

## SAFETY DATA SHEET

Version 1.5  
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[www.nanoxplore.ca](http://www.nanoxplore.ca)

### 1. PRODUCT AND COMPANY IDENTIFICATION

- **Product name:** Graphene powder
- **Brand/Grades:** GrapheneBlack™ 0X, GrapheneBlack™ 3X
- **Other means of identification:** Few-layer graphene
- **Recommended use:** Manufacturing of composite materials; coatings and paints; research and development.
- **Restrictions on use:** FDA Class III medical devices; European class III medical devices; Health Canada class IV Medical Devices; Applications involving permanent implantation into the body; Life-sustaining medical applications.
- **Supplier and manufacturer:** Buckley King  
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### 2. HAZARD IDENTIFICATION

- **Overview** Not a dangerous substance or mixture according to the Globally Harmonised System (GHS).
- **Hazard classification**
  - Health hazard:** 0
  - Flammability:** 0
  - Physical hazards:** 0
- **Potential health hazards**
  - Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
  - Skin:** May be harmful if absorbed through skin. May cause skin irritation.
  - Eyes:** May cause eye irritation.
  - Ingestion:** May be harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

- **Synonyms:** -

Chemical name	CAS-No.	Concentration
Graphene	1034343-98-0	<=100%

#### 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:** Flush eyes with water as a precaution.
- **If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water.

#### 5. FIRE-FIGHTING MEASURES

- **Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Unsuitable extinguishing media:** No data available.
- **Specific hazards arising from the hazardous product and hazardous combustion products:** Carbon oxides.
- **Special protective equipment and precautions:** Respiratory and eye protection for fire fighting personnel.

#### 6. ACCIDENTAL RELEASE MEASURES

- **Personal precautions, protective equipment and emergency procedures:** Avoid dust formation. Avoid breathing vapors, mist or gas.
- **Methods and materials for containment and cleaning up:** Sweep up and shovel. Keep in suitable, closed containers for disposal. Do not let product enter drains.

#### 7. HANDLING AND STORAGE

- **Precautions for safe handling:** Provide appropriate exhaust ventilation at places where dust is formed.
- **Conditions for safe storage and incompatible materials:** Keep container tightly closed in a dry and well-ventilated place

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Engineering controls:** Use in a well-ventilated area. If handling results in dust generation, special ventilation may be needed to minimize dust exposure. If heated material generates vapor or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure.
- **Personal protective equipment:**
  - Respiratory protection:** To minimize risk of over exposure to dust, vapour or fumes it is recommended that a local exhaust system is placed above the equipment, and that the working area is properly ventilated. If ventilation is inadequate, use certified respirator that will protect against dust/mist.
  - Hand 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.
  - Eye protection:** Use equipment for eye protection tested and approved under appropriate government standards.
  - Skin and body protection** Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
  - Hygiene measures:** General industrial hygiene practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** Black powder.
- **Odor:** Odorless.
- **Odor threshold:** Not applicable.
- **pH:** Not applicable.
- **Melting point:**  $3.65e^3$ - $3.83e^3$ .
- **Initial boiling point/range:** Not applicable.
- **Flash point:** 600-700°C
- **Evaporation rate:** Not applicable.
- **Flammability:** Non-flammable
- **Lower flammable/explosive limit:** No data available.
- **Upper flammable/explosive limit:** No data available.
- **Vapor pressure:** Not applicable.
- **Vapor density:** Not applicable.
- **Density:**  $2.2 \text{ g/cm}^3$ .
- **Solubility:** Insoluble in water.
- **Partition coefficient (n-octanol/water):** Not applicable.
- **Auto-ignition temperature:** No data available.
- **Decomposition temperature:** No data available.
- **Viscosity:** Not applicable.

## 10. STABILITY AND REACTIVITY

- **Chemical stability:** Stable under recommended storage conditions.
- **Possibility of hazardous reactions:** No data available.
- **Conditions to avoid:** No data available.
- **Incompatible materials:** Strong oxidizing agents.
- **Hazardous decomposition products:** Hazardous decomposition products formed under fire conditions; mainly carbon oxides.  
Other decomposition products: No data available.

## 11. TOXICOLOGICAL INFORMATION

- **Acute toxicity** No
- **Skin corrosion/irritation** No
- **Serious eye damage/eye irritation** Yes
- **Respiratory or skin sensitisation** Yes
- **Germ cell mutagenicity** No data available.
- **Carcinogenicity** Class 2B carcinogens
- **Reproductive toxicity** No
- **Teratogenicity** No
- **Specific target organ toxicity** No data available.
- **Aspiration hazard** Yes
- **Potential health effects** No data available.
  - Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
  - Ingestion:** May be harmful if swallowed.
  - Skin:** May be harmful if absorbed through skin. May cause skin irritation.
  - Eyes:** May cause eye irritation.
- **Signs and Symptoms of Exposure:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
- **Synergistic effects:** No data available.
- **Additional Information:** No data available.

## 12. ECOLOGICAL INFORMATION

- **Ecotoxicity:** Yes
- **Persistence and degradability:** No
- **Bioaccumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **PBT and vPvB assessment** No data available.
- **Other adverse effects:** No data available.

## 13. DISPOSAL CONSIDERATIONS

- **Product disposal:** Offer surplus and non-recyclable solutions to a licensed disposal company.
- **Contaminated packaging disposal:** Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

- **UN number:** Not classified.
- **DOT (USA):** Not classified as dangerous goods.
- **TDG (Canada):** Not classified as dangerous goods.
- **IMDG:** Not classified as dangerous goods.
- **IATA:** Not classified as dangerous goods.
- **Packing group:** Not classified.

#### 15. REGULATORY INFORMATION

- **WHMIS Classification:** Not classified.
- **DSL/NDSL (Canada):** Not Listed.
- **TSCA Status:** This chemical is subject to the SNUR at 721.10844.

#### 16. OTHER INFORMATION

- **Date of the latest revision:** 08 August 2019

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