

Material Safety Data Sheet

1. Chemical Product and company Identification

Product name: TGP-H

Name of supplier: Toray Industries, Inc.

Address: 2-1, Nihonbashi-Muromachi 2-Chome, Chuo-ku Tokyo Japan

Sales Department: Advanced Composites Dept

Telephone number: +81-3-3245-5731

Fax number: +81-3-3245-5719

Technical Department: Composites Fabrication Dept.

Product No. (MSDS No.): 12E-B008-1

2. Composition/Information on Ingredients

Chemical Name: Carbon Fiber Reinforced Carbon Composite

Synonyms: Porous C/C Sheet (CAS No. 194242-96-1)

Substance/Mixture: Mixture

Common chemical name: Carbon Fiber

Chemical formula (Constitutional/Structural formula): C

CAS No.: 7440-44-0

TSCA: Regd.

Common chemical name: Carbonized Resin (Graphitized Resin)

Chemical formula (Constitutional/Structural formula): C

CAS No.: 7440-44-0

TSCA: Regd.

Components contributing to the hazard: No information found.

Ingredients contributing to the hazard: No information found

Note: No information found.

3. Hazards Identification

Summary of most important information on hazards: No information found.

Adverse human health effects:

R36-Irritating to eyes.

R37-Irritating to respiratory system.

R38-Irritating to skin.

May cause rash or external ulcers.

Environmental effects:

When TGP-H is broken, short carbon fibers and carbon particles may be produced. These particles may cause short circuits of electrical apparatus.

Physical and Chemical hazards: Flammable

Specific danger hazard: No information found.

4. First-Aid Measure

Inhalation:

In case of accident or if you feel ill, seek medical advice immediately (show this Material Safety Data Sheet where possible).

Skin contact:

S28-After contact with skin, wash immediately with plenty of water
Clean up exposed skin with adhesive tape.

Eye contact:

Gently rinse the affected eyes with clean water for at least 15 minutes.
Arrange for transport to the nearest medical facility for examination and

treatment by a physician as soon as possible.
Have the victim remove contact lenses if he is wearing them and continue rinsing.
Do not let the victim rub his eyes.

Ingestion:

If swallowed, seek medical advice immediately and show this Material Safety Data Sheet.

5. Fire-Fighting Measures

Extinguishing Media:

S43-In case of fire, use water mist, foam, dry powder, CO₂

Specific Hazards with regard to Fire-Fighting Measures:

When TGP-H is burned, short carbon fiber and carbon particles may be produced. They may cause short circuits of electrical apparatus.

6. Accidental Release Measures

Measures for Handling Personnel: No information found.

Measures for environmental effects: No information found.

Measures when handling spilled substances: Sweep up, place in a bag and hold for waste disposal. Avoid raising dust.

7. Handling and Storage

Handling:

Preventive measures:

Exposure control for handling personnel:

S20- When using do not eat or drink

S22-Do not breathe dust.

S24-Avoid contact with skin.

S25-Avoid contact with eyes

Practice good personal hygiene after using this material, especially before eating, drinking, smoking or using the toilet.

Safety treatments: Prevent deposition of dust.

Storage:

Recommendation for storage:

S2-Keep out of the reach of children

S4-Keep away from living quarters.

8. Exposure Control/Personal Protection

Engineering measures:

It is desirable to use adequate ventilation to prevent trouble caused by electro-conductive airborne particles. The ventilation should not exhaust airborne particles to environment.

Adopted value: ACGIH (2001)

Particulates Not Otherwise Classified:

3mg/m³ (Respirable Particle)

10mg/m³ (Inhalable Particle)

Personal protective equipment:

Respiratory protection: If dust is generated and ventilation is inadequate, use protective mask.

Hand protection: S37-Wear suitable gloves.

Eye Protection: Wear protective eyeglasses or chemical safety goggles.

9. Physical and Chemical Properties

Physical properties:

Appearance: solid

Color: Black
Odor: None
pH: Not surveyed
Phase change temperature:
Boiling point: None
Melting point: None
Flash point: Not Surveyed
Ignition temperature: Not surveyed
Explosion: Not Surveyed
Vapor pressure: None
Vapor density: None
Density: 0.3-0.6
Solubility in solvent:
 water: not soluble
 others: not soluble
Others: electro-conductive

10. Stability and Reactivity

Stability: This product is considered a stable material under normal and anticipated storage and handling conditions.

Reactivity-

Flammability: flammable (solid)

Decomposition products: No information found

11. Toxicological Information

Acute toxicity: No information found

Effects on skin, eyes and others: May cause irritation

Allergenic and/or sensitizing effects: May cause itching

Chronic and/or long term toxicity: No information found.

Carcinogenic effects: No information found.

Mutagenic effects: No information found.

Teratogenic effects: No information found.

Others: No information found.

12. Ecological Information

Biotransportability: No information found

Biodegradability: No information found.

Bioaccumulation: No information found.

Ecological toxicity: No information found.

Fish toxicity: No information found.

Others: No information found.

13. Disposal Consideration

Place in sealed plastics. Bury in designated ground in accordance with local and national regulations. Do not incinerate it. Incineration may generate electro-conductive airborne particles.

14. Transport Information

International guide line: No information found.

Specific safety measures and conditions on transport: No special care required for transportation.

15. Regulatory Information

TSCA(USA) No.

7440-44-0

7782-42-5

EINECS No.

231-153-3

CAS

7440-44-0

7782-42-5

Other regulatory information:

Ensure this material is in compliance with federal requirements and ensure conformance to local regulations.

16. Other Information/References

To the best of our knowledge, the information contained herein is accurate. However, we assume no liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. The information contained in this date sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. Users are advised to make their own tests to determine the safety and suitability of each such product or combination for their own purposes.

References:

MSDS of Raw Materials. Carbon Fiber "TORAYCA"
"Handbook of MSDA< (2001)", Japan Chemical Industry Association
"International Chemical Safety Cards (ICSC), (1994), International Program on Chemical Safety 1994
"Handbook of Existing & New Chemical Substances, (1991)", The Chemical Daily Co, Ltd.
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"The Sigma-Aldrich Library of Chemical Safety Data, (1998)", Sigma-Aldrich Corporation
"Chemical Substances & Japanese Regulations, (1992)", The Chemical Daily Co, Ltd.
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"Toxic Substances Control Act Chemical Substances Inventory", U.S. Environmental Protection Agency
"EINECS-European Inventory of Existing Commercial Chemical Substances", Commission of the European communities
"Commission Directive 93/21/EEC, (1996)", ANNEX I,II,III,IV