

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier ►

Product form	: Substance
Trade name	: TUBALL™
Product code	: 01RW02, 01RW03 Grades are part of one set of nanoform
IUPAC name	: Single wall carbon nanotubes
EC-No.	: 943-098-9
CAS-No.	: Not assigned for EU-REACH
REACH registration No	: 01-2120130006-75-0000

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

#### 1.2.1. Relevant identified uses

Use of the substance/mixture	: 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.
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#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Europe:	USA:	Asia:	China:	India:
OCSiAl Europe S.a.r.l. L-3364, Leudelange, 1, rue de la Poudrerie, Grand Duchy of Luxembourg	OCSiAl LLC 500 S Front St., Suite 860, Columbus, OH 43215, USA	OCSiAl Asia Pacific Co., Ltd. Office 208, Pilot Plant Bldg., Incheon Technopark 12 Gaetbeol-ro, Yeonsu-gu, Incheon, 406-840 Republic of Korea	OCSiAl Hong Kong Limited No. 1102, 11/F, Lippo Sun Plaza, 28 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong	OCSiAl PRIVATE LIMITED A504 Universal BusinessPark, Ansa Industrial Estate, Chandivali, Andheri (E) Mumbai 400072
T +352 27 99 03 73 09.00-17.00 GMT+2 europe@ocsial.com	T +1 415 906 5271 09.00-17.00 GMT-4 usa@ocsial.com	T +82 32 260 0407 09.00-17.00 GMT+9 asiapacific@ocsial.com	T +852 3575 3943 09:00-17:00; GMT+8 china@ocsial.com	T +91 22 4120 8615 09:00-17:00; GMT+5.5 india@ocsial.com

### 1.4. Emergency telephone number (24h/day) - for emergency only involving spill, leak, fire, exposure or accident call ►

<b>EMEA</b>	: +44 1865 407333 (English) (Carechem 24)
<b>East/South East Asia</b>	: +65 3158 1074 (English, Hindi, Japanese, Korean, Malay, Mandarin) (Carechem 24)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

#### Adverse physicochemical, human health and environmental effects

Causes serious eye irritation.

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H319 - Causes serious eye irritation.

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Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling.  
P280 - Wear eye protection, protective gloves, protective clothing, respiratory protection.  
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

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

## SECTION 3: Composition/information on ingredients

### 3.1. Substances ▶

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Single wall carbon nanotubes*	(CAS-No.) Not assigned for EU-REACH (EC-No.) 943-098-9 (REACH-No.) 01-2120130006-75-0000	80 – 100	Eye Irrit. 2, H319

Full text of H-statements: see section 16

\* Single wall carbon nanotubes TUBALL™

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of 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.  
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 and effects, both acute and delayed

Symptoms/effects after eye contact : Eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Powder, Alcohol-resistant foam, Water spray, Carbon dioxide (CO<sub>2</sub>).  
Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

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

### 5.3. Advice for firefighters

Protection during firefighting : Full face mask. Positive pressure self-contained breathing apparatus (SCBA).

## 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 clothing. Ensure adequate ventilation. Evacuate area.

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### 6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.  
Emergency procedures : Provide adequate ventilation. Evacuate area. Avoid formation of dust. Avoid contact with skin and eyes.

### 6.2. Environmental precautions

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 : 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.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : None known.  
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

- 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.  
Maximum storage period : 6 years

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters ►

TUBALL™	
<b>DNEL/DMEL (Workers)</b>	
Acute - systemic effects, dermal	no hazard identified
Acute - systemic effects, inhalation	low hazard (no threshold derived)
Acute - local effects, dermal	no hazard identified
Acute - local effects, inhalation	low hazard (no threshold derived)
Long-term - systemic effects, dermal	no hazard identified
Long-term - local effects, dermal	no hazard identified
Long-term - systemic effects, inhalation	low hazard (no threshold derived)
Long-term - local effects, inhalation	low hazard (no threshold derived)
<b>DNEL/DMEL (General population)</b>	
Acute - systemic effects, dermal	no hazard identified
Acute - systemic effects, inhalation	low hazard (no threshold derived)
Acute - systemic effects, oral	no hazard identified
Acute - local effects, dermal	no hazard identified
Acute - local effects, inhalation	no hazard identified
Long-term - systemic effects, oral	no hazard identified
Long-term - systemic effects, inhalation	low hazard (no threshold derived)
Long-term - systemic effects, dermal	no hazard identified
Long-term - local effects, dermal	no hazard identified
Long-term - local effects, inhalation	no hazard identified

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<b>PNEC (Water)</b>	
PNEC aqua (freshwater)	no hazard identified
PNEC aqua (marine water)	no hazard identified
<b>PNEC (Sediment)</b>	
PNEC sediment (freshwater)	no hazard identified
PNEC sediment (marine water)	no hazard identified
<b>PNEC (Soil)</b>	
PNEC soil	no hazard identified
<b>PNEC (Oral)</b>	
PNEC oral (secondary poisoning)	no potential to cause toxic effects if accumulated (in higher organisms) via the food chain
<b>PNEC (STP)</b>	
PNEC sewage treatment plant	no data available: testing technically not feasible

### 8.2. Exposure controls

#### Personal protective equipment:

Gloves. Safety glasses. Protective clothing. Dust production: dust mask with filter type P3.

#### Hand protection:

Wear suitable gloves. EN 374

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Use neoprene or rubber gloves	3 (> 60 minutes)	> 0.35 mm		EN 374

#### Eye protection:

Safety glasses with side shields. EN 166

#### Skin and body protection:

Protective clothing (with elasticated cuffs and closed neck). EN 14605

#### Respiratory protection:

Dust production: dust mask with filter type P3. EN 149

#### Personal protective equipment symbol(s):



#### 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
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
Auto-ignition temperature	: > 400 °C @ 101325 Pa
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.877 g/cm <sup>3</sup> at 20 °C

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Solubility	: Insoluble in: Water, Organic solvents. Water: 1 mg/l at 20 °C
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
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 (OECD 431. OECD 439)
Serious eye damage/irritation	: Causes serious eye irritation. (OECD 492)
Respiratory or skin sensitisation	: Not classified (OECD 429)
Germ cell mutagenicity	: Not classified (AMES test)
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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NOAEL (animal/female, F0/P)	> 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
STOT-repeated exposure	: Not classified

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NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight/day – OECD 422

Aspiration hazard	: Not classified
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## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Not classified (OECD 201. OECD 202)
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

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### 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. Results of PBT and vPvB assessment

#### TUBALL™

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Dispose of this material and its container at hazardous or special waste collection point.  
Waste treatment methods : Disposal through controlled incineration or authorised waste dump.  
Sewage disposal recommendations : Prevent entry to sewers and public waters.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

### 14.6. Special precautions for user

#### Overland transport

Not applicable

#### Transport by sea

Not applicable

#### Air transport

Not applicable

#### Inland waterway transport

Not applicable

#### Rail transport

Not applicable

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

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### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

TUBALL™ is not on the REACH Candidate List

TUBALL™ is not on the REACH Annex XIV List

TUBALL™ is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

TUBALL™ is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

##### 15.1.2. National regulations ►

###### USA

This product is subject to the Significant New Use Rule (SNUR) published by the United States Environmental Protection Agency on December 5, 2019 in Federal Register Vol. 84, No. 234.

###### Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG)  
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG)

Water hazard class (WGK) : WGK nwg, Non-hazardous to water

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

###### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting : The substance is not listed

giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting : The substance is not listed

giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting : The substance is not listed

giftige stoffen – Ontwikkeling : The substance is not listed

#### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out

### SECTION 16: Other information

#### Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
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
EC-No.	European Community number
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
NOAEL	No-Observed Adverse Effect Level
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

#### Full text of H- and EUH-statements:

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation.

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

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### 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.

### SDS EU (REACH Annex II)

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.