TUBALL MATRIX 601

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 2016/12/13 Revision date: 2023/03/02 Version: 3.2

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : TUBALL MATRIX 601

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Industrial use as additive in polymers, resins and/or coatings

1.3. Supplier

USA:
OCSiAl LLC
950 Taylor Station
Road
Suite W
Gahanna, OH 43230
T +1 415 906 5271
09.00-17.00 GMT-4
usa@ocsial.com

1.4. Emergency telephone number ►

Americas : +1 202 464 2554 (English)
Americas : +1 215 207 0061 (English, Spanish, Portuguese)
Mexico : +52 55 5004 8763 (English, Spanish)
Brazil : +55 11 3197 5891 (Portuguese, English)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation, Category 2 — Causes serious eye irritation.

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Warning
Hazard statements (GHS US) : Causes serious eye irritation.
Precautionary statements (GHS US) : Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: 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.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures ►

Name	Product identifier	%	GHS US classification
Polydimethylsiloxane*	CAS-No.: Trade Secret	90	Not classified
Single wall carbon nanotubes**	CAS-No.: 7440-44-0 (Representative only)	10	Eye Irrit. 2, H319

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Comments : ** Single wall carbon nanotubes TUBALL™

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures ►

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

First-aid measures after skin contact : Take off 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 advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

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.

Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media ►

Suitable extinguishing media : Powder, Alcohol-resistant foam, Water spray, Carbon dioxide (CO2).

Unsuitable extinguishing media : None known.

5.2. Specific hazards arising from the chemical

Fire hazard : None known.

Explosion hazard : None known.

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

5.3. Special protective equipment and precautions for fire-fighters

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

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. Avoid contact with skin and eyes.

6.1.2. 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.

6.2. Environmental precautions ►

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 material for containment and cleaning up

For containment : Clean spills promptly. Ventilate affected area. Stop leak if safe to do so.

Methods for cleaning up : Collect in closed container and remove to a safe place for disposal by burning. Clear up rapidly by scoop or vacuum. Mechanically recover the product.

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

6.4. Reference to other sections ►

For further information refer to section 8: "Exposure controls/personal protection". For disposal of contaminated materials refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage ►

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing dust, fume, gas, mist, spray, vapours. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Avoid contact with skin, eyes and clothing.

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

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from sunlight. Store in dry, cool, well-ventilated area. 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/personal protection

8.1. Control parameters

Polydimethylsiloxane

No additional information available

Single wall carbon nanotubes	
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA)	1 µg/m³ (elemental carbon as a respirable mass)

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment ►

Personal protective equipment:

Safety glasses. Protective clothing. Gloves.

Hand protection:				
Chemically resistant protective gloves				
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**
Disposable gloves, Reusable gloves	Butyl rubber, Nitrile rubber (NBR)		≥ 0.11	

Eye protection:
Chemical goggles or safety glasses.

Skin and body protection:
Protective clothing (with elasticated cuffs and closed neck).

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

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties ►

Physical state	:	Solid
Appearance	:	Paste.
Colour	:	Black
Odour	:	Characteristic
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	-55 °C (Polydimethylsiloxane)
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	> 150 °C (Polydimethylsiloxane)
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability	:	No data available
Vapour pressure	:	< 0.1 hPa 20 °C (Polydimethylsiloxane)
Relative vapour density at 20°C	:	No data available
Particle size	:	See section 3.2

Particle size distribution	:	See section 3.2
Particle shape	:	See section 3.2
Particle aspect ratio	:	See section 3.2
Particle specific surface area	:	See section 3.2
Relative density	:	No data available
Density	:	0.96 g/cm³ 25 °C (Polydimethylsiloxane)
Solubility	:	Insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 250 °C (Polydimethylsiloxane)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	95 – 105 mPa.s 25 °C (Polydimethylsiloxane)
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid ►

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products ►

Thermal combustion may release carbon monoxide and dioxide.

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

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

Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Causes serious eye irritation.

Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
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 - 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	:	Not classified
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
Viscosity, kinematic	:	No data available
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.
Symptoms/effects after eye contact	:	Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - genera : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste)	:	Dispose of this material and its container at hazardous or special waste collection point.
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: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

14.6. Special precautions for user

DOT
No data available

TDG
No data available

IMDG
No data available

IATA
No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Polydimethylsiloxane	CAS-No. Trade Secret	90%

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Single wall carbon nanotubes

This product is subject to the Significant New Use Rules (SNUR) published by the United States Environmental Protection Agency

Single wall carbon nanotubes
on December 5, 2019 in Federal Register Vol. 84, No. 234.

15.2. International regulations

CANADA

Polydimethylsiloxane
Listed on the Canadian DSL (Domestic Substances List)

Single wall carbon nanotubes
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Polydimethylsiloxane
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Single wall carbon nanotubes KR
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Revision date : 2023/03/02

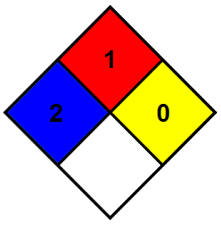
Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
WGK	Water Hazard Class
VOC	Volatile Organic Compounds
N.O.S.	Not Otherwise Specified
OEL	Occupational Exposure Limit
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
ATE	Acute Toxicity Estimate
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration

Abbreviations and acronyms	
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

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



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.

SDS US (GHS HazCom 2012) OCSIAL

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