Section 1: Identification of the substance/mixture and of the company/undertaking

Product identifier - Graphite Product of various grades
Trade name of the Substance
Identification Number - 7782-42-5
Registration number
Synonyms – None
SDS number
Date of first issue – Feb 21, 2011
Version number - 02
Revision date – May 28, 2015
Supersedes date - Feb 21, 2011

Relevant identified uses of the substance or mixture and uses advised against
Identified uses - Conductive polymers/friction materials/lubricants
Uses advised against - None known

Details of the supplier of the safety data sheet
Supplier & Manufacturer - Company’s Name                       HEG Limited
Company’s Street                       NH- 12
Company’s City                       Mandideep (Bhopal)
Company’s State                       Madhya Pradesh
Company’s Country                   India
Company’s Pin Code                462046
Company’s Telephone No.       91 - 07480 - 233524

Section 2: Hazards identification

Hazard summary
Physical hazards - Not classified for physical hazards
Specific hazards – May get cut from the sharp edge of the electrode (socket circumference). If any part of body gets pressed against the sharp edge, injury may occur

Precautionary Measures:
- Use proper hand gloves while handling
- Floor of the storage area must be anti-skid

Health hazards - Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects

Environmental hazards - Not classified for hazards to the environment

Specific hazards –
Processing may generate graphite dusts and fumes with the below listed potential health effects. Dust and fumes generated from the material can enter the body by inhalation. High concentrations of dust and fumes may irritate the throat and respiratory system and cause coughing. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Dust may irritate the eyes. Dust may irritate skin. Ingestion of dusts generated during working operations may cause nausea and vomiting. Prolonged
and repeated overexposure to dust can lead to pneumoconiosis. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite dusts.

**Main symptoms** - Exposed may experience eye tearing, redness, and discomfort. Prolonged skin contact may cause temporary irritation.

**Label elements** -
- Label according to Regulation (EC) No. 1272/2008 as amended
- Identification Number - 7782-42-5
- Authorisation number -
- **Hazard statements** - The substance does not meet the criteria for classification

**Precautionary statements**

**Prevention** - Observe good industrial hygiene practices.
**Response** - Wash skin with soap and water
**Storage** - Store away from incompatible materials
**Disposal** - Dispose of contents/container in accordance with local/regional/national/international regulations

**Supplemental label information** - Not applicable
**Other hazards** - The material may form dust and can accumulate electrostatic charges, which may cause an electrical spark (ignition source).

**Section 3: Composition/information on ingredients**

**Chemical name** – Synthetic Graphite

**Degree of purity** – 99.5 % (w/w) Carbon
**Sulphur** – About 0.06 %

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Typical Concentration</th>
<th>Concentration Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite</td>
<td>&gt; 99.0% (w/w)</td>
<td>&gt;98.0 - &lt;= 100.0 % (w/w)</td>
</tr>
</tbody>
</table>

**Section 4: First aid measures**

**Description of first aid measures**

**Skin cut**
- Wash the cut area with iodine. Apply Beadine & bandage properly

**Inhalation**
- Move injured person into fresh air and keep person calm under observation. For breathing
difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Get medical attention. In case of persistent throat irritation or coughing seek medical attention and take along these instructions.

**Skin contact**
- Wash with soap and water. If skin irritation or an allergic skin reaction develops, get medical attention

**Eye contact**
- Flush thoroughly with water for at least 15 minutes. Do not rub eye. If irritation occurs, get medical assistance

**Ingestion**
- Rinse mouth thoroughly. Get medical attention if any discomfort occurs

**Most important symptoms and effects, both acute and delayed**
- Dusts may irritate the respiratory tract, skin and eyes

**Indication of any immediate medical attention and special treatment needed**
- Treat symptomatically

### Section 5: Firefighting measures

**General fire hazards**
- Bulk material is non-combustible.

**Extinguishing media**
- Dust: Extinguish with foam, carbon dioxide, dry powder or water fog.

**Suitable extinguishing Media**
- None.

**Special hazards arising from the substance or mixture**
- Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterized

**Advice for firefighters**

**Special protective equipment for firefighters**
- Use standard firefighting procedures and consider the hazards of other involved materials.

**Special firefighting Procedures**
- Self-contained breathing apparatus and full protective clothing must be worn in case of fire

### Section 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**
- Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes.
- Remove sources of ignition. Wear suitable protective clothing and gloves. See Section 8 for personal protective equipment.
For emergency responders
Use personal protection recommended in Section 8 of the SDS.

Environmental precautions
Do not allow material to enter storm or sanitary sewers, groundwater or soil.

Methods and material for containment and cleaning up
Collect dust using a vacuum cleaner equipped with HEPA filter. If not possible, gently moisten dust before it is collected with shovel, broom or the like. Collect in approved containers and seal securely. Containers must be labeled. For waste disposal, see section 13.

Reference to other sections
For personal protection, see Section 8. For waste disposal, see Section 13.

Section 7: Handling and storage

Precautions for safe handling
Use work methods which minimise dust production. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Take precautionary measures against static discharges when there is a risk of dust explosion. Keep away from heat, spark, open flames and other sources of ignition. Use explosion-proof electrical equipment if airborne dust levels are high. Observe good industrial hygiene practices.

Conditions for safe storage,
Store in closed original container in a dry place.

including any incompatibilities
Specific end use(s) Not available.

Section 8: Exposure controls/personal protection

Control parameters
Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic Graphite (7782-42-5)</td>
<td>TLV&amp;PEL</td>
<td>10mg/m³ and 15mg/m³ respectively</td>
<td>Inhalable dust</td>
</tr>
</tbody>
</table>
Section 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Biological limit values</th>
<th>No biological exposure limits noted for the ingredient(s).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended monitoring procedures</td>
<td>Follow standard monitoring procedures.</td>
</tr>
<tr>
<td>DNEL</td>
<td>Not available</td>
</tr>
<tr>
<td>PNEC</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**Exposure controls**

**Appropriate engineering controls**

Provide adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required. Provide explosion-proof ventilation for high dust concentrations. Observe occupational exposure limits and minimise the risk of inhalation of dust and fumes. Provide access to washing facilities including soap, skin cleanser and fatty cream.

**Individual protection measures, such as personal protective equipment**

**General information**

Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Make sure to provide adequate control by applying the "COSH Essentials" procedure.

**Eye/face protection**

Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection**

Wear suitable protective gloves to prevent cuts and abrasions. Suitable gloves can be recommended by the glove supplier.

**Other**

Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Respiratory protection**

Use specified dust masks. Seek advice from local supervisor.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls**

Environmental manager must be informed of all significant spillages.
Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Form</td>
<td>Powder</td>
</tr>
<tr>
<td>Colour</td>
<td>Black</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>&gt;2760 °C (&gt;5000 °F)</td>
</tr>
<tr>
<td>Boiling point, initial boiling point and boiling range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability limit-lower (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability limit-upper (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>2.00 (approx.)</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Bulk density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Percent volatile</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Other information</td>
<td>No relevant additional information available.</td>
</tr>
</tbody>
</table>

Section 10: Stability and reactivity

- **Reactivity**: Stable at normal conditions
- **Chemical stability**: Material is stable under normal conditions
- **Possibility of hazardous reactions**: Will not occur
- **Conditions to avoid**: Dust is combustible, avoid sources of ignition and strong oxidizing agents.
- **Incompatible materials**: Strong oxidising agents.
- **Hazardous decomposition products**: Carbon oxides. Unidentified organic compounds

Section 11: Toxicological information
General information

Processing may generate graphite dusts and fumes with the below listed potential health effects.

Information on likely routes of exposure

Ingestion

However, ingestion of dusts generated during working operations may cause nausea and vomiting.

Inhalation

High concentrations of dust may irritate throat and respiratory system and cause coughing. Prolonged and repeated overexposure to dust can lead to pneumoconiosis.

Skin contact

Dust may irritate skin. May cause irritation through mechanical abrasion.

Eye contact

Dust may irritate the eyes.

Symptoms

Exposed may experience eye tearing, redness, and discomfort. Exposed may experience itching and redness, Nausea or vomiting.

Information on toxicological effects

Acute toxicity

Dust and fumes generated from the material can enter the body by inhalation. High concentrations of dust may irritate throat and respiratory system and cause coughing. Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Ingestion of dusts generated during working operations may cause nausea and vomiting. May cause irritation through mechanical abrasion.

Skin corrosion/irritation

Dust may irritate skin.

Serious eye damage/eye irritation

Dust may irritate the eyes.

Respiratory sensitization

No data available.

Skin sensitization

Not a skin sensitizer.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity – repeated exposure

No data available.

Aspiration hazard

Not classified.
Mixture versus substance information  Not available.

Other information  Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite dusts.

Section 12: Ecological information

Toxicity  No toxicity data noted for the ingredient(s).

Persistence and degradability  The degradability of the product has not been stated.

Bioaccumulative potential  No data available on bioaccumulation

Mobility  Not available.

Environmental fate – partition coefficient  Not available.

Mobility in soil  Not available.

Results of PBT and vPvB assessment  Not available.

Other adverse effects  The product is not expected to be hazardous to the environment.

Section 12: Ecological information
Waste treatment methods

Residual waste  Not available

Contaminated packaging  Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and reclaim or recycle, if practical.

Section 14: Transport information

ADR  The product is not covered by international regulation on the transport of dangerous goods.

RID  The product is not covered by international regulation on the transport of dangerous goods.

AND  The product is not covered by international regulation on the transport of dangerous goods.

IATA  The product is not covered by international regulation on the transport of dangerous goods.

IMDG  The product is not covered by international regulation on the transport of dangerous goods.

Transport in bulk according to  No information available.

Section 15: Regulatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture

**EU Regulations**

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I
Not listed

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II
Not listed

Not listed

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1
Not listed

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V
Not listed.

Directive 96/61/EC concerning Integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER)
Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List
Not listed.

**National regulations**
Safety data sheet available for professional user on request

**Chemical safety assessment**
No Chemical Safety Assessment has been carried out.

**Section 16: Other information**

National Fire Protection Association (NFPA):

![Flammability Diagram]

![Health Diagram]

![Instability Diagram]
References taken from MSDS of other manufacturers like GRAFTECH International.

ACGIH Threshold Limit Values for Chemical Substances, current addition OSHA 29 CFR 1910 1000
NIOSH Occupational Health Guidelines

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