SAFETY DATA SHEET

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

1.1. Product identifier
Name of the substance Graphite
Trade name of the substance Graf-X® Graphene Nanoplatelets
Identification number -
Registration number -
Synonyms None.
SDS number 0115
Product code Graf-X® GNP 1000, 2000, 3000, 4000
Issue date 01-November-2021
Version number 01
Revision date -
Supersedes date -

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Graphite powders are used in a broad range of applications in batteries, foams, lubricants, greases, extruded polystyrene insulation boards, fuel cells, paints, adhesives, chemical/mechanical polishing, coatings & roofing products, for use primarily in the building and construction, transportation, energy storage and semiconductor markets.
Uses advised against Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust as well as its potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

1.3. Details of the supplier of the safety data sheet
Manufacturer/Supplier NeoGraf Solutions, LLC
11709 Madison Ave.
Lakewood, OH 44107
+1 216-529-3777
Contact person Product Responsibility Manager +1 216-529-3724
E-mail info@neograf.com
1.4 Emergency telephone number For Chemical Emergency ONLY, call 3E at:
+44-20-35147487, +1-760-476-3961
Access Code: 333366

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.
Classification according to Regulation (EC) No 1272/2008 as amended
This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended
Contains: Graphite
Hazard pictograms None.
Signal word None.
Hazard statements The substance does not meet the criteria for classification.

Precautionary statements
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.
Supplemental information on the label None.
This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>Index No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite</td>
<td>&gt; 95</td>
<td>7762-42-5</td>
<td>231-955-3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Classification: -

| Natural Impurities* | < 3 | Not available | - | - |

Classification: -

Composition comments

*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. The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information

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

4.1. Description of 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 Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

Dusts may irritate the respiratory tract, skin and eyes. Coughing.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

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.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Use water spray to cool unopened containers.

Specific methods

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wear appropriate protective equipment and clothing during clean-up.

For emergency responders

Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material for containment and cleaning up

Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Practice good housekeeping.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

Graphite powders are used in a broad range of applications in batteries, foams, lubricants, greases, extruded polystyrene insulation boards, fuel cells, paints, adhesives, chemical/mechanical polishing, coatings & roofing products, for use primarily in the building and construction, transportation, energy storage and semiconductor markets.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit values

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

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

8.2. Exposure controls

Appropriate engineering controls

If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment

General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the 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

Wear respirator with dust filter.

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

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Powder.

Physical state

Solid.

Form

Powder.

Colour

Black.

Odour

None.

Odour threshold

Not available.

pH

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

**Initial boiling point and boiling range**  Not relevant.

**Flash point**  Not relevant.

**Evaporation rate**  Not relevant.

**Flammability (solid, gas)**  Not available.

**Upper/lower flammability or explosive limits**
- **Explosive limit - lower (%)**  Not relevant.
- **Explosive limit – upper (%)**  Not relevant.

**Vapour pressure**  Not relevant.

**Vapour density**  Not relevant.

**Relative density**  0.04 - 1.9

**Solubility(ies)**
- **Solubility (water)**  < 0.1 % Insoluble.

**Partition coefficient (n-octanol/water)**  Not relevant.

**Auto-ignition temperature**  Not relevant.

**Decomposition temperature**  Not relevant.

**Viscosity**  Not relevant.

**Explosive properties**  Not explosive.

**Oxidising properties**  Not oxidising.

**9.2. Other information**
- **Bulk density**  0.04 - 1.9
- **Kinematic viscosity**  Not applicable.
- **Percent volatile**  Not relevant.

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**  The product is stable and non-reactive under normal conditions of use, storage and transport.

**10.2. Chemical stability**  Material is stable under normal conditions.

**10.3. Possibility of hazardous reactions**  No dangerous reaction known under conditions of normal use.

**10.4. Conditions to avoid**  Contact with incompatible materials.

**10.5. Incompatible materials**  Chlorine.

**10.6. Hazardous decomposition products**  No hazardous decomposition products are known.

**SECTION 11: Toxicological information**

**General information**  Occupational exposure to the substance or mixture may cause adverse effects.

**Information on likely routes of exposure**

- **Inhalation**  Dust may irritate respiratory system.
- **Skin contact**  Dust or powder may irritate the skin.
- **Eye contact**  Dust may irritate the eyes.
- **Ingestion**  May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms**  Dusts may irritate the respiratory tract, skin and eyes. Coughing.

**11.1. Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>&gt; 10000 mg/kg</td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**  Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation**  Based on available data, the classification criteria are not met.
**Respiratory sensitisation**
Based on available data, the classification criteria are not met.

**Skin sensitisation**
Based on available data, the classification criteria are not met.

**Germ cell mutagenicity**
Based on available data, the classification criteria are not met.

**Carcinogenicity**
Based on available data, the classification criteria are not met.

**Reproductive toxicity**
Based on available data, the classification criteria are not met.

**Specific target organ toxicity - single exposure**
Based on available data, the classification criteria are not met.

**Specific target organ toxicity - repeated exposure**
Based on available data, the classification criteria are not met.

**Aspiration hazard**
Due to partial or complete lack of data the classification is not possible.

**Mixture versus substance information**
No information available.

**SECTION 12: Ecological information**

12.1. **Toxicity**
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.

12.2. **Persistence and degradability**
No data is available on the degradability of this substance.

12.3. **Bioaccumulative potential**
No data available.

**Partition coefficient n-octanol/water (log Kow)**
Not available.

**Bioconcentration factor (BCF)**
Not available.

12.4. **Mobility in soil**
The product is insoluble in water.

12.5. **Results of PBT and vPvB assessment**
This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.

12.6. **Other adverse effects**
No data available.

**SECTION 13: Disposal considerations**

13.1. **Waste treatment methods**

**Residual waste**
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.

**EU waste code**
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Special precautions**
Dispose in accordance with all applicable regulations.

**SECTION 14: Transport information**

**ADR**
14.1. - 14.6.: Not regulated as dangerous goods.

**RID**
14.1. - 14.6.: Not regulated as dangerous goods.

**ADN**
14.1. - 14.6.: Not regulated as dangerous goods.

**IATA**
14.1. - 14.6.: Not regulated as dangerous goods.

**IMDG**
14.1. - 14.6.: Not regulated as dangerous goods.

14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable.

**SECTION 15: Regulatory information**

15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture**
Retained direct EU regulations.
Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
Not listed.
Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended
Not listed.
Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.
Graphite (CAS 7782-42-5)
Regulation (EU) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
Not listed.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended
Not listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.

Other EU regulations
Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended
Not listed.

Other regulations
This product is classified and labelled in accordance with the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain. This Safety Data Sheet is compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758.

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

SECTION 16: Other information

List of abbreviations
ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
PBT: Persistent, bioaccumulative and toxic.
LD50: Lethal Dose, 50%.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TWA: Time Weighted Average.
TWA : Time Weighted Average Value.
vPvB: Very persistent and very bioaccumulative.

References
Information on evaluation method leading to the classification of mixture
Not available.

Full text of any H-statements not written out in full under Sections 2 to 15
None.

Training information
Follow training instructions when handling this material.
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. The information in the sheet was written based on the best knowledge and experience currently available.