.

5.3. Special protective actions for fire-fighters

Protection during firefighting : Full face mask. Positive pressure self-contained breathing apparatus (SCBA). Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Measures to be taken in case of accidental spillage or accidental leakage

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions, Protective Equipment and Emergency Procedures : Wear suitable protective clothing. Avoid formation of dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.
Prevention Measures for Secondary Accidents : Clean up immediately. Use approved industrial vacuum cleaner for removal.

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing.
Emergency procedures : Ventilate spillage area. Avoid formation of dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Wear suitable protective clothing, gloves and eye/face protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Provide adequate ventilation. Evacuate area. Avoid formation of dust. Avoid contact with skin and eyes.

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter into surface water or drains. Collect contaminated extinguishing water separately and must not enter the sewage system.

6.3. Methods and material for containment and cleaning up

For containment : Sweep up, shovel or vacuum. Avoid formation of dust.
Methods for cleaning up : Mechanically recover the product. Use approved industrial vacuum cleaner for removal. Avoid generation and spreading of dust. Collect in closed container and remove to a safe place for disposal by burning.
Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : None known.
Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. 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. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide adequate ventilation to minimize dust concentrations.
Storage conditions : Store in dry, well-ventilated area. Store at ambient temperature. Keep container tightly closed. Store in a well-ventilated place. Keep cool.

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According to the NOM-018-STPS-2015

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation. Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Personal protective equipment : 2 pairs of gloves. Safety glasses. Protective clothing (non-woven fabric).
Avoid protective clothing made from cotton fabrics.

Hand protection : Chemically resistant protective gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves, Reusable gloves	Nitrile rubber (NBR)	2 (> 30 minutes)	≥ 0.11 mm		

Eye protection : Safety glasses with side shields

Skin and body protection : Protective clothing (with elasticated cuffs and closed neck).

Respiratory protection : Wear authorized respirators when there is risk of exposure:
Type (I) NIOSH-certified air-purifying tight fitting full facepiece respirator equipped with N100, R-100, or P-100 filter/cartridge.
Type (II) NIOSH-certified powered air-purifying particulate respirator equipped with a tight-fitting full facepiece and with an assigned protection factor (APF) of minimum 50

Personal protective equipment symbol(s)



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Powder. Nanomaterial.
Colour : Black
Odour : Odourless
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : > 400 °C @ 101325 Pa
Freezing point : Not applicable
Boiling point : No data available
Flash point : Not applicable
Flammability (solid, gas) : Non flammable.
Auto-ignition temperature : > 400 °C @ 101325 Pa
Decomposition temperature : No data available
Vapour pressure : No data available
Relative vapour density at 20°C : No data available
Relative density : 1.877 g/cm³ at 20 °C
Density : 1.78 g/cm³ Type: 'density' Temp.: 25 °C
Solubility : Insoluble in: Water, Organic solvents.
Water: 1 mg/l at 20 °C

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According to the NOM-018-STPS-2015

Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive properties	: Not explosive.
Oxidising properties	: Non oxidizing.
Explosive limits	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under 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 (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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NOAEL (animal/female, F0/P)	no adverse effects seen at highest dose tested > 1000 mg/kg bw/day - OECD 422
NOAEL (animal, F1)	> 1000 mg/kg bw/day - for adverse effects on prenatal development (conceptus to birth) - OECD 422
NOAEL (animal, F1)	> 1000 mg/kg bw/day - for adverse effects on postnatal development (pup) - OECD 422
STOT-single exposure	: Not classified

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According to the NOM-018-STPS-2015

STOT-repeated exposure : Not classified

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NOAEL (oral, rat, 90 days)	no adverse effects seen at highest dose tested > 1000 mg/kg bodyweight/day - OECD 422
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Aspiration hazard : Not classified

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Viscosity, kinematic	Not applicable
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Not rapidly degradable :

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Regional legislation (waste) : Dispose of this material and its container at hazardous or special waste collection point.

Additional information : Clean up even minor leaks or spills if possible without unnecessary risk.

Sewage disposal recommendations : Prevent entry to sewers and public waters.

Waste treatment methods : Disposal through controlled incineration or authorised waste dump. Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with NOM / UN RTDG / IMDG / IATA

NOM	UN RTDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			

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According to the NOM-018-STPS-2015

NOM	UN RTDG	IMDG	IATA
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

14.6. Special precautions for user

NOM

No data available

UN RTDG

No data available

IMDG

No data available

IATA

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

No data available

15.2. International regulations

Single wall carbon nanotubes :

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

SECTION 16: Other information including those related to the preparation and updating of safety data sheets

Issue date : 17/05/2023

Full text of H-statements

H319	Causes serious eye irritation.
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Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
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According to the NOM-018-STPS-2015

Abbreviations and acronyms	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
NOAEL	No-Observed Adverse Effect Level
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

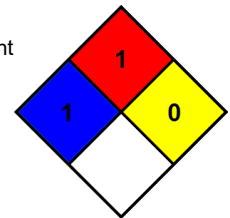
NFPA (National Fire Protection Association)

NFPA fire hazard

NFPA health hazard

NFPA reactivity

- : 1 - Materials that must be preheated before ignition can occur.
- : 1 - Materials that, under emergency conditions, can cause significant irritation.
- : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

- Health : 1 Slight Hazard - Irritation or minor reversible injury possible
- Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
- Personal protection : E - Safety glasses, Gloves, Dust respirator

Revision

- : All recent revision(s) are noted by a bold triangle pointed to right '▶'.

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. It is the user's responsibility to take mentioned precaution measures and ensure that this information is complete and sufficient for the use of this product.

Safety Data Sheet (SDS), Mexico

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.