

# SAFETY DATA SHEET



PureGRAPH® AQUA Water-based graphene paste

## Section 1. Identification

**GHS product identifier** : PureGRAPH® AQUA Water-based graphene paste**Other means of identification** : Not available.

**Product use** : This substance is used in the following products: adhesives and sealants, coating products, fillers, putties, plasters, binders (cement, mortars, non-cement binders), metal surface treatment products, non-metalsurface treatment products, inks and toners, laboratory chemicals, lubricants and greases, metal working fluids, and polymers including composites, plastics and rubbers.

This substance is used in the following areas: printing and recorded media reproduction. This substance is used for the manufacture of: plastic, rubber and composite products. The substance is used in mining services, leisure equipment, construction and energy storage devices.

**Supplier's details** : Manufacturer:  
First Graphene Ltd.,  
1 Sepia Close,  
Henderson,  
WA 6166  
Australia.

Distributor USA:  
Neograf Solutions LLC  
11709 Madison Avenue,  
Lakewood,  
OH 44107,  
United States of America.

**e-mail address of person responsible for this SDS** : info@firstgraphene.net**Emergency telephone number (with hours of operation)** : +61 1300 660 448 (01.30-10.00 CET)

## Section 2. Hazards identification

**OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.**Classification of the substance or mixture** : Not classified.

### GHS label elements

**Signal word** : No signal word.**Hazard statements** : No known significant effects or critical hazards.

### Precautionary statements

**Prevention** : Not applicable.**Response** : Not applicable.**Storage** : Not applicable.**Disposal** : Not applicable.

## Section 2. Hazards identification

**Hazards not otherwise classified** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

**Other means of identification** : Not available.

Ingredient name	%	CAS number
Graphene (Nanoplatelets)	≥18 - ≤25	1034343-98-0
sulphuric acid	≤0.3	7664-93-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam. Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : No specific fire or explosion hazard.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon monoxide.  
carbon dioxide.

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Graphene	None.
sulphuric acid	<p><b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 1 mg/m<sup>3</sup> 8 hours.</p> <p><b>NIOSH REL (United States, 10/2016).</b> TWA: 1 mg/m<sup>3</sup> 10 hours.</p> <p><b>ACGIH TLV (United States, 3/2020).</b> TWA: 0.2 mg/m<sup>3</sup> 8 hours. Form: Thoracic fraction</p> <p><b>OSHA PEL (United States, 5/2018).</b> TWA: 1 mg/m<sup>3</sup> 8 hours.</p>

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne 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. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

## Section 8. Exposure controls/personal protection

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

**Physical state** : Solid. [Paste.]  
**Color** : Black.  
**Odor** : Not available.  
**Odor threshold** : Not available.  
**pH** : 2.25 to 3.25  
**Melting point/freezing point** : Not available.  
**Boiling point, initial boiling point, and boiling range** : Not available.  
**Flash point** : Not applicable.  
**Evaporation rate** : Not available.  
**Flammability** : Not applicable.  
**Lower and upper explosion limit/flammability limit** : Not applicable.  
**Vapor pressure** : Not available.  
**Relative vapor density** : Not applicable.  
**Relative density** : Not available.  
**Solubility** : Not available.  
**Solubility in water** : Not available.  
**Partition coefficient: n-octanol/water** : Not applicable.  
**Auto-ignition temperature** : Not applicable.  
**Decomposition temperature** : Not available.  
**Viscosity** : Not applicable.  
**Particle characteristics**  
**Median particle size** : Not available.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : Keep away from heat, sparks and flame.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Graphene	LD50 Oral	Mouse - Male, Female	>5000 mg/kg	-

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Graphene	Skin - Non-irritating to the skin.	Rabbit	-	-	72 hours
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	72 hours

#### **Conclusion/Summary**

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

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

#### Sensitization

Product/ingredient name	Route of exposure	Species	Result
Graphene	skin	Guinea pig	Not sensitizing

#### **Conclusion/Summary**

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

#### Mutagenicity

Product/ingredient name	Test	Experiment	Result
Graphene	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Carcinogenicity

**Conclusion/Summary** : No known significant effects or critical hazards. Used and processed under controlled conditions. No formation of sulphuric acid mist.

#### Classification

Product/ingredient name	OSHA	IARC	NTP
sulphuric acid	-	1	Known to be a human carcinogen.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

**Conclusion/Summary** : Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

#### Potential acute health effects

## Section 11. Toxicological information

- Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Graphene	Sub-acute NOAEL Inhalation Dusts and mists	Rat - Male	≥1.88 mg/m <sup>3</sup>	28 days; 5 days per week

- Conclusion/Summary** : Based on available data, the classification criteria are not met.  
**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Graphene	Acute EC50 62.2 mg/l	Algae - Chlorella pyrenoidosa	96 hours
	Acute EC50 16 mg/l	Daphnia - Daphnia magna	48 hours

- Conclusion/Summary** : Harmful to aquatic life with long lasting effects.

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Graphene	OECD 301	0 % - Not readily - 28 days	-	-

- Conclusion/Summary** : The methods for determining the biological degradability are not applicable to inorganic substances.

## Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Graphene	-	-	Not readily

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-	-	-	-
<b>Transport hazard class(es)</b>	-	-	-	-	-	-
<b>Label</b>						
<b>Packing group</b>	-	-	-	-	-	-
<b>Environmental hazards</b>	No.	No.	No.	No.	Marine Pollutant: No	No.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.



## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
Clean Water Act (CWA) 311: sulphuric acid

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
sulphuric acid	≤0.3	Yes.	1000	-	1000	-

**SARA 304 RQ** : 526315.8 lbs / 238947.4 kg

### SARA 311/312

**Classification** : Not applicable.

#### Composition/information on ingredients

Name	%	Classification
Graphene	≥18 - ≤25	COMBUSTIBLE DUSTS
sulphuric acid	≤0.3	CORROSIVE TO METALS - Category 1 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1 CARCINOGENICITY - Category 1A

### State regulations

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

### California Prop. 65

**⚠ WARNING:** This product can expose you to Strong inorganic acid mists containing sulfuric acid, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
Strong inorganic acid mists containing sulfuric acid	-	-

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

## Section 15. Regulatory information

Not listed.

### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

<b>Australia</b>	: At least one component is not listed.
<b>China</b>	: At least one component is not listed.
<b>Europe</b>	: At least one component is not listed.
<b>Taiwan</b>	: All components are listed or exempted.
<b>United States</b>	: At least one component is not listed.

## Section 16. Other information

### National Fire Protection Association (U.S.A.)



### Procedure used to derive the classification

Classification	Justification
Not classified.	

### History

**Date of printing** : 04/14/2022

**Date of issue/Date of revision** : 04/14/2022

**Date of previous issue** : No previous validation

**Version** : 1

**Key to abbreviations** :

- ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- DOT = Department of Transportation
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
- SGG = Segregation Group
- TDG = Transportation of Dangerous Goods
- UN = United Nations

**References** : Not available.

📌 Indicates information that has changed from previously issued version.

### Notice to reader

## Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.