

**Material Safety Data Sheet**

Version No.: 5.0(Rev date : 2025-11-07)

MSDS No: AA12545-0000000015

**Silica Magnetic Nanobeads**

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**1. Product and company identification**

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a. Product name : Silica Magnetic Nanobeads

b. Recommended use of the chemical and restrictions of use

Identified uses : For research use only. Not for use in any other applications.

c. COMPANY IDENTIFICATION:

☐ Company : BIONEER Corporation☐ Address : 8-11, Munpyeongseo-ro, Daedeok-gu, Daejeon 306-220, Republic of Korea☐ Emergency telephone Number : : +82-42-930-8591

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**2. Hazards Identification**

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a. Classification of the substance/mixture:

Not classified as a hazardous substance according to GHS.

b. Label elements:

☐ Pictogram: None☐ Signal word: None☐ Hazard statements: None☐ Precautionary statements:

• Prevention: Not applicable

• Response: Not applicable

• Storage: Not applicable

• Disposal: Not applicable

c. Other hazards not classified under GHS (NFPA): Not available

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### 3. Composition/Information on Ingredients

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○ Product name (Mixture): Silica Magnetic Nanobeads

Chemical name (IUPAC)	Cas. No	Wt. (%)	Remark
Water	7732-18-5	99%<	–
Iron oxide	1317-61-9	1.98%	–
Silica	7631-86-9	0.02%	*Although this substance is present at a concentration below the classification threshold, it contains hazardous properties and should be handled with care.

\* This mixture is not classified as hazardous under GHS criteria.

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### 4. First aid measures

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a. In case of eye contact :

After eye contact : rinse out with plenty of water for a few minutes

Remove contact lenses.

Call in ophthalmologist.

b. In case of skin contact :

In case of skin contact : Take off immediately all contaminated clothing

Rinse skin with water/shower

c. If inhaled :

After inhalation : fresh air.

If symptoms appear, consult a doctor.

d. If swallowed :

Wash a mouth with water.

Consult a physician.

See a doctor immediately.

e. General advice :

Show this material safety data sheet to the doctor in attendance.

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### 5. Firefighting measures

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a. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, dry powder, foam, carbon dioxide.

Unsuitable extinguishing media: No data available

b. Special hazards arising from the substance or mixture

Hazardous combustion gases or vapors may occur in the event of a fire

Carbon oxides, Metal Oxide

c. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

d. Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## 6. Accidental release measures

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a. Personal precautions and protective equipment:

Avoid creating dust. Do not breathe mist, vapor, or gas.

b. Environmental precautions:

Prevent entry into sewers or drains.

c. Methods and materials for containment and cleaning up:

Clean up thoroughly and store in a suitable sealed container for disposal.

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## 7. Handling and Storage

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a. Precautions for safe handling:

Install appropriate exhaust ventilation where dust is generated.

b. Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated area with sealed containers.

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## 8. Exposure Controls/Personal Protection

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- a. Occupational exposure limits and biological exposure limits: Not available
  - b. Engineering controls: Not available
  - c. Personal protective equipment:
    - ☐ Respiratory protection: Use appropriate respiratory protection
    - ☐ Eye protection: Wear government-approved safety goggles. Use in facilities with eyewash stations.
    - ☐ Hand protection: Use protective gloves
    - ☐ Skin and body protection: Use impermeable clothing and protective gear
    - ☐ Hygiene measures: Follow general industrial hygiene standards
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## 9. Physical and Chemical Properties

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- a. Appearance (physical state, color): Black powder
  - b. Odor: Not available
  - c. Odor threshold: Not available
  - d. pH: Not available
  - e. Melting/freezing point: 1565°C (Iron oxide), 1600°C (Silica)
  - f. Initial boiling point and boiling range: Not available (Iron oxide), 2230°C (Silica)
  - t. Flash point: Not available
  - h. Evaporation rate: Not available
  - i. Flammability (solid, gas): Not available
  - j. Upper/lower flammability or explosive limits: Not available
  - k. Vapor pressure: Not available
  - l. Solubility: Insoluble in water
  - m. Vapor density: Not available
  - n. Specific gravity: Not available
  - o. Partition coefficient (n-octanol/water): Not available
  - p. Auto-ignition temperature: Not available
  - q. Decomposition temperature: Not available
  - r. Viscosity: Not available
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s. Molecular weight: Not available

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## 10. Stability and Reactivity

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- a. Chemical stability: Stable under recommended conditions
- b. Possibility of hazardous reactions: Not available
- c. Conditions to avoid: Not available
- d. Incompatible materials: Strong oxidizers
- e. Hazardous decomposition products: Not available

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## 11. Toxicological Information

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- a. Likely routes of exposure:
  - ☐ Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
  - ☐ Ingestion: May be harmful if swallowed.
  - ☐ Eye/skin contact: May be harmful if absorbed through skin. May cause eye and skin irritation.
- b. Health hazard information:
  - ☐ Acute toxicity: Not available
  - ☐ Skin corrosion/irritation: Not available
  - ☐ Serious eye damage/irritation: Not available
  - ☐ Respiratory sensitization: Not available
  - ☐ Skin sensitization: Not available
  - ☐ Carcinogenicity: Not available
  - ☐ Germ cell mutagenicity: Not available
  - ☐ Reproductive toxicity: Not available
  - ☐ Specific target organ toxicity (single exposure): Not available
  - ☐ Specific target organ toxicity (repeated exposure): Not available
  - ☐ Aspiration hazard: Not available
  - ☐ Signs and symptoms of exposure: Not available
- c. Numerical measures of toxicity: Not available

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## 12. Ecological Information

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- a. Aquatic toxicity: Not available
- b. Persistence and degradability: Not available
- c. Bioaccumulative potential: Not available
- d. Mobility in soil: Not available
- e. Other adverse effects: Not available

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## 13. Disposal Considerations

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- a. Waste treatment methods:

Residual and non-recyclable solutions should be disposed of through a licensed waste disposal contractor.

- b. Disposal precautions:

Use appropriate sealed containers for disposal of contaminated packaging.

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## 14. Transport Information

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- a. UN number: Not available
- b. UN proper shipping name: Not regulated (IMDG, IATA)
- c. Transport hazard class(es): Not available
- d. Packing group (if applicable): Not available
- e. Marine pollutant: Not available
- f. Special precautions for user: Not available

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## 15. Regulatory Information

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- a. Occupational Safety and Health Act (Korea): Not applicable
  - b. Toxic Chemicals Control Act (Korea):
    - ☐ Toxic substances: Not applicable
    - ☐ Observational substances: Not applicable
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- ☐ Restricted substances: Not applicable
  - ☐ Prohibited substances: Not applicable
  - ☐ Controlled substances: Iron (CAS No. 7439-89-6) and its compounds
  - c. Regulations under the Act on the Registration and Evaluation of Chemicals (K-REACH):
    - ☐ Silica (CAS No. 7631-86-9): Phase-in substance
    - ☐ Iron Oxide (CAS No. 1317-61-9): Phase-in substance
  - d. Hazardous Materials Safety Control Act (Korea): Not applicable
  - e. Waste Control Act (Korea):
    - ☐ Pollutant release and transfer register substances: Not applicable
  - f. Other domestic and international regulations: Not available
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## 16. Other Information

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- a. Source of data: Not specified
- b. Date of first issue: 2008-05-20
- c. Number of revisions / Last revision date: 5.0 / 2025-11-07
- d. Additional information:

BIONEER does not warrant or represent the completeness or accuracy of this data. This document is intended to be used by individuals with appropriate technical expertise and at their own discretion. The user is responsible for determining the suitability of the product for its intended purpose, safe usage, and appropriate disposal. Disposal of hazardous substances may be subject to local laws and regulations.

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