

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifier

Product Name	TANSOME Carbon Fiber
Synonyms	None
Product Type	H2550-6K, H2550-12K, H2550-24K, H3055-12K

1.2 Recommended use of the product and restrictions on use

Recommended Uses	Industrial applications including carbon fiber reinforced composites
Restrictions on Use	N/A

1.3 Details of the Manufacturer

Company	Hyosung Corporation
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Phone	+82-63-281-5480
Home Page	www.hyosung.com
Contact	khlee2@hyosung.com

2. HAZARDS IDENTIFICATION

2.1 Hazard-Risk Classification	Not classified
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2.2 Label elements including precautionary statements

Symbol	None
Signal Word	None
Hazard Statement	None
Precautionary statements Prevention	see section 8.2 Personal protective equipment.
Response	None
Storage	See Section 7. Handling and storage
Disposal	Dispose of contents/containers in accordance with local/regional/national/international regulations.

2.3 Other Hazards	Mechanical processing for this material may produce dust and broken filament. This cause a temporary irritation of the skin. Also, this product and its dusts are electrically conductive.
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HMIS Rating

	Health	Flammability	Reactivity
Carbon Fiber	1	0	0
Sizing agent	1	1	0

※ Minimal : 0, Slight : 1, Moderate : 2, Serious : 3, Severe : 4

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	Composition, % by weight	CAS No.	TSCA
Carbon Fiber	≥ 98.0%	7440-44-0	Registered
Sizing agent	≤ 2.0%	Trade Secret	Registered

4. FIRST AID MEASURES

4.1 Eye contact

Immediately wash eyes with plenty of water for at least 15 minutes and if irritation persists or allergic reaction occurs, consult a medical physician.

4.2 Skin contact

Immediately wash skin with plenty of water and soap. To avoid further irritation, do not rub or scratch irritated skin. If irritation persists or allergic reaction occurs, consult a medical physician.

4.3 Inhalation

Evacuate from the dusty contaminated and remove to fresh air. If breathing continues to be difficult, get medical attention.

4.4 Ingestion

In the event of deliberate ingestion, do not induce vomiting unless directed to do so by consulting with a doctor.

4.5 Indication of immediate medical attention and notes for physician

Carbon fiber is inert, but it is so sharp and strong that it may cause physical injury.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

use water mist, foam, dry powder

Unsuitable extinguishing media

dependent on processing plant conditions

5.2 Specific hazards arising from the chemical

In case of fire hazardous decomposition such as CO, CO₂, N₂, HCN occurs.

5.3 Special protective equipment and precautions for fire-fighters

Fire fighters should wear suitable protection and avoid exposure from the gas, carbon monoxide using a self-contained, positive pressure breathing apparatus (SCBA).

Fight fires from a safe distance or protected areas.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedure

N/A

6.2 Environmental precautions and protective procedure

N/A

6.3 Methods and materials for containment and cleaning up

In case of spill, collect the spilled materials. If the material is not contaminated, put it into a clean container and it can be reused. Otherwise, dispose of it properly. Because the fiber and dust is electrically conductive and may become airborne, clean up with a vacuum.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

At all stages of processing and handling, make sure that airborne fiber dust and broken filaments are extracted with adequate ventilation, as to minimize skin irritation, electrical malfunction to machinery, electronics, etc.

Avoid skin contact by using appropriate protective equipment such as safety glasses, gloves, clothing.

7.2 Conditions for safe storage

Store in a cool, dry place and maintain sealed against contamination. Do not store together with oxidizing agents.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1 Exposure standards for chemicals, biological exposure standards, etc.

- | | |
|--|-----|
| <input type="radio"/> Domestic exposure standard | N/A |
| <input type="radio"/> ACGIH exposure standard | N/A |
| <input type="radio"/> Biological exposure standard | N/A |

8.2 Appropriate engineering controls

Local exhaust for fiber dust removal.

8.3 Personal Protective Equipment

Respiratory protection

Overall, no breathing apparatus is needed. However, if the dust concentration in the atmosphere increases, use an approved dust respirator.

Eye protection

Wear safety glasses with side shields

Hands protection

Wear protective gloves

Body protection

Recommend disposal protective cloths to prevent the transfer of dust

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance

Black fiber(Solid)

Odor

Odorless

Odor threshold

N/A

pH

None

Melting point/freezing point

3,500°C

Initial boiling point and boiling range

None

Flash point

None

Evaporation rate

None

Flammability (solid, gas)

N/A

Upper/lower flammability or explosive limits

N/A

Vapor pressure

N/A

Solubility

insoluble (water and others)

Vapor density

N/A

Specific gravity (relative density)

1.7 ~ 2.0 g/cm³

Partition coefficient (n-octanol/water)

N/A

Auto-ignition temperature

N/A

Decomposition temperature (in air)

Sizing agent : 160 °C
Carbon fiber : 700 °C

Viscosity

N/A

Molecular mass

N/A

10. STABILITY & REACTIVITY

10.1 Chemical Stability

Stable under the normal condition for transfer and storage

10.2 Possibility of hazardous reactions

Can react with strong oxidizing agents

10.3 Condition to avoid

See section 7.2

10.4 Incompatible materials

See section 10.2

10.5 Hazardous decomposition product See section 5.2

11. TOXICOLOGICAL INFORMATION

11.1 Information on the likely routes of exposure

Acute toxicity	N/A
Respiratory	N/A
Oral	N/A
Eyes or skin	N/A
Skin contact	N/A

11.2 Health hazards information

Acute toxic	N/A
Skin corrosive / irritant	N/A
Serious eye damage / eye irritation	N/A
Respiratory sensitization	N/A
Skin sensitization	May cause an allergic skin reaction
Carcinogenicity	N/A
Germ cell mutagenicity	N/A
Reproductive toxicity	N/A
Specific target organ toxicity (single exposure)	N/A
Specific target organ toxicity (repeated exposure)	N/A
Aspiration hazard	N/A
Other harmful effects	N/A

12. ECOLOGICAL INFORMATION

12.1 Aquatic and terrestrial ecotoxicity	N/A
12.2 Persistence and degradability	N/A
12.3 Bioaccumulative potential	N/A
12.4 Mobility in soil	N/A
12.5 Other adverse effects	N/A

13. DISPOSAL CONSIDERATIONS

13.1 Disposal Method Waste materials must be disposed in accordance with applicable local/regional/national/international regulations.

14. TRANSPORT INFORMATION

14.1 UN number None

14.2 UN proper shipping name

Not classified as a dangerous goods

ADR (The European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID (The European Agreement concerning the International Carriage of Dangerous Goods by Rail)

IMDG (International Maritime Dangerous Goods)

IATA (International Air Transport Association)

DOT (US Department of Transportation)

14.3 Transport hazard class

None (see section 14.2)

14.4 Packing group

None (see section 14.2)

14.5 Marine pollution

N/A

14.6 Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises

See section 6 to 8

15. REGULATORY INFORMATION

15.1 Regulations under the Industrial Safety and Health Act

Measuring material for working environment

None

Exposure standard setting substance

None

Toxic substances to be controlled

None

Special health checkup

None

Process Safety Report (PSM) Substances subject to submission

None

15.2 Regulations under the Chemical Substance Control Act

Toxic

None

Observation

None

Emissions subject chemical substances

None

Accidental Materials

None

Restricted Substances

None

15.3 Regulations under the Dangerous Goods Safety Management Act

15.4 Regulation by Waste Management Act

15.5 Other domestic and foreign regulations

○ Domestic regulations

- **Persistent Organic Pollutant Control Act** None
- **Canada management information** None
- **US management information** TSCA Carbon fiber, 7440-44-0
OSHA None

This product is not classified as a toxic chemical or hazardous material. No special warning label is required.

TSCA (US) Carbon fiber, 7440-44-0

EINECS	N/A
WHMIS (Canada)	N/A
CAS	7440-44-0
OSHA	N/A
SARA TITLE III	None

16. OTHER INFORMATION

16.1 Source of data	N/A
16.2 Initial Date	2013
16.3 Number of revisions and the date of the last revision	Second
Revision date	23 January, 2018
Previous revision	11 February, 2016

16.4 Others

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