



Safety Data Sheet

Version 1.0 Rev date 25.10.2017

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Multilayer Graphene nanoplates

Recommended Use: Manufacture of substances

Supplier: Graphene Manufacturing Australia Pty Ltd (GMA)

ABN: 83 614 164 877

Street Address: 90 Staghorn Street, Enoggera, 4051, Queensland, Australia

Telephone Number: +61 434 432 002

Emergency Telephone: +61 0434 432 002

2. HAZARDS IDENTIFICATION

GHS Classification – Not a hazardous substance or mixture

GHS Label elements, including precautionary statements

Pictogram: none

Signal word: none

Hazard statement(s): none

Precautionary statement(s): none

Not a hazardous substance or mixture

Other hazards – none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components / CAS Number Proportion Risk Phrases

Substances

Formula	:	C
Molecular weight	:	12.01 g/mol
CAS-No.	:	7782-42-5
EC-No.	:	231-955-3

4. FIRST AID MEASURES

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

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Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 11.

Indication of any immediate medical attention and special treatment needed

No data available

5. FIRE FIGHTING MEASURES

Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

No data available

Advice for fire-fighters

Wear self-contained breathing apparatus for fire fighting if necessary

Further Information

No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. For personal protection see section 8.

Environmental precautions

No special environmental precautions required.

Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference for other sections

For disposal see section 13

7. HANDLING AND STORAGE

Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place.

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Specific end use(s)

Apart from the uses mentioned in section 1, no other specific.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

Component	CAS-No.	Value	Control parameter	Basis
Graphite	7782-42-5	TWA	3 mg/m ³	Australia. Workplace Exposure Standards for Airborne Contaminants.
	Remarks	See Chapter 14 National Commission documentation available for these values containing no asbestos and <1% crystalline silica, all forms except fibres		
		TWA	3 mg/m ³	Australia. Workplace Exposure Standards for Airborne Contaminants
		Containing no asbestos and <1% crystalline silica		

Exposure controls

Appropriate engineering controls

General industrial hygiene practice

Personal protective equipment

Respiratory protection: Protect against inhalation by using type N95 (US) or type P1 (EN 143) dust masks. A respiratory protection program that meets applicable OHSA requirements should be maintained in the workplace.

Eye protection: Protect against contact with eyes by wearing suitable safety eyeglasses or chemical protective goggles or other face protection.

Skin protection: Protect against skin contact by wearing protective gloves. Protect against skin contact by wearing suitable clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance:	Solid.
Odor:	Odorless.
Taste:	Tasteless.
Molecular Weight:	12.01 g/mole
Color:	Black
pH (1% soln/water):	Not applicable.
Boiling Point:	Not available.
Melting Point:	3650°C (6602°F)
Critical Temperature:	681°C (1257.8°F)
Specific Gravity:	Not available.
Vapor Pressure:	Not applicable.
Vapor Density:	Not available.
Volatility:	Not available.
Odor Threshold:	Not available.
Water/Oil Dist. Coeff.:	Not available.
Ionicity (in Water):	Not available.
Dispersion Properties:	Not available.
Solubility:	Insoluble in cold water.

Other safety information

No data available

10. STABILITY AND REACTIVITY

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials.

Incompatibility with various substances: Highly reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Reacts vigorously with liquid potassium, and potassium peroxide. If graphene contacts liquid potassium, rubidium or caesium at 300 C, intercalation compounds may be formed.

Special Remarks on Corrosivity: Not available. Polymerization: Will not occur.

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Chemical stability: Stable under normal conditions of use.

Conditions to avoid: Avoid contact with foodstuffs. Avoid exposure to heat, sources of ignition, and open

flame.

Incompatible materials: Incompatible with oxidising agents.

Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions – Carbon oxides

Other decompositions products – No data available

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

LD50 (oral, rat): >2000mg/kg (OECD Test Guideline 423)

LC50 (inhalation, rat): 4h – 2,000mg/m³ (OECD Test Guideline 403)

Serious eye damage/eye irritation

Eyes – Rabbit

Result: No eye irritation (OECD Test Guideline 405)

Skin corrosion/irritation

Skin – Rabbit

Result: No skin irritation (OECD Test Guideline 404)

Respiratory or skin sensitisation

- Mouse; Did not cause sensitisation on laboratory animals (OECD Test 429)

Germ cell mutagenicity

In vitro assay

S. typhimurium

Results: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC

Reproductive toxicity

No data available

Specific target organ toxicity – single exposure

No data available

Specific target organ toxicity – repeated exposure

No data available

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Aspiration hazard: No data available

Additional information

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish: Semi-static test LC50 – Danio rerio (Zebra fish) - > 100 mg/l – 96 h (OECD Test Guideline 203)

Toxicity to daphnia and other invertebrates: Static test EC50 - Daphnia magne (Water flea) - > 100 mg/l – 48 h (OECD Test Guideline 202)

Toxicity to algae: Static test EC50 – Pseudokirchneriella subcapitata - > 100 mg/l – 72 h (OECD Test Guideline 201)

BOD5 and COD: Not available.

Persistence and degradability: Not available

Mobility in soil: No data available

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company

Contaminated packaging

Dispose of as unused product

14. TRANSPORT INFORMATION

UN number

ADR/RID: -

IMDG: -

IATA-DGR: -

UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA-DGR: Not dangerous goods

Transport hazard class



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ADR/RID: -

IMDG: -

IATA-DGR: -

Packaging group

ADR/RID: -

IMDG: -

IATA-DGR: -

Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

Special precautions for user

No data available

15. REGULATORY INFORMATION

Safety, Health and environmental regulations/legislation specific for the substance or mixture

Standard for the Uniform Scheduling of medicines and poisons

No data available

Carcinogen classification under the WHS Regulation 2011, Schedule 10

Not listed

16. OTHER INFORMATION

Safety Data Sheet – Graphene Manufacturing Australia Pty Ltd (GMA); 25/10/2017

This material safety data sheet has been prepared by GMA.

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since GMA cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their GMA representative at the contact details on page 1.

GMA responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.