

## 1. Chemical product and company identification ▶

Product name : TUBALL MATRIX 610  
 Type of product : Nanoform embedded in a matrix

### Company information

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## 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
	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	classification not possible
	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

### 3. Composition/information on ingredients ►

Distinction of substance or mixture : Mixture

Generic name : TUBALL MATRIX 610

Name	Concentration (%)	Formula	Reference number in the gazette list		CAS-No.
			CSCL No.	ISHL No.	
Severely refined paraffinic mineral oils	85.5	-	-	-	Trade secret
Olefin polymer	9.5	-	-	-	-
Single wall carbon nanotubes (*)	5	C	-	-	N/A

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 : Call a poison center or a doctor if you feel unwell.

#### 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 respiratory irritation.
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.
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**5. Fire fighting measures**

Suitable extinguishing media	: Water spray, Dry powder, Foam
Unsuitable extinguishing media	: No data available
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.

**Environmental precautions**

Environmental precautions	: Avoid release to the environment.
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**Methods and Equipment for Containment and Cleaning up**

For containment	: Clean spills promptly. 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
Storage temperature	: -40 / +40 ° C

**8. Exposure controls / Personal protection equipment ►****Single wall carbon nanotubes****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>
Exposure limits (JSOH)	Severely refined paraffinic mineral oils (CAS-No 64742-62-7) TWA = 3 mg/m <sup>3</sup> (mists)

Appropriate engineering controls : Ensure good ventilation of the work station

**Protective equipment**

Personal protective equipment	: Gloves, Protective clothing, Protective goggles
Materials for protective clothing	: Wear suitable protective clothing
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment
Hand protection	: Protective gloves
Eye protection	: Safety glasses

Type	Field of application	Characteristics	Standard
Safety goggles			

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	: Viscous, Pasty
Colour	: Black
Odour	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
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. Acids. Bases.
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)

### Severely refined paraffinic mineral oils

LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: OECD Guideline 420 (Acute Oral Toxicity - Fixed Dose Method)
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Skin corrosion/irritation	: classification not possible
Serious eye damage/irritation	: classification not possible
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

### Severely refined paraffinic mineral oils

LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	≈ 1000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

### Single wall carbon nanotubes

NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight/day - OECD 422
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Aspiration hazard	: classification not possible
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<b>TUBALL MATRIX 610</b>	
Viscosity, kinematic	Not applicable
<b>Severely refined paraffinic mineral oils</b>	
Viscosity, kinematic	1.99 - 847 mm <sup>2</sup> /s Temp.: '40° C' Parameter: 'mm <sup>2</sup> /s' 'mm <sup>2</sup> /s'
<b>Single wall carbon nanotubes</b>	
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

<b>TUBALL MATRIX 610</b>	
Persistence and degradability	No data available
<b>Single wall carbon nanotubes</b>	
Not rapidly degradable	

### Bioaccumulative potential

<b>TUBALL MATRIX 610</b>	
Bioaccumulative potential	No data available

### Mobility in soil

<b>TUBALL MATRIX 610</b>	
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

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
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.

## 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**

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
WGK	Water Hazard Class
OEL	Occupational Exposure Limit
EN	European Standard
CAS-No.	Chemical Abstract Service number
IOELV	Indicative Occupational Exposure Limit Value
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
EC-No.	European Community number
N. O. S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
TLM	Median Tolerance Limit
NOAEL	No-Observed Adverse Effect Level
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PNEC	Predicted No-Effect Concentration
BLV	Biological limit value
NOEC	No-Observed Effect Concentration
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
DMEL	Derived Minimal Effect level
LD50	Median lethal dose
OECD	Organisation for Economic Co-operation and Development
DNEL	Derived-No Effect Level
IARC	International Agency for Research on Cancer
EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
PBT	Persistent Bioaccumulative Toxic
SDS	Safety Data Sheet
STP	Sewage treatment plant
ATE	Acute Toxicity Estimate

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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