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 data 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  
“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  