

**1. Chemical product and company identification ▶**

Substance name : TUBALL MATRIX 603  
Type of product : Nanoform embedded in a matrix  
Product group : Trade product

**Recommended use of the chemical and restrictions on use ▶**

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

**Company information****Supplier**

Japan:

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**緊急電話番号**

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

**2. Hazards identification****GHS classification**

Health hazards : Serious eye damage/eye irritation  
Category 2

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 603

Name	Concentration (%)	Formula	Reference number in the gazette list		CAS-No.
			CSCL No.	ISHL No.	
Single wall carbon nanotubes*	10	C	-	-	N/A
Distillates (petroleum), solvent refined heavy paraffinic	90	Fórmula química no específica	-	-	64741-88-4

Comments : **Note L** : The harmonised classification as a carcinogen applies unless it can be shown that the substance contains less than 3 % of dimethyl sulphoxide extract as measured by IP 346 ('Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions – Dimethyl sulphoxide extraction refractive index method' Institute of Petroleum, London), in which case a classification in accordance with Title II of this Regulation shall be performed also for that hazard class.

\* 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

### 4. First aid measures

#### 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 contaminated clothing before reuse. Wash with plenty of soap and water.

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. Never give anything by mouth to an unconscious person. Get medical attention.

#### Most Important Symptoms/Effects ►

Symptoms/effects after inhalation : May cause respiratory irritation. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination.

Symptoms/effects after skin contact : Prolonged or repeated contact may cause skin to become dry. Contact during a long period may cause light irritation.

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

Symptoms/effects after ingestion : Ingestion may cause nausea and vomiting.

ingestion : Diarrhea.  
Gastrointestinal complaints.

### Notes to physician

Other medical advice or treatment : Treat symptomatically.

## 5. Fire fighting measures

Suitable extinguishing media : For large fire: Water fog, For small fire: Dry chemical, Carbon dioxide (CO<sub>2</sub>), Sand/earth, ABC-powder

Unsuitable extinguishing media : Do not use a heavy water stream

Fire hazard : Vapours may form explosive mixture with air.  
Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.  
Flash back over considerable distance.

Hazardous decomposition products in case of fire : Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases

Firefighting instructions : Prevent fire fighting water from entering the environment.

Protection during firefighting : Full face mask.  
Positive pressure self-contained breathing apparatus (SCBA).

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

#### For non-emergency personnel

Protective equipment : Wear suitable protective clothing.

Emergency procedures : Ensure adequate ventilation.  
Evacuate area.  
Avoid inhalation of vapours.  
Do not touch or walk on the spilled product.  
No open flames, no sparks, and no smoking.

#### 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 : Evacuate unnecessary personnel.  
Provide adequate ventilation.  
Avoid contact with skin and eyes.  
Avoid inhalation of vapours.  
Collect spillage.

#### Environmental precautions

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 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 : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.  
Use non-sparking tools.

## 7. Handling and storage ▶

### Handling

- Technical measures : No data available
- 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.  
To prevent thermal burns avoid contact with hot product.  
Take precautionary measures against static discharge.
- Prevents handling of incompatible substances or mixtures : No data available
- Hygiene measures : Wash contaminated clothing before reuse.  
Regular cleaning of equipment, work area and clothing.  
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.  
Gloves must be periodically inspected and changed in case of wear, perforations or contaminations.

### 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 data available
- Incompatible products : Strong oxidizing agents. Strong acids. Halogens.
- Heat and ignition sources : Keep away from open flames, hot surfaces and sources of ignition.  
No smoking.
- 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

#### 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, Gloves, Protective clothing
- Respiratory protection : Wear a respirator with Type A/P2 filter or better
- Hand protection : Chemically resistant protective gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)		≥ 0.11		
Reusable gloves					

- Eye protection : Chemical goggles or safety glasses
- Skin and body protection : Protective clothing (with elasticated cuffs and closed neck), antistatic boots

Personal protective equipment symbol(s)



Environmental exposure controls : Avoid release to the environment.

## 9. Physical and chemical properties ►

Physical state	: Solid
Appearance	: Viscous, Paste
Colour	: Black
Odour	: Slight
pH	: No data available
Melting point	: -60 - 0 (Distillates (petroleum), solvent refined heavy paraffinic)
Freezing point	: No data available
Boiling point	: 200 - 800 ° C (Distillates (petroleum), solvent refined heavy paraffinic)
Flash point	: > 98 ° C (Distillates (petroleum), solvent-refined heavy paraffinic)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: No data available
Vapour pressure	: < 0.1 hPa at 20 ° C (Distillates (petroleum), solvent refined heavy paraffinic)
Relative density	: No data available
Density	: 0.81 - 0.97 g/cm <sup>3</sup> (Distillates (petroleum), solvent refined heavy paraffinic)
Relative gas density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Explosive properties	: Not explosive.
Explosive limits (vol %)	: No data available
Oxidising properties	: Non oxidizing
Viscosity, kinematic	: 447 mm <sup>2</sup> /s (Distillates (petroleum), solvent refined heavy paraffinic)

## 10. Stability and reactivity

Reactivity	: Stable under normal conditions.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None under normal use.
Conditions to avoid	: Take precautionary measures against static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Incompatible materials	: Strong oxidizing agents. Strong acids. Halogens.
Hazardous decomposition products	: Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.

## 11. Toxicological information

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

Distillates (petroleum), solvent refined heavy paraffinic	
LD50 oral rat	> 5000 mg/l (OECD 401)
LD50 dermal rabbit	> 2000 mg/kg (OECD 402)
LC50 Inhalation - Rat	> 5000 mg/m <sup>3</sup> (OECD 403)

Skin corrosion/irritation	: No data available
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory sensitization	: No data available
Skin sensitization	: No data available
Germ cell mutagenicity	: No data available
Carcinogenicity	: No data available
Reproductive toxicity	: No data available

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 - for adverse effects on prenatal development (conceptus to birth) - OECD 422
NOAEL (animal, F1)	> 1000 mg/kg bw/day - for adverse effects on postnatal development (pup) - OECD 422

STOT-single exposure : No data available

STOT-repeated exposure : No data available

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 : No data available

## 12. Ecological information ►

### Ecotoxicity

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

### Persistence and degradability

Distillates (petroleum), solvent refined heavy paraffinic	
Biodegradation	31 % - 28 days - OECD 301B-301F

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Hazardous to the ozone layer

Ozone	: No data available
Other adverse effects	: No additional information available

## 13. Disposal considerations ►

Product/Packaging disposal : Dispose of contents/container to hazardous or special waste

recommendations	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

Industrial Safety and Health Law	: Dangerous or Harmful Substances for Labeling of Chemical Name etc. (Act Art.57 Para.1, Enforcement Order, Art.18 Item 1 and 2, Appended Table No.9 ) Dangerous or Harmful Substances for Notification of Chemical Name etc. on SDS (Act, Art.57-2, Enforcement Order, Art.18-2 Item 1 and 2, Appended Table 9) Mineral oils (Ordinance number : 168) (80 ~ 90%)
Law Relating to Prevention of Marine Pollution and Maritime Disasters	: Oily mixture (Ordinance for Enforcement, Art.2-2) Hazardous liquid substances (class X substances) and oily mixtures (Enforcement Ordinance Appendix 1 No. 1 a (81)) Harmful Liquid Substances (Group Y), (Enforcement Order, Art. Appended Table 1)
Labor Standards Act	: Carcinogenic Chemical Substances (Act, Art.75, Para.2, Enforcement Regulations, Art.35 Appended Table 1-2, Item 7) 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
ATE	Acute Toxicity Estimate
BLV	Biological limit value
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
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OEL	Occupational Exposure Limit
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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