

SECTION 1 Chemical product and company identification

Chemical name : TUBALL MATRIX 201

Details of the supplier

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

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 : Industrial use as additive in polymers, resins and/or coatings

SECTION 2 Hazards identification

Emergency overview

GHS hazard classification

Physical hazards	: Explosive Not classified
	: Flammable gases Not classified
	: Aerosols Not classified
	: Oxidizing gases Not classified
	: Gases under pressure Not classified
	: Flammable liquids Not classified
	: Flammable solids Not classified
	: Self-reactive substances and mixtures Not classified
	: Pyrophoric liquids Not classified
	: Pyrophoric solids Not classified
	: Self-heating substances and mixtures Not classified
	: Substances and mixtures which in contact with water emit flammable gases Not classified
	: Oxidizing liquids Not classified
	: Oxidizing solids Not classified


Safety Data Sheet

TUBALL MATRIX 201

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

- Health hazards
- : Organic peroxide Not classified
 - : Corrosive to metals Not classified
 - : Acute toxicity (Oral) Not classified
 - : Acute toxicity (Dermal) Not classified
 - : Acute toxicity (Inhalation:gas) Not classified
 - : Acute toxicity (Inhalation:vapour) Not classified
 - Acute toxicity (Inhalation:dust,mist) Not classified
 - Skin corrosion/irritation Not classified
 - Serious eye damage/eye irritation, Category 2A
 - Respiratory sensitization Not classified
 - Skin sensitization, Category 1
 - Germ cell mutagenicity, Category 2
 - Carcinogenicity Not classified
 - Reproductive toxicity Not classified
 - Specific target organ toxicity - Single exposure Not classified
 - Specific target organ toxicity - Repeated exposure Not classified
 - Aspiration hazard Not classified
- Environmental hazards
- : Hazardous to the aquatic environment - Acute hazard, Category 2
 - : Hazardous to the aquatic environment - Chronic hazard, Category 2
 - : Hazardous to the ozone layer Not classified
- Other hazards not mentioned above are Not applicable or No data is available.

Label elements

- Hazard pictograms (GHS CN)
- : 
- Signal word (GHS CN)
- : Warning.
- Hazard statements (GHS CN)
- : H317 - May cause an allergic skin reaction
 - H319 - Causes serious eye irritation
 - H341 - Suspected of causing genetic defects
 - H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS CN)

- Prevention measures
- : P201 - Obtain special instructions before use.
 - P202 - Do not handle until all safety precautions have been read and understood.
 - P261 - Avoid breathing dust, fume, gas, mist, spray, vapours.
 - P264 - Wash hands thoroughly after handling.
 - P272 - Contaminated work clothing should not be allowed out of the workplace.
 - P273 - Avoid release to the environment.
 - P280 - Wear eye protection, protective clothing, protective gloves.
- Incident response
- : P302+P352 - IF ON SKIN: Wash with plenty of water.
 - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Safety Data Sheet

TUBALL MATRIX 201

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

P308+P313 - IF exposed or concerned: Get medical advice/attention.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Safe storage

Disposal

Physical and chemical hazards

No additional information available

Health hazards

May cause an allergic skin reaction

Causes serious eye irritation

Suspected of causing genetic defects

Symptoms/effects after eye contact : Eye irritation

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Environmental hazards

Toxic to aquatic life with long lasting effects

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.
2,3-epoxypropyl neodecanoate	90	26761-45-5
Single wall carbon nanotubes*	10	N/A

Comments : * Single wall carbon nanotubes TUBALLTM.

SECTION 4 First-aid measures

Description of necessary first-aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.

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

Safety Data Sheet

TUBALL MATRIX 201

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

- 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.
If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Get medical attention.
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth out with water.
Do not induce vomiting.
Get medical attention.
Call a poison center or a doctor if you feel unwell

Most important symptoms/effects

- Symptoms/effects after eye contact : Eye irritation
- Symptoms/effects after skin contact : May cause an allergic skin reaction.

Advices for first aid responders

No additional information available

Notes for the doctor

- Other medical advice or treatment : Treat symptomatically.
Call a physician immediately if large quantities have been ingested or inhaled

SECTION 5 Fire-fighting measures

Extinguishing media

- Suitable extinguishing media : Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂)
Water spray
Dry powder
Foam
- Unsuitable extinguishing media : None known

Specific hazards

- Fire hazard : Flammable vapours can accumulate in head space of closed systems
Residue may be flammable and explosive
- Hazardous decomposition products in case of fire : Carbon dioxide
Carbon monoxide
- Explosion hazard : May form flammable/explosive vapour-air mixture

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)

Safety Data Sheet

TUBALL MATRIX 201

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

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

Heat and ignition sources : Keep away from open flames, hot surfaces and sources of ignition
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
Ensure adequate ventilation
Evacuate area.
Avoid contact with skin and eyes
Avoid breathing dust/fume/gas/mist/vapours/spray.

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 inhalation of vapours

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.
Collect spillage.

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

Safety Data Sheet

TUBALL MATRIX 201

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

SECTION 7 Handling and storage

Handling

- Precautions for safe handling : Ensure good ventilation of the work station
Avoid contact with skin, eyes and clothing
Carry out operations in the open/under local exhaust/ventilation or with respiratory protection
To prevent thermal burns avoid contact with hot product
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid contact with skin and eyes
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear personal protective equipment
- Hygiene measures : Wash contaminated clothing before reuse.
Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.
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.
Protect from sunlight.
Store locked up.
Store in a well-ventilated place.
Keep cool.
- Material used in packaging/containers : No additional information available
- Storage temperature : -40 / +40 ° C
- Heat and ignition sources : Keep away from open flames, hot surfaces and sources of ignition
- Information on mixed storage : Store away from water (including sewage plant)
- Special rules on packaging : Keep container tightly closed

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

Safety Data Sheet

TUBALL MATRIX 201

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

Personal protective equipment

- Personal protective equipment : Gloves
Protective clothing
Gas mask
- Environmental exposure controls : Avoid release to the environment.
- Hand protection : Wear suitable gloves
EN 374

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

- Eye protection : Chemical goggles or safety glasses
EN 166
Safety glasses

- Skin and body protection : Protective clothing (with elasticated cuffs and closed neck)
EN 14605

Type	Standard

- Respiratory protection : Wear respiratory protection.
Selection of respiratory protection must be based on the result of the risk assessment
[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s)



SECTION 9 Physical and chemical properties

- Physical state** : Solid
- Appearance** : Flakes. Pasty
- Colour** : Black
- Odour** : Slight
- pH** : No data available
- Melting point** : -60 ° C (2,3-epoxypropyl neodecanoate)
- Freezing point** : Not applicable
- Boiling point** : 278 ° C (2,3-epoxypropyl neodecanoate)
- Flash point** : 126 ° C (2,3-epoxypropyl neodecanoate)
- Auto-ignition temperature** : 397 (2,3-epoxypropyl neodecanoate)
- Decomposition temperature** : No data available
- Flammability (solid, gas)** : Non flammable.

Safety Data Sheet

TUBALL MATRIX 201

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

Vapour pressure	: No data available
Relative vapour density at 20 ° C	: No data available
Density	: No data available
Solubility	: Slightly soluble in water, Soluble in organic solvents.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: Not applicable
Explosive limits (vol %)	: Not applicable
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available
Radioactive	: No
Explosive properties	: Product is not explosive
Oxidising properties	: Non oxidizing

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	: Keep away from open flames, hot surfaces and sources of ignition
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases
Other properties	: No additional information available

SECTION 11 Toxicological information

Acute toxicity

Acute toxicity (oral)	: Not classified.
Acute toxicity (dermal)	: Not classified.
Acute toxicity (inhalation)	: Not classified. Not classified. Not classified.

2,3-epoxypropyl neodecanoate	
LD50 oral rat	> 9700 mg/kg
LD50 dermal rat	3800 mg/kg
ATE CN (dermal)	3800 mg/kg bodyweight

Skin corrosion/irritation

Skin corrosion/irritation	: Not classified.
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Serious eye damage/eye irritation

Serious eye damage/irritation	: Causes serious eye irritation.
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Safety Data Sheet

TUBALL MATRIX 201

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

Respiratory or skin sensitisation

Respiratory or skin sensitisation : Not classified. May cause an allergic skin reaction.

Germ cell mutagenicity

Germ cell mutagenicity : Suspected of causing genetic defects.

Carcinogenicity

Carcinogenicity : Not classified.

Reproductive toxicity

Reproductive toxicity : Not classified.

STOT - single exposure

STOT-single exposure : Not classified.

STOT - repeated exposure

STOT-repeated exposure : Not classified.

Single wall carbon nanotubes

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

Aspiration hazard : Not classified.

TUBALL MATRIX 201

Viscosity, kinematic	Not applicable
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SECTION 12 Ecological information

Ecotoxicity

Ecology - general : Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term (acute) : Toxic to aquatic life.

Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic life with long lasting effects.

2,3-epoxypropyl neodecanoate

LC50 fish - 96h	≈ 5 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 crustacea - 48h	≈ 4.8 mg/l Test organisms (species): Daphnia magna
EC50 algae - 72h	≈ 2.9 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h algae	≈ 1.2 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Safety Data Sheet

TUBALL MATRIX 201

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

Persistence and degradability

Single wall carbon nanotubes	
Not rapidly degradable	Yes

Bioaccumulative potential

2,3-epoxypropyl neodecanoate	
Partition coefficient n-octanol/water (Log Pow)	4.4 @ 20 ° C

Mobility in soil

2,3-epoxypropyl neodecanoate	
Partition coefficient n-octanol/water (Log Pow)	4.4 @ 20 ° C

Other adverse effects

Classification procedure (Ozone) : Not classified.

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		
3077	3077	3077
Proper shipping name		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate)	Environmentally hazardous substance, solid, n.o.s. (CONTAINS : 2,3-epoxypropyl neodecanoate)
Transport document description		
UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl	UN 3077 Environmentally hazardous substance, solid, n.o.s. (CONTAINS : 2,3-epoxypropyl neodecanoate), 9, III

Safety Data Sheet

TUBALL MATRIX 201

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

Overland transport (JT/T 617)	Transport by sea	Air transport
neodecanoate), Class 9, PG III	neodecanoate), 9, III, MARINE POLLUTANT	
Transport hazard class(es)		
9	9	9
Packing group		
III.	III.	III.
Environmental hazards		
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes

Special transport precautions

Special rules on packaging : Keep container tightly closed

Overland transport (JT/T 617)

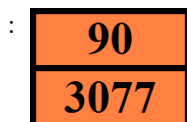
Classification code (JT/T 617) : M7.
 Special provisions (JT/T 617) : 274, 335, 375, 601.
 Limited quantities (JT/T 617) : 5kg.
 Excepted quantities (JT/T 617) : E1.
 Packing instructions (JT/T 617) : P002, IBC08, LP02, R001.
 Special packing provisions (JT/T 617) : PP12, B3.
 Mixed packing provisions (JT/T 617) : MP10.
 Portable tank and bulk container instructions (JT/T 617) : T1, BK1, BK2.
 Portable tank and bulk container special provisions (JT/T 617) : TP33.
 Tank codes (JT/T 617) : SGAV, LGBV.
 Vehicle for tank carriage (JT/T 617) : AT.
 Transport category (JT/T 617) : 3.
 Tunnel restriction code (JT/T 617) : E.
 Special provisions for carriage - Packages (JT/T 617) : V13.
 Special provisions for carriage - Bulk (JT/T 617) : VC1, VC2.
 Special provisions for carriage - Loading, unloading and handling (JT/T 617) : CV13.
 Hazard identification number (JT/T 617) : 90.

Safety Data Sheet

TUBALL MATRIX 201

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

Orange-coloured plate (JT/T 617)



Transport by sea

Special provisions (IMDG) : 274, 335, 966, 967, 969.
Limited quantities (IMDG) : 5 kg.
Excepted quantities (IMDG) : E1.
Packing instructions (IMDG) : LP02, P002.
Special packing provisions (IMDG) : PP12.
IBC packing instructions (IMDG) : IBC08.
IBC special provisions (IMDG) : B3.
Tank instructions (IMDG) : BK1, BK2, BK3, T1.
Tank special provisions (IMDG) : TP33.
Stowage category (IMDG) : A.

Air transport

PCA Excepted quantities (IATA) : E1.
PCA Limited quantities (IATA) : Y956.
PCA limited quantity max net quantity (IATA) : 30kgG.
PCA packing instructions (IATA) : 956.
PCA max net quantity (IATA) : 400kg.
CAO packing instructions (IATA) : 956.
CAO max net quantity (IATA) : 400kg.
Special provisions (IATA) : A97, A158, A179, A197.
ERG code (IATA) : 9L.

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 should be judged by their chemical composition, carbon element (CAS-No: 7440-44-0) included; 2,3-epoxypropyl neodecanoate

Safety Data Sheet

TUBALL MATRIX 201

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

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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
ATE	Acute Toxicity Estimate
BLV	Biological limit value
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
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
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

SDS CN

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