



April, 2017

Material Safety Data Sheet (MSDS)

NTC_TEC_005

NorGraphene Technologies Canada.

www.norgraphene.com

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1. Product Information

Trade/Material Name: **Graphene, Powder, Electrical Conductivity > 10⁵ S/m**
Chemical Name: **Graphene**
Synonyms: **Few-layered graphene**
Product Code: **NTCGPDLL Serials and NTCGPDFL Serials**
Product Grade: **Pure**
Product Preparation: **Laboratory/Fatory chemicals, Synthesis of substances**
Manufacturer's Name: **NorGraphene Technologies Canada (NTC)**
Manufacturer's Address: **18 Ventnor Way, Ottawa, Ontario, Canada K2J1M3**
Business No.: **722768090RC0001**
Non-Emergency No.: **(613)852-6590**
Supplier's Name: **NorGraphene Technologies Canada (NTC)**
Product Use: **Graphene Application Products**

2. Hazardous Ingredients

Classification of the substance or mixture: **Not a hazardous substance or mixture.**
GHS Label elements, including precautionary statements: **Not a hazardous substance or mixture.**
Hazards not otherwise classified (HNOC) or not covered by GHS: **None**

3. Physical Data

Ingredient Name	Case#	Percentage(%)	EC Number	EC Classification
Graphite/Graphene	7782-42-5	90-100	231-955-3	Xi R36/37/38

Physical State (gas, liquid or solid):	Solid, grey powder
Odour and Appearance:	Odorless powder
Flash point:	No data available
Explosive properties:	No data available
Specific Gravity:	No data available
Vapour Pressure:	No data available
Vapour Density:	No data available
Evaporation Rate:	No data available
Boiling Point:	No data available
Freezing/Melting Point:	No data available
pH:	Neutral
Coefficient of Oil/Water Distribution:	Not applicable
Viscosity:	Not applicable
Solubility:	Not applicable
Solubility in water:	Insoluble
Other Information:	_ 3652 – 3697 °C

4. Fire and Explosion Hazard Data

This product is stable under normal storage conditions.

Conditions of Flammability:	Ordinary fire protection
Flash Point and Method of Determination:	No data available
Auto-ignition Temperature:	No data available
Means of Extinction:	No data available
Hazardous decomposition:	carbon monoxide and carbon dioxide
Conditions to avoid:	Ignition source
Materials to avoid:	Oxidizing and reducing agent

5. Reactivity Data

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	No data available
Conditions to avoid:	Not applicable
Incompatible materials:	Strong oxidizing agents
Hazardous decomposition:	Hazardous decomposition products formed under fire conditions. Nature of decomposition products not known.

6. First Aid Measures

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled:

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

In case of skin contact:

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed:

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

Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed:

No data available

7. Firefighting Measures

Suitable 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 firefighters:

Wear self-contained breathing apparatus for firefighting if necessary.

Further information: **No data available**

8. Preventive Measures

Engineering Controls: **Dedicate rooms for producing, testing, and packing with adequate ventilation. Keep personnel to safe areas.**

Personal Protective Equipment: **Avoid dust formation. Avoid breathing vapors, mist or gas.**

Protective Clothing: **No special need.**

Eye Protection: **See section 10.**

Respiratory Protection: **See section 10.**

Storage Requirements: **No special need.**

Leak/Spill Clean-up: **Ordinary vacuum and adequate ventilation.**

Waste Disposal: **Ordinary vacuum and adequate ventilation.**

Environmental precautions: **Do not let product enter drains.**

Methods and materials for containment and cleaning up:

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

9. Handling and storage

Precautions for safe handling:

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage, including any incompatibilities:

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

Specific end use(s):

No other specific uses are stipulated

10. Exposure control and personal protection

Exposure controls/Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment:

Eye/face protection:

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection:

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure:

Do not let product enter drains.

11. Ecological information

Information on toxicological effects:

Acute toxicity: **No data available**

Inhalation: **No data available**

Dermal: **No data available**

Skin corrosion/irritation: **No data available**

Serious eye damage/eye irritation: **No data available**

Respiratory or skin sensitization: **No data available**

Germ cell mutagenicity: **No data available**

Carcinogenicity:

IARC:

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

ACGIH:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity: **No data available**

Specific target organ toxicity - single exposure: **No data available**

Specific target organ toxicity - repeated exposure: **No data available**

Aspiration hazard: **No data available**

Additional Information RTECS: **No data available**

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

12. Toxicological information

Toxicity:	No data available
Persistence and degradability:	No data available
Bioaccumulative potential:	No data available
Mobility in soil:	No data available
Results of PBT and vPvB assessment :	
PBT/vPvB assessment:	Not applicable as chemical safety assessment not required.
Other adverse effects:	No data available

13. Disposal Consideration

Waste treatment methods:

Product:

Contact a licensed professional waste disposal service to dispose of this material. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging:

Dispose of as unused product.

14. Transport information

TDG (Canada):	Not dangerous goods
IATA:	Not dangerous goods
IMDG:	Not dangerous goods


15. Regulatory information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the MSDS contains all the information required by the HPR.

16. Other Information

Revision History

Version	Description	Author	Protected Status	Published Date
V1.0	NorGraphene – Material Technical Data Sheet	Rocky K	Protected “A”	February 20, 2018

Symbol	 GHS07
Signal word	Warning
Hazard statements	H319-H335
Precautionary statements	P305 + P351 + P338
RIDADR	NONH for all modes of transport

24 Hour Emergency Phone Numbers:

Medical: 1-800-327-3874

Transportation: 1-800-535-5053
