**SAFETY DATA SHEET**

1. **Identification**

   **Product identifier**
   GrafGuard® Expandable Graphite

   **Other means of identification**
   - **SDS number**: 0067

   **Recommended use**: Fire retardant material.

   **Recommended restrictions**: None known.

   **Manufacturer/Importer/Supplier/Distributor information**
   - NeoGraf Solutions, LLC
   - Manufacturer/Supplier
   - 11709 Madison Ave.
   - Lakewood, OH 44107
   - +1 216-529-3777
   - Contact person: Product Responsibility Manager +1 216-529-3724
   - E-mail: info@neograf.com
   - Emergency telephone number: For Chemical Emergency ONLY, call 3E at:
     - +1-866-519-4752, +1-760-476-3962
     - Access Code: 333366

2. **Hazard identification**

   **Physical hazards**: Not classified.

   **Health hazards**: Not classified.

   **Label elements**
   - **Hazard symbol**: None.
   - **Signal word**: None.
   - **Hazard statement**: The mixture does not meet the criteria for classification.

   **Precautionary statement**
   - **Prevention**: Observe good industrial hygiene practices.
   - **Response**: Wash hands after handling.
   - **Storage**: Store away from incompatible materials.
   - **Disposal**: Dispose of waste and residues in accordance with local authority requirements.

   **Other hazards**: Expandable graphite may contain impurities of crystalline silica (quartz CAS 14808-60-7) which is listed by IARC as Group 1 carcinogen and by ACGIH as A2 (suspected human carcinogen).

   **Supplemental information**: None.

3. **Composition/information on ingredients**

   **Mixtures**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphuric acid, compound with graphite</td>
<td>12777-87-6</td>
<td>&gt; 93</td>
<td></td>
</tr>
<tr>
<td>Natural Impurities*</td>
<td>Not available</td>
<td>&lt; 5</td>
<td></td>
</tr>
</tbody>
</table>

**GrafGuard® Expandable Graphite**

SDS Canada

943399 Version #: 04 Revision date: 25-June-2020 Issue date: 25-June-2020
Third-party analysis found that any naturally occurring Respirable Crystalline Silica (RCS) that may exist as an impurity in this substance is inextricably bound, environmentally unavailable and at de minimis concentration. Thus, in its current and anticipated future physical state, the substance is incapable of causing toxicologically relevant RCS exposure under either normal conditions of use or in case of extreme upset.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Rinse with water. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed
Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>ACGIH Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphuric acid, compound with graphite (CAS 12777-87-6)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Inhalable particles.</td>
</tr>
</tbody>
</table>
Canada - Alberta
Components | Type | Value | Form
--- | --- | --- | ---
Sulphuric acid, compound with graphite (CAS 12777-87-6) | TWA | 3 mg/m³ | Respirable

Canada - British Columbia
Components | Type | Value | Form
--- | --- | --- | ---
Sulphuric acid, compound with graphite (CAS 12777-87-6) | TWA | 3 mg/m³ | Respirable fraction.

Canada - Ontario
Components | Type | Value | Form
--- | --- | --- | ---
Sulphuric acid, compound with graphite (CAS 12777-87-6) | TWA | 3 mg/m³ | RESPIRABLE PARTICULATE

Canada - Quebec
Components | Type | Value | Form
--- | --- | --- | ---
Sulphuric acid, compound with graphite (CAS 12777-87-6) | TWA | 10 mg/m³ | Total dust

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment
Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Hand protection
Wear appropriate chemical resistant gloves.

Other
Wear suitable protective clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
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.

9. Physical and chemical properties
Appearance
Black solid.

Physical state
Solid.

Form
Solid (flake).

Colour
Black.

Odour
Slight acidic.

Odour threshold
Not available.

pH
Not applicable.

Melting point/freezing point
> 2760 °C (> 5000 °F) / Not applicable.

Initial boiling point and boiling range
Not applicable.

Flash point
Not applicable.

Evaporation rate
Not applicable.

Flammability (solid, gas)
Not available.
Upper/lower flammability or explosive limits

- Flammability limit - lower (%): Not applicable.
- Flammability limit - upper (%): Not applicable.
- Explosive limit - lower (%): Not available.
- Explosive limit – upper (%): Not available.

Vapour pressure: Not applicable.
Vapour density: Not applicable.
Relative density: No data available.

Solubility(ies)
- Solubility (water): Insoluble in water.

Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature: Not applicable.
Decomposition temperature: Not applicable.
Viscosity: Not available.

Other information
- Bulk density: 0.6 - 1 g/cc
- Explosive properties: Not explosive.
- Oxidising properties: Not oxidising.

10. Stability and reactivity

Reactivity
- Material is stable under normal conditions.

Chemical stability
- No dangerous reaction known under conditions of normal use.

Possibility of hazardous reactions
- No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Conditions to avoid
- Strong oxidising agents.

Incompatible materials
- No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

- Inhalation: No adverse effects due to inhalation are expected.
- Skin contact: No adverse effects due to skin contact are expected.
- Eye contact: Direct contact with eyes may cause temporary irritation.
- Ingestion: Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics
- Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

- Acute toxicity: Not available.
- Skin corrosion/irritation: Prolonged skin contact may cause temporary irritation.
- Serious eye damage/eye irritation: Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitisation
- Respiratory sensitisation: Not a respiratory sensitiser.
- Skin sensitisation: This product is not expected to cause skin sensitisation.
- Germ cell mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

- Carcinogenicity: Not classifiable as to carcinogenicity to humans.
- Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure  Not classified.
Specific target organ toxicity - repeated exposure  Not classified.
Aspiration hazard  Not an aspiration hazard.

12. Ecological information

Ecotoxicity  The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability  No data is available on the degradability of any ingredients in the mixture.
Bioaccumulative potential  No data available.
Mobility in soil  The product is insoluble in water.
Other adverse effects  No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions  Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations  Dispose in accordance with all applicable regulations.
Hazardous waste code  The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products  Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging  Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG  Not regulated as dangerous goods.
IATA  Not regulated as dangerous goods.
IMDG  Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  Not applicable.

15. Regulatory information

Canadian regulations  This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act  Not regulated.
Export Control List (CEPA 1999, Schedule 3)  Not listed.
Greenhouse Gases  Not listed.
Precursor Control Regulations  Not regulated.

International regulations

Stockholm Convention  Not applicable.
Rotterdam Convention  Not applicable.
Kyoto Protocol  Not applicable.
Montreal Protocol  Not applicable.
## Basel Convention

Not applicable.

## International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

### Issue date
25-June-2020

### Revision date
25-June-2020

### Version No.
04

### List of abbreviations
TWA: Time Weighted Average.

### Disclaimer

NeoGraf Solutions cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.