

1. Chemical product and company identification

1.1. Product identifier

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

1.2. Recommended uses and restrictions

Use Categories

No data available

1.2.1. Recommended use

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

1.2.2. Restrictions on use

No data available

1.3. Manufacturer information

Grace Continental Korea Co., Ltd
22, Samjak-ro, Bucheon-si, Gyeonggi-do, Republic of Korea
T +82-32-328-0121

1.4. Supplier information

유럽:	미국:	아시아:	중국:	인도:
OCSiAI Europe S.a.r.l. L-3364, Leudelange, 1, rue de la Poudrerie, Grand Duchy of Luxembourg	OCSiAI LLC 500 S Front St., Suite 860, Columbus, OH 43215, USA	OCSiAI Asia Pacific Co., Ltd. Office 208, Pilot Plant Bldg., Incheon Technopark 12 Gaetbeol-ro, Yeonsu-gu, Incheon, 406-840 Republic of Korea	OCSiAI Hong Kong Limited No. 1102, 11/F, Lippo Sun Plaza, 28 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong	VIMAL INTERTRADE PVT LTD. Shivam Centrum, Sahar Road, Koldongri, Above Nexa Showroom, Andheri East, Mumbai – 400 069
T +352 27 99 03 73 09.00-17.00 GMT+2 europe@ocsial.com	T +1 415 906 5271 09.00-17.00 GMT-4 usa@ocsial.com	T +82 32 260 0407 09.00-17.00 GMT+9 asiapacific@ocsial.com	T +852 3575 3946 09:00-17:00; GMT+8 china@ocsial.com	T +91 22 6288 4200 09:00-17:00; GMT+5.5 india@ocsial.com

1.5. Emergency telephone number

EMEA	: +44 1865 407333 (English) (Carechem 24)
East/South East Asia	: +65 3158 1074 (English, Hindi, Japanese, Korean, Malay, Mandarin) (Carechem 24)
China (Mainland)	: **0532 8388 9090(English, Mandarin)

2. Hazards identification

2.1. Classification of the substance or mixture

Serious eye damage/eye irritation, Category 2

H319

2.2. Label elements

2.2.1. Hazard pictograms (GHS KR)



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2.2.2. Signal word (GHS KR)

Warning.

2.2.3. Hazard statements (GHS KR)

H319 - Causes serious eye irritation.

2.2.4. Precautionary statements (GHS KR)

Precaution:

P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Treatment:

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 - If eye irritation persists: Get medical advice/attention.

Storage:

Disposal:

2.3. Hazards - Other hazards which do not result in classification - Hazard Risk

No data available

3. Composition/information on ingredients

Product form : Mixture

Substance name	Other Names	Product identifier number	Concentration (%)
Polydimethylsiloxane	-	Trade secret	90
Single wall carbon nanotubes*	-	CAS-No.: 7782-42-5 KECI-No.: KE-18101	10

Comments : * Single wall carbon nanotubes TUBALL™.

4. First-aid measures

4.1. 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.

4.2. First-aid measures after skin contact

Wash skin with plenty of water.

4.3. First-aid measures after inhalation

Remove person to fresh air and keep comfortable for breathing.

4.4. First-aid measures after ingestion

Rinse mouth out with water.

Get medical advice/attention.

4.5. Other medical advice or treatment

Treat symptomatically.

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5. Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.
Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None known.
Explosion hazard : None known.

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.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing.
Ventilate spillage area.
Avoid contact with skin and eyes.
Do not attempt to take action without suitable protective equipment.
For further information refer to section 8: "Exposure controls/personal protection".
Provide adequate ventilation.
Evacuate area.
Avoid inhalation of vapours.
Dispose of materials or solid residues at an authorized site.

6.2. Environmental precautions and protective procedures

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

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.
Mechanically recover the product.

7. Handling and storage

7.1. Precautions for safe handling

Ensure good ventilation of the work station.
Avoid contact with skin and eyes.
Wear personal protective equipment.
Do not eat, drink or smoke when using this product.
Always wash hands after handling the product.

7.2. Conditions for safe storage

Store in a well-ventilated place.
Keep cool.
Keep away from open flames, hot surfaces and sources of ignition.
Store away from water (including sewage plant).
Keep container tightly closed.

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8. Exposure controls/personal protection

8.1. Occupational Exposure Limits

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Polydimethylsiloxane

Single wall carbon nanotubes (7782-42-5)

Japan - Occupational Exposure Limits

Exposure limits (JSOH)

【Occupational exposure limits for dusts】 (Class 1) Respirable dust
0.5mg/m3 Total dust 2mg/m3

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. Personal protection

Personal protective equipment:

Safety glasses. Protective clothing. Gloves.

Hand protection:

Protective gloves

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

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



9. Physical and chemical properties

- a) Appearance : Paste.
Physical state : Solid.
Colour : Black.
- b) Odour : Characteristic.
- c) Odour threshold : No data available

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d) pH	: No data available
e) Melting / freezing point	: / Not applicable
f) Initial boiling point and boiling range	: No data available
g) Flash point	: > 100 °C (Polydimethylsiloxane)
h) Evaporation rate	: No data available
i) Flammability (solid, gas)	: Non flammable.
j) Upper / lower flammability or explosive limits	: Not applicable
k) Vapour pressure	: No data available
l) Solubility	: No data available
m) Vapour density	: No data available
n) Relative density	: No data available
o) Partition coefficient n-octanol/water	: No data available
p) Auto-ignition temperature	: Not applicable
q) Decomposition temperature	: No data available
r) Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
s) Molecular mass	: No data available

10. Stability and reactivity

10.1. Chemical stability and Possibility of hazardous reactions

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

Stable under normal conditions.

No dangerous reactions known under normal conditions of use.

10.2. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.3. Incompatible materials

Strong oxidizing agents.

10.4. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

11.1. Information on exposure routes

Oral	: Not classified
Skin and eyes contact	: Causes serious eye irritation.
Inhalation	: Not classified

11.2. Health hazards

Acute toxicity (oral):

Not classified

Acute toxicity (dermal):

Not classified

Acute toxicity (inhalation):

Not classified

Polydimethylsiloxane

LD50 oral rat	> 5000 mg/kg
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LD50 dermal rat	> 2008 mg/kg
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Skin corrosion/irritation:

Not classified

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Serious eye damage/irritation:

Causes serious eye irritation.

Respiratory sensitization:

Not classified

Skin sensitization:

Not classified

Carcinogenicity:

Not classified

Mutagenicity:

Not classified

Reproductive toxicity:

Not classified

STOT-single exposure:

Not classified

STOT-repeated exposure:

Not classified

Single wall carbon nanotubes (7782-42-5)

NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight/day - OECD 422
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Aspiration hazard:

Not classified

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Viscosity, kinematic	Not applicable
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Single wall carbon nanotubes (7782-42-5)

Viscosity, kinematic (calculated value) (40 °C)	Not applicable
Density	1.78 g/cm ³ Type: 'density' Temp.: 25 °C
Viscosity, kinematic	Not applicable

12. Ecological information

12.1. 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) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

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12.5. Other adverse effects

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

13. Disposal considerations

13.1. Disposal method

Dispose of this material and its container at hazardous or special waste collection point.
Dispose of contents/container in accordance with licensed collector's sorting instructions.

13.2. Disposal precaution

Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Prevent entry to sewers and public waters.
Clean up even minor leaks or spills if possible without unnecessary risk.

14. Transport information

UN RTDG	ADR	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. UN 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
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Marine pollutant			
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

No data available

15. Regulatory information

15.1. Occupational Safety and Health Act

Hazardous Substances Prohibited for Manufacturing	Not applicable
Hazardous Substances Requiring Permission	Not applicable
Threshold Limit Values Chemicals	Not applicable
Hazardous Substances Below Permissible Level	Not applicable
Hazardous Substances Subject to Working	Not applicable
Environment Measurement	
Hazardous Substances Subject to Workers Requiring Health Examination	Not applicable
Hazardous Substances Subject to Control	Not applicable

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15.2. Chemicals Control Act

Toxic Chemicals	Not applicable
Prohibited Chemicals	Not applicable
Restricted Chemicals	Not applicable
Substance requiring preparation for accidents	Not applicable

15.3. ACT ON REGISTRATION, EVALUATION, ETC. OF CHEMICALS (K-REACH)

Korea Existing Chemicals Inventory (KECI)	Polydimethylsiloxane KECI-No. : KE-18101. Graphite -> Single wall carbon nanotubes. Listing of country or region list name (yes/no) * Korea Inventory of Existing Chemicals (ECL) Yes **Yes* indicates that all ingredients in this product comply with the inventory requirements of the country(s) Indicates that there is no exemption.
Priority Existing Chemical ('PEC') – subject to registration	Not applicable
Priority Control Substances (Korea)	Not applicable
CMR Substances (Korea)	Not applicable

15.4. Safety Control of Dangerous Substances Act

Safety Control of Dangerous Substances Act

15.5. Wastes Control Act

Wastes Control Act

15.6. Other Domestic and International Regulatory Information

Domestic

Persistent Organic Pollutants(POPs) Control Act	Not applicable
Ozone Depleting Substances(ODS)	Not applicable

International

EU Regulatory Information

EU Candidate list (SVHC)	Contains no substance on the REACH candidate list
EU authorization list (REACH Annex XIV)	Contains no REACH Annex XIV substances
EU restriction list (REACH Annex XVII)	Not applicable

US Regulatory Information

CERCLA Section 103 (40CFR302.4)	Not applicable
EPCRA Section 302 (40CFR355.30)	Not applicable
EPCRA Section 304 (40CFR355.40)	Not applicable
EPCRA Section 313 (40CFR372.65)	Not applicable

International agreements

No data available

16. Other information

16.1. Data sources:	No data available
16.2. Issue date:	01/06/2021
16.3. Revision number and date:	1.0, 01/06/2021
16.4. Other information:	No data available
16.5. Indication of changes:	See bold triangle '►'

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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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
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
DIRM	Mass-based Dustiness Index

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