NMCore MATERIAL SAFETY DATA SHEET

Printing date: March 25, 2024 Revision: October 24, 2024

Section 1. Identification of the substance/mixture and of the company

- **Identification of the product:** Carbon Quantum Dots solution
- **Chemical family:** Carbon Quantum Dots
- **Product name:** Photoluminescent Carbon Quantum Dots
- **Use of the substance/preparation:** Agriculture/Research applications only
- **Distributor:** NMCore LLC, 1209 E Flint St, 82072 Laramie, WY
- **Manufacturer/Supplier**: Qarbotech Sdn. Bhd.
- **Emergency phone:** Hud Wahab, +1 307 220 6589

Section 2. Hazards identification

This solution is considered non-toxic under normal handling conditions. The present substance has been classified according to the hazard identification of its components.

GHS Classification of the mixture:
Classification according to CLASS regulations 2013
- Not a hazardous substance or mixture.

GHS Label elements:

Pictogram: None

Signal word: None

Hazard statement: None

Precautionary statement(s): None
Not a hazardous substance or mixture.

Section 3. Composition/Information on ingredients

-	**Carbon Quantum Dots**	CAS: 7440-44-0 Molecular weight: 12 g/mol Concentration: ~ 2,500 ppm
-	**Water**	Synonyms: H2O CAS: 7732-18-5 Molecular weight: 18 g/mol
-	**Form**:	Liquid
-	**Appearance:**	Greyish suspension
-	**Odor:**	Odorless
-	**pH:**	7

Section 4. First aid measures

- **General advice:** Consult a physician if any discomfort arises. Show this safety data sheet to the doctor in attendance.
- **After skin contact:** Wash skin with soap and water. Consult a physician if any discomfort arises.
- **After ingestion:** Rinse mouth with water. Consult a physician if any discomfort arises.
- **After eye contact:** Rinse thoroughly with plenty of water. Consult a physician if any discomfort arises.
- **After inhalation:** If breathed in, move person into fresh air. Consult a physician if any discomfort arises. The most important known symptoms and effects are described in the labelling and/or in section 11.

Section 5. Fire-fighting measures

This product is not flammable.

- **Suitable extinguishing media:** conventional fire extinguishing media for surrounding materials.
- **Special hazards arising from the substance:** Non under normal conditions.
- **Special protective equipment for fire-fighting:** No specific fire-fighting procedures given.

Section 6. Accidental release measures

- **Person-related precautionary measures:** Ensure adequate ventilation. Evacuate personnel to safe areas.
- **Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
- **Methods and materials for containment and cleaning up:** Contain spillage and then with an electrically protected vacuum cleaner or by wet-brushing and place in suitable closed containers for disposal according to local regulations.

Section 7. Handling and storage

- **Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking and when leaving work.
- **Storage:** Store in cool dry place. Keep away from sunlight.

Section 8. Exposure controls/personal protection

Exposure controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

- **Hand protection:** Handle with gloves
- **Eye protection:** Wear safety glasses
- **Skin and body protection:** Wear lab coat and safety shoes.
- **Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9. Physical and chemical properties

- **Physical State:** Liquid
- **Important health, safety and environmental information:**
  - pH value: 7.0
  - Odor: odorless
  - Solubility in water (20°C): Soluble

Section 10. Stability and reactivity

- **Reactivity:** No data available.
- **Chemical Stability:** Stable under recommended storage conditions.
- **Conditions to avoid:** Extreme temperatures and direct sunlight.
- **Hazardous decomposition products:** Other decomposition products – no data available.
- **Possibility of hazardous reactions:** No data available.
- **Incompatible materials:** No data available.

Section 11. Toxicological information

Toxicological information related to graphite (the closest material to carbon quantum dot).

Metrices	Graphite
LD50(oral, rat)	>2,000 mg/kg
LC50(inhalation, rat)	2000 mg/m^3 (4h)
LD50(dermal rabbit)	Not irritant (4h)
Skin corrosion/ irritation	Not irritant
Serious eye damage/ eye irritation	Not irritant
Respiratory or skin sensitization	Does not cause sensitization
Germ cell mutagenicity	Negative
Reproductive toxicity	No data available
Additional information	RTECS: MD9659600

RTECS: registry of toxic effects of chemical substances.

Section 12. Ecological information:

To the best of our knowledge the ecological effects of this solution have not been thoroughly researched.

Ecological information related to Graphite

Graphite is a naturally occurring substance that is found throughout the world. To our knowledge, there is no reliable data regarding its bio-accumulation or mobility in environment media, there is no data to suggest that it should be considered as an environmental hazard.

Section 13. Disposal considerations

Waste treatment methods: Dispose of waste and residues in accordance with federal, state, and local regulations. Chemicals should be kept in their original containers and not mixed with other waste. Handle uncleaned containers in the same manner as the product. For guidance on returning chemicals and containers, please visit https://www.epa.gov/hw or contact us for further assistance. In the United States, waste may need to be managed under the Resource Conservation and Recovery Act (RCRA). Please contact a licensed hazardous waste disposal service in your state to ensure proper classification, recycling, treatment, or disposal methods are followed.

Section 14. Transport information

This material is not classified as hazardous for transportation under U.S. regulations. It can be transported by land, air, or sea.

- **Land**: Complies with the U.S. Department of Transportation (DOT) regulations for road and rail transportation.
- **Air**: In accordance with the International Air Transport Association (IATA) Dangerous Goods Regulations (DGR).

- **Sea**: Follows the International Maritime Dangerous Goods (IMDG) Code for maritime transport.

Ensure all transportation activities comply with federal, state, and local regulations.

Section 15. Regulatory information

This safety datasheet has been revised to comply with the requirements established in (EC) 453/2010.

Section 16. Other information

Date of creation: 03/25/24

The contents and format of this MSDS are in accordance with EC 453/2010.

Disclaimer: NMCore LLC provides the information contained herein in good faith and makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material.