

SECTION 1 Chemical product and company identification ►

Chemical name : TUBALL MATRIX 208

Details of the supplier

欧洲:	美国:	亚洲:	中国:	印度:
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	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. Stable under normal conditions. Provide adequate ventilation. Avoid inhalation of vapours. Wear suitable protective clothing, gloves and eye/face protection. In case of fire: Positive pressure self-contained breathing apparatus (SCBA). Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

GHS hazard classification

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

Label elements

Hazard pictograms (GHS CN) : 

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Signal word (GHS CN) : Warning.
Hazard statements (GHS CN) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS CN)

Prevention measures : P261 - Avoid breathing dust, fume.
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 protective gloves, eye protection, protective clothing.

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.
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.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.

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 skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after skin contact : Causes skin irritation, 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.

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Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	70	68609-97-2
Polymer	10 - 14	Confidential
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 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 with plenty of soap and water.
Wash contaminated clothing before reuse.
If skin irritation occurs: Get medical attention
- 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

- Symptoms/effects after eye contact : Causes serious eye irritation.
- Symptoms/effects after skin contact : Causes skin irritation.
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

SECTION 5 Fire-fighting measures

Extinguishing media

- Suitable extinguishing media : Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂)

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Unsuitable extinguishing media : Do not use a heavy water stream

Specific hazards

Hazardous decomposition products in case of fire : Carbon dioxide
Carbon monoxide
Nitrogen oxides
Phosphorus oxides

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)

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)
Emergency procedures : Provide adequate ventilation
Evacuate area.
Avoid inhalation of vapours

Environmental precautions

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

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SECTION 7 Handling and storage ►

Handling

- Precautions for safe handling : Avoid contact with skin, eyes and clothing
Carry out operations in the open/under local exhaust/ventilation or with respiratory protection
Avoid breathing dust, fume.
To prevent thermal burns avoid contact with hot product
- Hygiene measures : Do not eat, drink or smoke when using this product.
Wash contaminated clothing before reuse.
- Local and general ventilation : No additional information available

Storage

- Storage conditions : Store in dry, well-ventilated area
Store at ambient temperature
Protect from sunlight.
Protect from moisture.
- Material used in packaging/containers : No additional information available
- Incompatible products : Oxidizing agent.
- Storage temperature : 5 - 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 only in original container.
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

No additional information available

Personal protective equipment

- Personal protective equipment : Gloves
Safety glasses
Protective clothing
- Hand protection : Chemically resistant protective gloves
The suitability for a specific workplace should be discussed with the producers of the protective gloves

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Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves.	Butyl rubber.	6 (> 480 minutes).			
Reusable gloves.	Nitrile rubber (NBR).	10 - 480 minutes.			
Reusable gloves.	Solvent-resistant gloves (Butyl rubber).	6 (> 480 minutes).			
Reusable gloves.	Neoprene rubber (HNBR).	6 (> 480 minutes).			

- Eye protection : Chemical goggles or safety glasses
Emergency eye wash fountain with clean water
- Skin and body protection : Protective clothing (with elasticated cuffs and closed neck)
- Respiratory protection : In case of inadequate ventilation wear respiratory protection.
Selection of respiratory protection must be based on the result of the risk assessment

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** : > 200 ° C (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)
- Freezing point** : Not applicable
- Boiling point** : Not applicable
- Flash point** : 142 ° C (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)
- Auto-ignition temperature** : No data available
- Decomposition temperature** : > 200 ° C (Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.)
- Vapour pressure** : No data available
- Relative vapour density at 20 ° C** : No data available
- Density** : No data available
- Solubility** : Insoluble in water.
- Partition coefficient n-octanol/water (Log Pow)** : No data available
- Lower explosive limit (LEL)** : No data available

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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 : Keep away from open flames, hot surfaces and sources of ignition. Direct sunlight. Moisture

Incompatible materials : Oxidizing agent

Hazardous decomposition products : Carbon dioxide
Carbon monoxide
Nitrogen oxides
Phosphorus oxides

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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	
LD50 oral rat	> 26.8 g/kg
LD50 dermal rabbit	> 4000 mg/kg
LC50 Inhalation - Rat	> 0.15 mg/l - 7 Hours
Alkyllammonium salt	
LD50 oral rat	> 5000 mg/kg

Skin corrosion/irritation

Skin corrosion/irritation : Causes 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 : No data available

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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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

LOAEL (dermal, rat/rabbit, 90 days)	10 mg/kg bodyweight/day
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NOAEL (dermal, rat/rabbit, 90 days)	1 mg/kg bodyweight/day
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Single wall carbon nanotubes

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

Aspiration hazard : No data available

SECTION 12 Ecological information

Ecotoxicity

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.

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

LC50 fish - 96h	> 100 mg/l Oncorhynchus mykiss (Rainbow trout) - OECD 203
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EC50 crustacea - 48h	7.2 mg/l Daphnia magna (Water flea) - OECD 202
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EC50 algae - 72h	843.75 mg/l Selenastrum capricornutum - OECD 201
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Alkyloammonium salt

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

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	
Persistence and degradability	Readily biodegradable
Biodegradation	87 % - 28 days - OECD 301F
Alkylolammonium salt	
Persistence and degradability	Not readily biodegradable

Bioaccumulative potential

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	
Partition coefficient n-octanol/water (Log Pow)	> 3.77 (20 ° C) - OECD 107

Mobility in soil

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	
Partition coefficient n-octanol/water (Log Pow)	> 3.77 (20 ° C) - OECD 107

Other adverse effects

Classification procedure (Ozone) : No data available

SECTION 13 Disposal considerations

Waste treatment methods	: Disposal through controlled incineration or authorised waste dump.
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 : Alkylolammonium salt)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : Alkylolammonium salt)	Environmentally hazardous substance, solid, n.o.s. (CONTAINS : Alkylolammonium salt)

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Overland transport (JT/T 617)	Transport by sea	Air transport
Transport document description		
UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : Alkylolammonium salt), Class 9, PG III	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : Alkylolammonium salt), 9, III, MARINE POLLUTANT	UN 3077 Environmentally hazardous substance, solid, n.o.s. (CONTAINS : 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 only in original container.
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.

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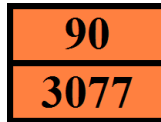
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Special provisions for carriage - Bulk : VC1, VC2.
(JT/T 617)

Special provisions for carriage - Loading, : CV13.
unloading and handling (JT/T 617)

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 : 30kgG.
(IATA)

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.

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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); Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. (CAS-No. 68609-97-2) 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

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Abbreviations and acronyms

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
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.

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