Safety Data Sheet

TUBALL BATT H2O

Graphene nanotubes: 0.2-0.4% Dispersant: PVP

Compiled according to GB/T 16483-2008, GB/T 17519-2013

Issue date: 2018/08/23 Revision date: 2021/04/15 Version: 2.0

SECTION 1 Chemical product and company identification ►

Product name : TUBALL BATT H2O 0.2%

TUBALL BATT H2O 0.4%

Details of the supplier

欧洲：	美国：	亚洲：	中国：	印度：
OCSiAl Europe S.a.r.l.	OCSiAl LLC	OCSiAl Asia Pacific Co., Ltd.	OCSiAl Hong Kong Limited	VIMAL INTERTRADE PVT LTD. Shivam Centrum,
L-3364, Leudelange,	500 S Front St.,	Office 208, Pilot Plant Bldg.,	No. 1102, 11/F, Lippo	Sahar Road, Koldongri,
1, rue de la Poudrerie,	Suite 860,	Incheon Technopark	Sun Plaza, 28 Canton	Above Nexa Showroom,
Grand Duchy of	Columbus,	12 Gaetbeol-ro, Yeonsu-gu,	Road,	Andheri East,
Luxembourg	OH 43215, USA	Incheon, 406-840	Tsim Sha Tsui,	Mumbai – 400 069
		Republic of Korea	Kowloon, Hong Kong	
T +352 27 99 03 73	T +1 415 906 5271	T +82 32 260 0407	T +852 3575 3946	T +91 22 6288 4200
09.00-17.00 GMT+2	09.00-17.00 GMT-4	09.00-17.00 GMT+9	09:00-17:00; GMT+8	09:00-17:00; GMT+5.5
europe@ocsial.com	usa@ocsial.com	asiapacific@ocsial.com	china@ocsial.com	india@ocsial.com

Emergency phone number

East/South East Asia : +65 3158 1074 (English, Hindi, Japanese, Korean, Malay, Mandarin) (Carechem 24)

China : 400 120 6011 (English, Mandarin) (toll-free, access from China only)

中国（大陆，24 小时应急电话) : **0532 8388 9090 （英语，中文）

China (Mainland) **0532 8388 9090 (English, Chinese; 24-hour emergency call)

Recommended use of the chemical : The modifier used for producing lithium-ion batteries, composites, and other materials

SECTION 2 Hazards identification

Emergency overview

GHS hazard classification

Other hazards not mentioned above are Not applicable or No data is available.

Label elements

No data available

Physical and chemical hazards

No additional information available

Health hazards

No additional information available

Environmental hazards

No additional information available

Other hazards

No additional information available

SECTION 3 Composition/information on ingredients

Product form : Mixture.

Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.
Water	98.8 – 99.4	7732-18-5
PVP (polyvinyl pyrrolidone)	0.4 – 0.8	9003-39-8
Single wall carbon nanotubes*	0.2 – 0.4	7440-44-0

Comments : * Single wall carbon nanotubes TUBALL™.

SECTION 4 First-aid measures

Description of necessary first-aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

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

Most important symptoms/effects

No additional information available

Advices for first aid responders

No additional information available

Notes for the doctor

Other medical advice or treatment : Treat symptomatically

SECTION 5 Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Use extinguishing media appropriate for surrounding fire Water spray Dry powder Foam Carbon dioxide
Unsuitable extinguishing media	:	No additional information available

Specific hazards

Fire hazard	:	None known
Hazardous decomposition products in case of fire	:	Carbon dioxide (CO_2) Carbon monoxide

Advice for firefighters and protective measures

Firefighting instructions	:	No additional information available
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 Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures	:	No additional information available
Personal Precautions, Protective Equipment and Emergency Procedures	:	No additional information available

For non-emergency personnel

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

For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment Wear suitable protective clothing, gloves and eye/face protection In case of fire: Positive pressure self-contained breathing apparatus (SCBA) For further information refer to section 8: "Exposure controls/personal protection"
Emergency procedures	:	Provide adequate ventilation Evacuate area. Avoid contact with skin, eyes and clothing

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

Methods and material for containment and cleaning up

Methods for cleaning	:	No additional information available
For containment	:	Clean spills promptly Ventilate affected area Stop leak if safe to do so.

Prevention measures for secondary accidents

Prevention Measures for Secondary Accidents	:	No additional information available
Other information	:	Dispose of materials or solid residues at an authorized site

SECTION 7 Handling and storage ►

Handling

Precautions for safe handling	:	Ensure good ventilation of the work station Wear personal protective equipment Avoid contact with skin, eyes and clothing
Hygiene measures	:	Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Always wash hands after handling the product
Local and general ventilation	:	No additional information available

Storage

Storage conditions	:	Store in dry, well-ventilated area Store at ambient temperature Keep container tightly closed. Store in a well-ventilated place. Keep cool.
Material used in packaging/containers	:	No additional information available
Incompatible products	:	Acids. Bases. Oxidizing agent.
Storage temperature	:	> 5 ° C

SECTION 8 Exposure controls / Personal protection equipment ►

Occupational exposure limits

No additional information available

Biological limit values

No additional information available

Monitoring methods

No additional information available

Appropriate engineering controls

Ensure good ventilation of the work station

Personal protective equipment

Personal protective equipment : Protective goggles
Gloves
Protective clothing

Environmental exposure controls : Avoid release to the environment.

Hand protection : Wear suitable gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves.	Nitrile rubber (NBR).	6 (> 480 minutes).	0.4		
Reusable gloves.	Chloroprene rubber (CR).	6 (> 480 minutes).	0.5		
Reusable gloves.	Butyl rubber.	6 (> 480 minutes).	0.7		

Eye protection : Chemical goggles or safety glasses
Safety glasses

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

Respiratory protection : No respiratory protection needed under normal use conditions

Personal protective equipment symbol(s)

SECTION 9 Physical and chemical properties

Physical state : Liquid

Appearance : No data available

Colour : Black

Odour : Odourless

pH : No data available

Melting point : 0 ° C

Freezing point : No data available

Boiling point : 100 ° C

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas)	:	Not applicable
Vapour pressure	:	No data available
Relative vapour density at 20 ° C	:	No data available
Density	:	1.001 g/cm³
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Lower explosive limit (LEL)	:	No data available
Upper explosive limit (UEL)	:	No data available
Radioactive	:	No

SECTION 10 Stability and reactivity

Chemical stability	:	Stable under normal conditions
Reactivity	:	Stable under normal conditions
Possibility of hazardous reactions	:	None known
Conditions to avoid	:	None known
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon dioxide Carbon monoxide
Other properties	:	No additional information available

SECTION 11 Toxicological information ►

Acute toxicity

Acute toxicity (oral)	:	No data available
Acute toxicity (dermal)	:	No data available
Acute toxicity (inhalation)	:	No data available

PVP (polyvinylpyrrolidone)	
LD50 oral rat	> 2000 mg/kg
LC50 Inhalation - Rat (Dust/Mist)	> 5.2 mg/l/4h
ATE CN (oral)	2500 mg/kg bodyweight

Skin corrosion/irritation

Skin corrosion/irritation	:	No data available

Serious eye damage/eye irritation

Serious eye damage/irritation	:	No data available

Respiratory or skin sensitisation

Respiratory or skin sensitisation : No data available

Germ cell mutagenicity

Germ cell mutagenicity : No data available

Carcinogenicity

Carcinogenicity : No data available

Reproductive toxicity

Reproductive toxicity : No data available

Single wall carbon nanotubes (7440-44-0)	
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

STOT-single exposure : No data available

STOT - repeated exposure

STOT-repeated exposure : No data available

Single wall carbon nanotubes	
NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight/day - OECD 422

Aspiration hazard

Aspiration hazard : No data available

TUBALL BATT H2O 0.2% **TUBALL BATT H2O 0.4%**	
Density	1.001 g/cm³

SECTION 12 Ecological information

Ecotoxicity

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) : No data available

Hazardous to the aquatic environment, long-term (chronic) : No data available

PVP (polyvinylpyrrolidone)	
LC50 fish - 96h	> 10000 mg/l

Persistence and degradability

PVP (polyvinylpyrrolidone)	
Persistence and degradability	Not readily biodegradable
Biodegradation	< 10 % - 15 days - OECD 302B

Single wall carbon nanotubes	
Not rapidly degradable	Yes

Bioaccumulative potential

PVP (polyvinylpyrrolidone)	
Bioaccumulative potential	Not bioaccumulable

Mobility in soil

PVP (polyvinylpyrrolidone)	
Ecology - soil	Not bioaccumulable

Other adverse effects

Classification procedure (Ozone) : No data available

SECTION 13 Disposal considerations

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

Contaminated container and packaging : No additional information available

Additional information : No additional information available

Sewage disposal recommendations : Prevent entry to sewers and public waters

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

SECTION 14 Transport information

Overland transport (JT/T 617)	Transport by sea	Air transport
UN number		
Not regulated	Not regulated	Not regulated

Overland transport (JT/T 617)	Transport by sea	Air transport
Proper shipping name		
Not regulated	Not regulated	Not regulated
Transport document description		
Not regulated	Not regulated	Not regulated
Transport hazard class(es)		
Not regulated	Not regulated	Not regulated
Not regulated	Not regulated	Not regulated
Packing group		
Not regulated	Not regulated	Not regulated
Environmental hazards		
Not regulated	Not regulated	Not regulated

Special transport precautions

Overland transport (JT/T 617)

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15 Regulatory information ►

Regulation name	Specific information	
Regulations on the Safety Management of Hazardous Chemicals	Hazardous Chemicals List	Single-walled carbon nanotubes are not listed
	List of the first batch of critically regulated hazardous chemicals	Single-walled carbon nanotubes are not listed
Environmental management regulations for the first import of chemicals and the import and export of toxic chemicals set	List of Toxic Chemicals Strictly Restricted from Import and Export in China	Single-walled carbon nanotubes are not listed
Measures for the Environmental Management of New Chemical Substances	Inventory of Existing Chemical Substances in China (IECSC)	Single walled carbon nanotubes are listed with its element “Carbon” (CAS-No: 7440-44-0); All other components are listed

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
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
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

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.

SDS CN

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