

1. Identification

Product identifier	Graf-X® Graphene Nanoplatelets
Other means of identification	
SDS number	0115
Product code	Graf-X® GNP 1000, 2000, 3000, 4000
Recommended use	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.
Recommended restrictions	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.
Manufacturer/Importer/Supplier/Distributor information	
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
Emergency telephone number	For Chemical Emergency ONLY, call 3E at: +1-866-519-4752, +1-760-476-3962 Access Code: 333366

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The substance 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.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Substances

Chemical name	CAS number	%
Graphite	7782-42-5	> 95
Natural Impurities*	Not Available	< 3

Composition comments	<p>*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.</p> <p>All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.</p>
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	Do not rub eyes. 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	Dusts may irritate the respiratory tract, skin and eyes. Coughing.
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 (CO ₂).
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	Use water spray to cool unopened containers.
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. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>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.</p> <p>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.</p> <p>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Practice good housekeeping.
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).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Graphite (CAS 7782-42-5)	TWA	15 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA	2 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA	2.5 mg/m ³	Respirable.

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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. 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

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear suitable protective clothing.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

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	Powder.
Physical state	Solid.
Form	Powder.
Color	Black.
Odor	None.
Odor threshold	Not available.
pH	Not relevant.
Melting point/freezing point	> 5000 °F (> 2760 °C) / 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.**Vapor pressure** Not relevant.**Vapor 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.**Other information****Bulk density** 0.04 - 1.9**Explosive properties** Not explosive.**Kinematic viscosity** Not applicable.**Oxidizing properties** Not oxidizing.**Percent volatile** Not relevant.**10. Stability and reactivity****Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.**Chemical stability** Material is stable under normal conditions.**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.**Conditions to avoid** Contact with incompatible materials.**Incompatible materials** Chlorine.**Hazardous decomposition products** No hazardous decomposition products are known.**11. Toxicological information****Information on likely routes of exposure****Inhalation** Dust may irritate respiratory system. Prolonged inhalation may be harmful.**Skin contact** Dust or powder may irritate the skin.**Eye contact** Dust may irritate the eyes.**Ingestion** Expected to be a low ingestion hazard.**Symptoms related to the physical, chemical and toxicological characteristics** Dusts may irritate the respiratory tract, skin and eyes. Coughing.**Information on toxicological effects****Acute toxicity**

Components	Species	Test Results
Graphite (CAS 7782-42-5)		
<u>Acute</u>		
Oral		
LD50	Rat	> 10000 mg/kg

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 sensitization****Respiratory sensitization** Not a respiratory sensitizer.**Skin sensitization** This product is not expected to cause skin sensitization.

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.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

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.

Chronic effects Prolonged inhalation may be harmful.

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 this substance.

Bioaccumulative potential No data available.

Mobility in soil The product is insoluble in water.

Other adverse effects No data available.

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

DOT
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

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

This substance is on the TSCA 8(b) inventory and is designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Graphite (CAS 7782-42-5)

US. New Jersey Worker and Community Right-to-Know Act

Graphite (CAS 7782-42-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Graphite (CAS 7782-42-5)

US. Rhode Island RTK

Graphite (CAS 7782-42-5)

California Proposition 65



WARNING: This product can expose you to Crystalline Silica (quartz), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Crystalline Silica (quartz) (CAS 14808-60-7)

Listed: October 1, 1988

International Inventories

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

*A "Yes" indicates that all components of this product comply 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, including date of preparation or last revision

Issue date 01-November-2021

Revision date -

Version #

01

NFPA ratings



List of abbreviations

PEL: Permissible Exposure Limit.

LD50: Lethal Dose, 50%.

TWA: Time Weighted Average Value.

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.