

**SECTION 1: Identification of the hazardous chemical and of the supplier**

**1.1. Product identifier**

Name : TUBALL MATRIX 203

**1.2. Other means of identification**

Product code : 17EST03

**1.3. Recommended use of the chemical and restrictions on use**

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

**1.4. Supplier details**

**Supplier**

Asia:	China:	India:
OCSiAI Asia Pacific Co., Ltd.	OCSiAI Hong Kong Limited	VIMAL INTERTRADE PVT LTD. Shivam Centrum,
Office 208, Pilot Plant Bldg.,	No. 1102, 11/F, Lippo Sun	Sahar Road, Koldongri,
Incheon Technopark	Plaza, 28 Canton Road,	Above Nexa Showroom,
12 Gaetbeol-ro, Yeonsu-gu,	Tsim Sha Tsui, Kowloon,	Andheri East,
Incheon, 406-840	Hong Kong	Mumbai – 400 069
Republic of Korea		
T +82 32 260 0407	T +852 3575 3946	T +91 22 6288 4200
09.00-17.00 GMT+9	09:00-17:00; GMT+8	09:00-17:00; GMT+5.5
asiapacific@ocsial.com	china@ocsial.com	india@ocsial.com

**1.5. Emergency phone number**

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

**SECTION 2: Hazards identification**

**2.1. Classification of the hazardous chemical**

**Classification according to Industry Code of Practice on chemicals classification and hazard communication (2019)**

Serious eye damage or eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Germ cell mutagenicity, Category 2	H341
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

**2.2. Label elements**

**Labelling according to Industry Code of Practice on chemicals classification and hazard communication (2019)**

Hazard pictograms (GHS MY)	:	
Signal word (GHS MY)	:	Warning
Contains	:	2,3-epoxypropyl neodecanoate
Hazard statements (GHS MY)	:	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 MY)	:	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

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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  
P281 - Use personal protective equipment as required  
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 ... 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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards that do not result in classification

Other hazards which do not result in classification : None under normal conditions

## SECTION 3: Composition and information of the ingredients of the hazardous chemical

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Industry Code of Practice on chemicals classification and hazard communication (2019)
2,3-epoxypropyl neodecanoate	CAS-No.: 26761-45-5	70	Flam. Liq. Not classified Acute Tox. Not classified (Oral) Acute Tox. Not classified (Dermal) Skin Sens. 1, H317 Muta. 2, H341 Aquatic Acute Not classified Aquatic Chronic 2, H411
Polymer	Trade Secret	10 – 14	Not classified
Single wall carbon nanotubes*	N/A	10	Pyr. Sol. Not classified Self-heat. Not classified Water-react. Not classified Ox. Sol. Not classified Eye Irrit. 2, H319 STOT RE Not classified
Alkylolammonium salt	CAS-No.: 398475-96-2	6 – 10	Acute Tox. Not classified (Oral) Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Comments : \* Single wall carbon nanotubes TUBALL™

## SECTION 4: First-aid measures

### 4.1. Description of necessary first aid measures

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

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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. Wash skin with plenty of water. If skin irritation or rash occurs: Get medical advice/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. 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.

### 4.2. Most important symptoms/effects, acute and delayed

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

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

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

### 5.2. Physicochemical hazards arising from the chemical

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

### 5.3. Special protective equipment and precautions for fire fighters

Hazchem Code	: 2Z
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.
EAC code	: 2Z

## 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	: Ventilate spillage area. Ensure adequate ventilation. Evacuate area. Avoid contact with skin and eyes. Avoid breathing dust, mist.

#### 6.1.2. 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.

### 6.2. 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.

### 6.3. Methods and materials for containment and cleaning up

For containment	: Clean spills promptly. Ventilate affected area. Stop leak if safe to do so. Collect spillage.
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- Methods for cleaning up : Mechanically recover the product. Clear up rapidly by scoop or vacuum. Collect in closed container and remove to a safe place for disposal by burning. Notify authorities if product enters sewers or public waters.
- Reference to other sections (13) : For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe 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. Avoid breathing dust, fume. 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. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

- 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.
- 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 and personal protection

#### 8.1. Control parameters

No additional information available

#### Exposure limit values for the other components

No additional information available

##### 8.1.1 Biological monitoring

No additional information available

#### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Provide local exhaust or general room ventilation. Ensure good ventilation of the work station.

#### 8.3. Individual protection measures, such as PPE

<b>Hand protection:</b>					
Chemically resistant protective gloves					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves, Reusable gloves	Nitrile rubber (NBR)		>0.18		
<b>Eye protection:</b>					
Chemical goggles or safety glasses					
<b>Skin and body protection:</b>					
Protective clothing (with elasticated cuffs and closed neck)					

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### 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):



Environmental exposure controls : Avoid release to the environment.

## SECTION 9: Physical and chemical properties

Physical state	: Solid
Appearance	: Flakes. Pasty.
Colour	: Black
Odour	: Slight
Odour threshold	: No data available
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)
Evaporation rate	: No data available
Flammability (solid, gas)	: Non flammable.
Explosive limits	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: No data available
Solubility	: Slightly soluble in water. Soluble in organic solvents.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Auto-ignition temperature	: 397 °C (2,3-epoxypropyl neodecanoate)
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive properties	: Product is not explosive.
Oxidising properties	: Non oxidizing.

## SECTION 10: Stability and reactivity

Reactivity	: Stable under normal conditions
Chemical stability	: 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

## 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

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2,3-epoxypropyl neodecanoate	
LD50 oral rat	> 9700 mg/kg
LD50 dermal rat	3800 mg/kg

Alkylolammonium salt	
LD50 oral rat	> 5000 mg/kg

Skin corrosion or irritation	: Not classified
Serious eye damage or eye irritation	: Causes serious eye irritation.
Respiratory sensitization	: Not classified
Skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

Single wall carbon nanotubes	
NOAEL (animal/female, F0/P)	no adverse effects seen at highest dose tested > 1000 mg/kg bw/day - OECD 422
NOAEL (animal, F1)	> 1000 mg/kg bw/day - no adverse effects seen at highest dose tested on prenatal development (conceptus to birth) - OECD 422
NOAEL (animal, F1)	> 1000 mg/kg bw/day - no adverse effects seen at highest dose tested on postnatal development (pup) - OECD 422

Specific target organ toxicity (STOT) – single exposure : Not classified

Specific target organ toxicity (STOT) – repeated exposure : Not classified

Single wall carbon nanotubes	
NOAEL (oral, rat, 90 days)	no adverse effects seen at highest dose tested > 1000 mg/kg bodyweight/day - OECD 422

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Ecotoxicity

Ecology - general	: Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
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)

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

### 12.2. Persistence and degradability

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### Alkylolammonium salt

Persistence and degradability : Not readily biodegradable.

### 12.3. Bioaccumulative potential

#### 2,3-epoxypropyl neodecanoate

Partition coefficient n-octanol/water (Log Pow) : 4.4 @ 20 °C

### 12.4. Mobility in soil

#### 2,3-epoxypropyl neodecanoate

Partition coefficient n-octanol/water (Log Pow) : 4.4 @ 20 °C

### 12.5. Other adverse effects

Ozone : Not classified  
Other adverse effects : No additional information available

## SECTION 13: Disposal information

### 13.1. Disposal methods

Waste treatment methods : Disposal through controlled incineration or authorised waste dump.  
Sewage disposal recommendations : Prevent entry to sewers and public waters.  
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.  
Additional information : Clean up even minor leaks or spills if possible without unnecessary risk.

## SECTION 14: Transportation information

### 14.1. UN number

UN-No. (UN RTDG) : 3077  
UN-No. (IMDG) : 3077  
UN-No. (IATA) : 3077

### 14.2. UN proper shipping name

Proper Shipping Name (UN RTDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt)  
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt)  
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s. (CONTAINS : 2,3-epoxypropyl neodecanoate ; Alkylolammonium salt)

### 14.3. Transport hazard class(es)

#### UN RTDG

Transport hazard class(es) (UN RTDG) : 9  
Danger labels (UN RTDG) : 9



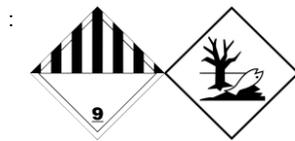
#### IMDG

Transport hazard class(es) (IMDG) : 9  
Danger labels (IMDG) : 9

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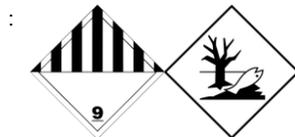
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### IATA

Transport hazard class(es) (IATA) : 9  
Danger labels (IATA) : 9



### 14.4. Packing Group, if applicable

Packing group (UN RTDG) : III  
Packing group (IMDG) : III  
Packing group (IATA) : III

### 14.5. Environmental hazards

Dangerous for the environment : Yes  
Marine pollutant : Yes  
Other information : No supplementary information available

### 14.6. Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

#### UN RTDG

Special provisions (UN RTDG) : 274, 331, 335, 375  
Limited quantities (UN RTDG) : 5 kg  
Excepted quantities (UN RTDG) : E1  
Packing instruction (UN RTDG) : P002, IBC08, LP02  
Special packing provisions (UN RTDG) : PP12, B3  
Portable tank and bulk container special instructions (UN RTDG) : T1, BK2, BK3  
Portable tank and bulk container special provisions (UN RTDG) : TP33

#### IMDG

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  
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE  
EmS-No. (Spillage) : S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS  
Stowage category (IMDG) : A  
Stowage and handling (IMDG) : SW23

#### IATA

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

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### 14.7. Special precautions for user

Not applicable

### 14.8. Hazchem or Emergency Action Code

EAC code : 2Z.

Hazchem Code : 2Z

## SECTION 15: Regulatory information

### 15.1. Safety, health, and environmental regulations specific for the hazardous chemical in question

Regulation	Component/ Mixture
EHS Notification and Registration Scheme	
Environmental Quality (Chlorofluorocarbons Prohibition) Order 1993	Not applicable TUBALL MATRIX 203
Environmental Quality (Industrial Effluent) Regulations 2009	TUBALL MATRIX 203
Environmental Quality (Scheduled Wastes) Regulations 2007	TUBALL MATRIX 203
Control of Industrial Major Accident Hazards Regulations 1996	TUBALL MATRIX 203
Prohibition of Use of Substance Order 1999	TUBALL MATRIX 203
Use and Standards of Exposure of Chemical Hazardous to Health Regulations 2000	TUBALL MATRIX 203
Chemical Weapons Convention Act	TUBALL MATRIX 203
Corrosive and Explosive Substances and Offensive Weapons Act	TUBALL MATRIX 203
Dangerous Drugs Act	TUBALL MATRIX 203
Pesticides Act	TUBALL MATRIX 203
Petroleum (Safety Measures) Act	TUBALL MATRIX 203
Poisons Act 1952	TUBALL MATRIX 203
Poisons (Psychotropic Substances) Regulations 1989	TUBALL MATRIX 203

### 15.2. International agreements

No additional information available

## SECTION 16: Other information

Version : 1.0

Issue date : 31/01/2023

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### 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

Full text of H-statements	
Acute Tox. Not classified (Dermal)	Acute toxicity (dermal) Not classified
Acute Tox. Not classified (Oral)	Acute toxicity (oral) Not classified
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Acute Not classified	Hazardous to the aquatic environment – Acute Hazard Not classified
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Eye Irrit. 2	Serious eye damage or eye irritation, Category 2
Flam. Liq. Not classified	Flammable liquids Not classified
Muta. 2	Germ cell mutagenicity, Category 2
Ox. Sol. Not classified	Oxidising solids Not classified
Pyr. Sol. Not classified	Pyrophoric solids Not classified
Self-heat. Not classified	Self-heating substances and mixtures Not classified
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE Not classified	Specific target organ toxicity (repeated exposure) Not classified
Water-react. Not classified	Substances and mixtures which in contact with water emit flammable gases Not classified
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H341	Suspected of causing genetic defects
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

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.

Safety Data Sheet (SDS), Malaysia

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.