1. PRODUCT AND COMPANY IDENTIFICATION
   Product Name: Ultrafoam™ Reticulated Vitreous Carbon Foam

   Supplier: Ultramet
   12173 Montague St, Pacoima California 91331
   Telephone: +1 818-899-0236   Fax: +1- 818-890-1946
   www.ultramet.com

2. HAZARDS IDENTIFICATION

   Emergency Overview
   OSHA Hazards Irritant

   GHS Classification
   This substance is not classified according to the Global Harmonized System

   Signal word Warning

   Hazard statement(s)
   None

   HMIS Classification
   Health hazard: 0
   Flammability: 0
   Physical hazards: 0

   NFPA Rating
   Health Hazard: 0
   Fire: 0
   Reactivity: 0

   Potential Health Effects
   Inhalation May be harmful if inhaled. Small graphite fibers, powders or dust are suspected as being possible inhalation hazards. Causes respiratory tract irritation.
   Skin May be harmful if absorbed through skin. Causes skin irritation.
   Eyes Causes eye irritation.
   Ingestion: May be harmful if swallowed.
Chronic Exposure: A review of the literature does not show obvious long term hazard.

Contains no ingredients now known to be hazardous by OSHA. The normal cutting of the fiber, rod or carbon mount, either with scissors, razor blade or other machining is suspected of generating small amounts of possibly respirable fibers or dust. We believe that such cutting or working with powder should be done in a ventilated hood facility.


### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS no.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>7440-44-0</td>
<td>100%</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**
If large amounts of the dust are inhaled, move the exposed person to fresh air at once. If symptoms persist contact physician.

**In case of skin contact**
Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes. Generally not a skin irritant. Consult a physician if needed.

**In case of eye contact**
In case of contact, immediately flush eyes with copious amounts of flowing water for at least 15 minutes, retracting eye lids often. Get medical attention immediately. Contact lenses should not be worn when working with this product.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 5. FIREFIGHTING MEASURES

**Suitable extinguishing media**
Carbon dioxide, extinguishing powder or water spray. For large fires use water spray or alcohol-resistant foam.

**Special protective equipment for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions include carbon dioxide and carbon monoxide.

**Further information**
Use water spray to cool unopened containers.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains or into the environment without proper governmental permits.

**Methods and materials for containment and cleaning up**
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

**Precautions for safe handling**
Keep away from incompatible materials.

**Conditions for safe storage**
Store in a cool, dry place. Keep container tightly sealed in a well-ventilated area.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameter</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite</td>
<td>7762-42-5</td>
<td>TWA</td>
<td>$15$ Million particles per cubic foot</td>
<td>USA, Occupational Exposure Limits (OSHA) - Table 2-3 Mineral Dusts</td>
</tr>
</tbody>
</table>

**Remarks**
Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques. $\text{nmpcf} \times 35.3 = \text{million particles per cubic meter} = \text{particles per c.c.}$

<table>
<thead>
<tr>
<th>TWA</th>
<th>USA, NIOSH Recommended Exposure Limits</th>
</tr>
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</table>

Also see specific listing for Graphite (synthetic).

<table>
<thead>
<tr>
<th>TWA</th>
<th>USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</th>
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</table>

**Pneumoconiosis**

| TWA | USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |

**Personal protective equipment**

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 or ANSI 87.1. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Flame retardant antistatic protective clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form: Solid
Color: Dark gray

Safety data
pH no data available
Melting point/range: 3650 °C
Boiling point: 4826.6 °C
Flash point: no data available
Flammability (solid, gas): no data available
Ignition temperature: no data available
Auto-ignition temperature: 450 °C (842 °F)
Resistivity: 1375 μΩ-cm20°C (graphite)
Lower explosion limit: no data available
Upper explosion limit: no data available
Vapor pressure: <0.1 mmHg (20 °C)
Density: 1.4-1.5 g/cm3
Water solubility: insoluble
Partition coefficient: n-octanol/water: no data available
Relative vapor density: no data available
Odor: odorless
10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available.

Conditions to avoid: Heat, flames and sparks avoid heating above 290° C. Extremes of temperature and direct sunlight.

Materials to avoid
Strong oxidizing agents, Strong acids

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions: carbon monoxide, carbon dioxide
Other decomposition products: no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
> 5 gm/kg (dog)
> 5 gm/kg (mouse)
> 5 gm/kg (rat)

Inhalation LC50: no data available

Dermal LD50: no data available

Other information on acute toxicity:
Human experience: Graphite causes benign pneumoconiosis (graphitosis). Symptoms of pneumoconiosis from graphite exposure are Dyspnea, coughing, black sputum, bronchitis, ventricular hypertrophy and impairment of pulmonary function. X-rays will show progressive noduleation of the lungs. The threshold limit value was set in conformity with the limit for free crystalline silica, which may be present in graphite.

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity
IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** post-implantation mortality has occurred in laboratory animals.

**Teratogenicity:** no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System):** no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System):** no data available

**Aspiration hazard:** no data available

**Potential health effects**

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion** May be harmful if swallowed.

**Skin** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation and conjunctivitis and corneal damage.

**Signs and Symptoms of Exposure** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic affects** no data available

**Chronic Effects:** A review of the literature does not show obvious long term hazard.

**12. ECOLOGICAL INFORMATION**

**Toxicity:** no data available

**Persistence and degradability:** no data available

**Bioaccumulative potential:** no data available

**Mobility in soil:** no data available

**PBT and vPvB assessment:** no data available

**Other adverse affects:** no data available
13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Consult federal, state and local governmental regulations for proper disposal.

RCRA 40 CFR 261 Classification: This product as purchased does not fall under current US EPA (Environmental Protection Agency) RCRA definitions of hazardous waste.

Contaminated packaging: Dispose of as unused product.

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards: Irritant

SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 311/312.

Massachusetts Right To Know
Graphite Cas # 7782-42-5

Pennsylvania Right To Know Components
Graphite Cas # 7782-42-5

New Jersey Right To Know Components
Graphite Cas # 7782-42-5

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
**TSCA:** All components of this product are listed on the Toxic Substance Control Act (TSCA) Section 8(b) Chemical Inventory.

**CERCLA:** This product does not contain any CERCLA regulated materials.

### 16. OTHER INFORMATION

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.