

SECTION 1 Chemical product and company identification ►

Chemical name : TUBALL MATRIX 203

Details of the supplier

欧洲: OCSiAl Europe S.a.r.l. L-3364, Leudelange, 1, rue de la Poudrerie, Grand Duchy of Luxembourg	美国: OCSiAl LLC 500 S Front St., Suite 860, Columbus, OH 43215, USA	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	中国: OCSiAl Hong Kong Limited No. 1102, 11/F, Lippo Sun Plaza, 28 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong	印度: VIMAL INTERTRADE PVT LTD. Shivam Centrum, Sahar Road, Koldongri, Above Nexa Showroom, Andheri East, Mumbai – 400 069
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 3946 09:00-17:00; GMT+8 china@ocsial.com	T +91 22 6288 4200 09:00-17:00; GMT+5.5 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 : Industrial use as additive in polymers, resins and/or coatings

SECTION 2 Hazards identification

Emergency overview

Flakes. Pasty. Black. Keep away from open flames, hot surfaces and sources of ignition. Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases. Strong oxidizing agents. Slight. Stable under normal conditions. None known. Provide adequate ventilation. Evacuate area. Avoid inhalation of vapours. Wear suitable protective clothing, gloves and eye/face protection. In case of fire: Positive pressure self-contained breathing apparatus (SCBA). Product is not explosive. Non oxidizing. Causes mild skin irritation. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

GHS hazard classification

- Health hazards : Skin corrosion/irritation, Category 3
- : Serious eye damage/eye irritation, Category 2A
- : Skin sensitization, Category 1
- : Germ cell mutagenicity, Category 2
- Environmental hazards : Hazardous to the aquatic environment - Chronic hazard, Category 2
- Other hazards not mentioned above are Not applicable or No data is available.

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

Label elements

Hazard pictograms (GHS CN)



Signal word (GHS CN)

: Warning.

Hazard statements (GHS CN)

: H316 - Causes mild skin irritation
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.
P264 - Wash hands, forearms and face thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection.

Incident response

: P302+P352 - IF ON SKIN: Wash with plenty of soap and 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.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice/attention.
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.

Safe storage

: P405 - Store locked up.

Disposal

: P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Physical and chemical hazards

No additional information available

Health hazards

Causes mild skin irritation

May cause an allergic skin reaction

Causes serious eye irritation

Suspected of causing genetic defects

Symptoms/effects after eye contact

: Causes serious eye irritation.

Symptoms/effects after skin contact

: May cause an allergic skin reaction.

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

Environmental hazards

Toxic to aquatic life with long lasting effects

Other hazards

None under normal conditions

SECTION 3 Composition/information on ingredients ►

Product form : Mixture.

Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.
2,3-epoxypropyl neodecanoate	70	26761-45-5
Polymer	10 - 14	Trade secret
Single wall carbon nanotubes*	10	7440-44-0
Alkylolammonium salt	6 - 10	398475-96-2

Comments : * Single wall carbon nanotubes TUBALL™.

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.
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.

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

Call a poison center or a doctor if you feel unwell

Most important symptoms/effects

- Symptoms/effects after eye contact : Causes serious 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 : No additional information available

SECTION 5 Fire-fighting measures

Extinguishing media

- Suitable extinguishing media : Powder, Alcohol-resistant foam, Water spray, Carbon dioxide (CO₂)
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)
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 : Ensure adequate ventilation
Evacuate area.

For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection
In case of fire: Positive pressure self-contained breathing apparatus (SCBA)

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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

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.

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)

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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

Provide local exhaust or general room ventilation

Personal protective equipment

Personal protective equipment : Gloves
Protective clothing
Gas mask

Hand protection : Wear suitable gloves

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

Eye protection : Chemical goggles or safety glasses
Safety glasses

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

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

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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

Alkylolammonium salt	
LD50 oral rat	> 5000 mg/kg

Skin corrosion/irritation

Skin corrosion/irritation : Causes mild skin irritation.

Serious eye damage/eye irritation

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity

Germ cell mutagenicity : Suspected of causing genetic defects.

Carcinogenicity

Carcinogenicity : No data available

Reproductive toxicity

Reproductive toxicity : No data available

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

SECTION 12 Ecological information

Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : No data available

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

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

long-term (chronic)

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)
Alkyloammonium salt	
LC50 fish - 96h	8 mg/l Oncorhynchus mykiss (Rainbow trout) - OECD 203
ErC50 algae - 72h	> 1 mg/l Pseudokirchneriella subcapitata - OECD 201

Persistence and degradability

Alkyloammonium salt	
Persistence and degradability	Not readily biodegradable

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




Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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 ; Alkylolammonium salt)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt)	Environmentally hazardous substance, solid, n.o.s. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt)
Transport document description		
UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt), Class 9, PG III	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt), 9, III, MARINE POLLUTANT	UN 3077 Environmentally hazardous substance, solid, n.o.s. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt), 9, III
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.

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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.
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.

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

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 are listed with its element "Carbon" (CAS-No: 7440-44-0); 2,3-epoxypropyl neodecanoate (CAS-No. 26761-45-5) is listed; Alkylolammonium salt (CAS-No. 398475-96-2) is 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

Safety Data Sheet

TUBALL MATRIX 203

Compiled according to GB/T 16483-2008, GB/T 17519-2013
Revision date: 18/06/2021

Abbreviations and acronyms

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

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable