

## 1. Chemical product and company identification ▶

Product name : TUBALL MATRIX 601  
 Type of product : Nanoform embedded in a matrix  
 Product group : Trade product

### Company information

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### 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)

## 2. Hazards identification

### GHS classification

Physical hazards	Explosives	classification not possible
	Flammable gases	No classification
	Aerosol	classification not possible
	Oxidizing gases	No classification
	Gases under pressure	No classification
	Flammable liquids	No classification
	Flammable solids	classification not possible
	Self-reactive substances and mixtures	classification not possible
	Pyrophoric liquids	No classification
	Pyrophoric solids	classification not possible
	Self-heating substances and mixtures	classification not possible
	Substances and mixtures which in contact with water emit flammable gases	classification not possible
	Oxidizing liquids	No classification
	Oxidizing solids	classification not possible
	Organic peroxides	classification not possible
	Corrosive to metals	classification not possible
	Desensitized explosives	classification not possible
Health hazards	Acute toxicity (oral)	classification not possible
	Acute toxicity (dermal)	classification not possible
	Acute toxicity (inhalation:gas)	classification not possible

# TUBALL MATRIX 601

Issue date: 2020/07/13  
Revision date: 2021/12/27

Version: 3.1

	Acute toxicity (inhalation:vapours)	No classification
	Acute toxicity (inhalation:dust/mist)	classification not possible
	Skin corrosion/irritation	classification not possible
	Serious eye damage/eye irritation	Category 2
	Respiratory sensitization	classification not possible
	Skin sensitization	classification not possible
	Germ cell mutagenicity	classification not possible
	Carcinogenicity	classification not possible
	Reproductive toxicity	classification not possible
	Specific target organ toxicity (single exposure)	classification not possible
	Specific target organ toxicity (repeated exposure)	classification not possible
	Aspiration hazard	classification not possible
Environmental hazards	Hazardous to the aquatic environment, short-term (acute)	classification not possible
	Hazardous to the aquatic environment, long-term (chronic)	classification not possible
	Hazardous to the ozone layer	classification not possible

Hazard  
pictograms  
(GHS JP)



Signal word (GHS JP) : Warning

Hazard statements (GHS JP) : Causes serious eye irritation. (H319)

## Precautionary statements (GHS JP)

Prevention : Wash hands thoroughly after handling. (P264)  
Wear eye protection, protective clothing, protective gloves.  
(P280)

Response : IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue  
rinsing. (P305+P351+P338)  
If eye irritation persists: Get medical advice/attention.  
(P337+P313)

## 3. Composition/information on ingredients ►

Distinction of substance or  
mixture : Mixture

Generic name : TUBALL MATRIX 601

Name	Concentration (%)	Formula	Reference number in the gazette list		CAS-No.
			CSCL No.	ISHL No.	
Polydimethylsiloxane	90	(C2 H6 O Si)n	-	-	Trade secret

## TUBALL MATRIX 601

Issue date: 2020/07/13

Revision date: 2021/12/27

Version: 3.1

Single wall carbon nanotubes*	10	C	-	-	N/A
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Comments : \*Single wall carbon nanotubes TUBALL™  
Judging by the carbon content of the carbon nanotubes (CNTs), carbon nanotubes do not fall under the new chemical substance inventory of the Chemical Substances Control Law.

### 4. First aid measures

#### First aid measures

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

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Rinse mouth out with water.  
Get medical advice/attention.

#### Most Important Symptoms/Effects

Symptoms/effects : Excessive exposure may lead to burning sensation in the mouth and throat, salivation, nausea, abdominal pain, vomiting, and diarrhoea.

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause moderate irritation, including burning sensation, tearing, redness or swelling.

#### Notes to physician

Other medical advice or treatment : Treat symptomatically.

### 5. Fire fighting measures

Suitable extinguishing media : Water spray, Dry powder, Foam

Unsuitable extinguishing media : None known

Fire hazard : None known.

Explosion hazard : None known.

Hazardous decomposition products in case of fire : Toxic fumes may be released

Protection during firefighting : Do not attempt to take action without suitable protective equipment.  
Self-contained breathing apparatus.  
Complete protective clothing.

### 6. Accidental release measures

#### Personal Precautions, Protective Equipment and Emergency Procedures

##### For non-emergency personnel

Protective equipment : Wear suitable protective clothing.

Emergency procedures : Ventilate spillage area.

##### For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment.  
For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Provide adequate ventilation.

Evacuate area.  
Avoid inhalation of vapours.

**Environmental precautions**

Environmental precautions : Avoid release to the environment.

**Methods and Equipment for Containment and Cleaning up**

For containment : Clean spills promptly.  
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Ventilate affected area.  
Stop leak if safe to do so.

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of materials or solid residues at an authorized site.

**7. Handling and storage****Handling**

Technical measures : No data available

Precautions for safe handling : Ensure good ventilation of the work station.  
Wear personal protective equipment.

Prevents handling of incompatible substances or mixtures : No data available

Hygiene measures : Do not eat, drink or smoke when using this product.  
Always wash hands after handling the product.

**Storage**

Storage conditions : Store in a well-ventilated place.  
Keep cool.

Material used in packaging/containers : No data available

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.

**8. Exposure controls / Personal protection equipment****Single wall carbon nanotubes (7440-44-0)****Japan - Occupational Exposure Limits**

Exposure limits (JSOH)	【Occupational exposure limits for dusts】 (Class 1) Respirable dust 0.5mg/m <sup>3</sup> Total dust 2mg/m <sup>3</sup>
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Appropriate engineering controls : Ensure good ventilation of the work station

**Protective equipment**

Personal protective equipment : Safety glasses, Protective clothing, Gloves

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment

Hand protection : Protective gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Butyl rubber	6 (> 480 minutes)	>0.3		
Disposable gloves	Nitrile rubber	6 (> 480 minutes)	>0.1		

Eye protection : Safety glasses

Skin and body protection : Wear suitable protective clothing

Personal protective equipment symbol(s)



Environmental exposure controls : Avoid release to the environment.

## 9. Physical and chemical properties

Physical state	: Solid
Appearance	: Paste
Colour	: Black
Odour	: Characteristic
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: > 100 ° C (Polydimethylsiloxane)
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative density	: No data available
Density	: No data available
Relative gas density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Explosive limits (vol %)	: Not applicable
Viscosity, kinematic	: Not applicable

## 10. Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: Strong oxidizing agents.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological information

Acute toxicity (oral)	: classification not possible
Acute toxicity (dermal)	: classification not possible
Acute toxicity (inhalation)	: No data available
Acute toxicity (inhalation)	: classification not possible (gas) Not applicable (Vapour) classification not possible (dust, mist)

## TUBALL MATRIX 601

Issue date: 2020/07/13  
Revision date: 2021/12/27

Version: 3.1

Polydimethylsiloxane	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2008 mg/kg

Skin corrosion/irritation : classification not possible  
Serious eye damage/irritation : Causes serious eye irritation.  
Respiratory sensitization : classification not possible  
Skin sensitization : classification not possible  
Germ cell mutagenicity : classification not possible  
Carcinogenicity : classification not possible  
Reproductive toxicity : classification not possible  
STOT-single exposure : classification not possible  
  
STOT-repeated exposure : classification not possible

Single wall carbon nanotubes (7440-44-0)	
NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight/day - OECD 422

Aspiration hazard : classification not possible

TUBALL MATRIX 601	
Viscosity, kinematic	Not applicable

Single wall carbon nanotubes (7440-44-0)	
Viscosity, kinematic	Not applicable

## 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) : classification not possible  
Hazardous to the aquatic environment, long-term (chronic) : classification not possible

### Persistence and degradability

TUBALL MATRIX 601	
Persistence and degradability	No data available

Single wall carbon nanotubes (7440-44-0)	
Not rapidly degradable	

### Bioaccumulative potential

TUBALL MATRIX 601	
Bioaccumulative potential	No data available

### Mobility in soil

TUBALL MATRIX 601	
Mobility in soil	No data available

### Hazardous to the ozone layer

Ozone : classification not possible  
Other adverse effects : No additional information available

**13. Disposal considerations**

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.
Waste treatment methods	: Disposal through controlled incineration or authorised waste dump.
Regional legislation (waste)	: Dispose of this material and its container at hazardous or special waste collection point.
Sewage disposal recommendations	: Prevent entry to sewers and public waters.
Additional information	Clean up even minor leaks or spills if possible without unnecessary risk.

**14. Transport information****International Regulations****Overland transport (UN RTDG)**

UN-No. (UN RTDG)	: Not regulated
Proper Shipping Name (UN RTDG)	: Not regulated
Packing group (UN RTDG)	: Not regulated
Transport hazard class(es) (UN RTDG)	: Not regulated

**Regulations in Japan**

Other information	: No supplementary information available
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**15. Regulatory information****National law**

Fire Service Law	: Group 4, Flammable Liquids, Class 3 petroleum, Water-insoluble liquids (Act, Art.2, Para.7, Appended Table 1, Group 4) Group 4, Flammable Liquids, Class 4 Petroleum (Act, Art.2, Para.7, Appended Table 1, Group 4) Designated Combustibles, Synthetic resins (Act, Art.9-4, Cabinet Order Concerning the Control of Hazardous Materials, Art.1-12, Appended Table 4)
Law Relating to Prevention of Marine Pollution and Maritime Disasters	: Harmful Liquid Substances (Group Y), (Enforcement Order, Art. Appended Table 1)
Foreign Exchange and Foreign Trade Control Act	: Export Trade Control Order, Appended Table 1, Para.16  Single walled carbon nanotubes are listed with its element "Carbon" ; others are all listed

**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
WGK	Water Hazard Class
VOC	Volatile Organic Compounds
N. O. S.	Not Otherwise Specified
OEL	Occupational Exposure Limit
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
ATE	Acute Toxicity Estimate

## TUBALL MATRIX 601

Issue date: 2020/07/13  
Revision date: 2021/12/27

Version: 3.1

CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
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
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
EC-No.	European Community number
EN	European Standard
IOELV	Indicative Occupational Exposure Limit Value
IARC	International Agency for Research on Cancer
TLM	Median Tolerance Limit
	Mass-based Dustiness Index

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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