


Material Safety Data Sheet
Version No.: 2.0 (Rev. date: 2022-09-16)

Buffer Cartridge ①

1. Product and company identification

- A. Product Name: Buffer Cartridge ①
- B. Recommended Use: Research Use Only
- C. Supply Information
 - Company: Bioneer
 - Address: 8-11, Munpyeongseo-ro, Daedeok-gu, Daejeon 306-220, Republic of Korea
 - Emergency telephone number: +82-42-930-8777

2. Hazards identification

- A. Classification of the substance or mixture
 - Flammable liquids, Category 3 H226
 - Acute toxicity (oral), Category 4 H302
 - Specific target organ toxicity – Repeated exposure, Category 2 H373
- B. Label elements
 - Hazard pictograms
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 - Signal word
 - Warning
 - Hazard statements
 - H226 Flammable liquid and vapor.
 - H302 Harmful if swallowed.
 - H373 May cause damage to organs through prolonged or repeated exposure (Oral, Dermal, Inhalation).
 - Precautionary statements
 - Precaution:
 - P210 Keep away from heat/hot surfaces/sparks/open flames/other ignition sources. No smoking.
 - P233 Keep container tightly closed.

- P240 Ground container and receiving equipment.
- P241 Use explosion-proof electrical, lighting, ventilating equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P260 Do not breathe gas, mist, dust, spray, vapors, fume.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear eye protection, protective clothing, protective gloves.

Treatment:

- P301+P312 IF SWALLOWED: Call medical institutions, a doctor, a POISON CENTER if you feel unwell.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- P314 Get medical advice, medical attention if you feel unwell.
- P330 Rinse mouth.
- P370+P378 In case of fire: Use dry sand, carbon dioxide (CO₂) to extinguish.

Storage:

- P403+P235 Store in a well-ventilated place. Keep cool.

Disposal:

- P501 Dispose of contents and container according to waste related regulations.

C. Hazards – Other hazards which do not result in classification – Hazard Risk

Not applicable

3. Composition/information on ingredients

Chemical name	Synonyms	CAS No.	Weight (%)
Ethanol	Ethyl alcohol	64-17-5	< 60%
Guanidine hydrochloride		50-01-1	< 20%
Tween 80		9005-65-6	< 10%

4. First aid measures

- A. First-aid measures after eye contact
Rinse eyes with water as a precaution.
- B. First-aid measures after skin contact
Rinse skin with water/shower.
Take off immediately all contaminated clothing.
- C. First-aid measures after inhalation
Remove person to fresh air and keep comfortable for breathing.
- D. First-aid measures after ingestion
Rinse mouth.

Call a poison center or a doctor if you feel unwell.

E. Other medical advice or treatment

Treat symptomatically.

5. Fire-fighting measures

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

Fire hazard: Flammable liquid and vapor.

C. Special protective equipment and precautions for fire-fighters

Protection during firefighting:

Do not attempt to take action without suitable protective equipment.

Self-contained breathing apparatus.

Complete protective clothing.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

Ventilate spillage area.

No open flames, no sparks, and no smoking.

Do not breathe gas, mist, dust, spray, vapors, fume.

Do not attempt to take action without suitable protective equipment.

Dispose of materials or solid residues at an authorized site.

B. Environmental precautions and protective procedures

Avoid release to the environment.

C. Methods and material for containment and cleaning up

Take up liquid spill into absorbent material.

Notify authorities if product enters sewers or public waters.

7. Handling and storage

A. Precautions for safe handling

○ Precautions for safe handling

Ensure good ventilation of the work station.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Flammable vapors may accumulate in the container.

Use explosion-proof equipment.
Wear personal protective equipment.
Do not breathe gas, mist, dust, spray, vapors, fume.

Hygiene measures

Do not eat, drink or smoke when using this product.
Always wash hands after handling the product.

B. Conditions for safe storage

Technical measures

Ground/bond container and receiving equipment.

Storage conditions

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

8. Exposure controls / personal protection

A. Occupational Exposure Limits

No data available

B. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

C. Personal protection

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment

Eye protection: Safety glasses

Hand protection: Protective gloves

Skin and body protection: Wear suitable protective clothing

9. Physical and chemical properties

A. Appearance: Liquid

B. Odor: No data available

C. Odor threshold: No data available

D. pH: No data available

E. Melting / freezing point: Not applicable / No data available

F. Initial boiling point and boiling range: No data available

G. Flash point: 24 °C

H. Evaporation rate: No data available

I. Flammability (solid, gas): Not applicable

J. Upper / lower flammability or explosive limits: No data available

K. Vapor pressure: No data available

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- L. Solubility: No data available
 - M. Vapor density: No data available
 - N. Relative density: No data available
 - O. Partition coefficient n-octanol/water: No data available
 - P. Auto-ignition temperature: No data available
 - Q. Decomposition temperature: No data available
 - R. Viscosity: No data available
 - S. Molecular mass: No data available
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10. Stability and Reactivity

- A. Chemical stability and Possibility of hazardous reactions
Flammable liquid and vapor.
Stable under normal conditions.
No dangerous reactions known under normal conditions of use.
 - B. Conditions to avoid
Avoid contact with hot surfaces.
Heat.
No flames, no sparks. Eliminate all sources of ignition.
 - C. Incompatible materials
No data available
 - D. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.
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11. Toxicological information

- A. Information on exposure routes
Oral: Harmful if swallowed.
Skin and eyes contact: Not classified
Inhalation: Not classified
 - B. Health hazards
Acute toxicity (oral): Harmful if swallowed.
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified
Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Not classified
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Respiratory sensitization: Not classified

Skin sensitization: Not classified

Carcinogenicity: Not classified

Mutagenicity: Not classified

Reproductive toxicity: Not classified

STOT–single exposure: Not classified

STOT–repeated exposure: May cause damage to organs through prolonged or repeated exposure (Oral, Dermal, Inhalation).

Aspiration hazard: Not classified

12. Ecological information

A. Exotoxicity

Ecology – general: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute): Not classified

Hazardous to the aquatic environment, long-term (chronic): Not classified

B. Persistence and degradability

No data available

C. Bioaccumulative potential

No data available

D. Mobility in soil

No data available

E. Other adverse effects

Ozone: Not classified

Other adverse effects: No additional information available

13. Disposal considerations

A. Disposal method

Dispose of contents/container in accordance with licensed collector's sorting instructions.

B. Disposal precaution

Flammable vapors may accumulate in the container.

14. Transport information

A. UN number: 1170

B. UN proper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

C. Transport hazard class(es): 3

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- D. Packaging group: III
 - E. Marine pollutant: Not dangerous for the environment
 - F. Special precautions for user: No data available
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15. Regulatory information

- A. Occupational Safety and Health Act
 - Hazardous Substances Prohibited for Manufacturing: Not applicable
 - Hazardous Substances Requiring Permission: Not applicable
 - Threshold Limit Values Chemicals: Applicable
 - Hazardous Substances Below Permissible Level: Not applicable
 - Hazardous Substances Subject to Working Environment Measurement: Not applicable
 - Hazardous Substances Subject to Workers Requiring Health Examination: Not applicable
 - Hazardous Substances Subject to Control: Not applicable
 - Substance Subject to PSM Submission: Applicable
 - B. Chemicals Control Act
 - Toxic Chemicals: Not applicable
 - Prohibited Chemicals: Not applicable
 - Restricted Chemicals: Not applicable
 - Substance requiring preparation for accidents: Not applicable
 - C. ACT ON REGISTRATION, EVALUATION, ETC. OF CHEMICALS (K-REACH)
 - Korea Existing Chemicals Inventory (KECI): Applicable
 - Priority Existing Chemical ('PEC') – subject to registration: Not applicable
 - Priority Control Substances (Korea): Not applicable
 - CMR Substances (Korea): Not applicable
 - D. Safety Control of Dangerous Substances Act
 - Safety Control of Dangerous Substances Act: Applicable
 - E. Wastes Control Act
 - Hazardous Substances in Designated wastes: Not applicable
 - Types of wastes: No data available
 - F. Other Domestic and International Regulatory Information
 - Domestic
 - Persistent Organic Pollutants(POPs) Control Act: Not applicable
 - Ozone Depleting Substances(ODS): Not applicable
 - International (EU Regulatory Information)
 - EU Candidate list (SVHC): Contains no substance on the REACH candidate list
 - EU authorization list (REACH Annex XIV): Contains no REACH Annex XIV substances
 - EU restriction list (REACH Annex XVII): Not applicable
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- US Regulatory Information
 - CERCLA Section 103 (40CFR302.4): Not applicable
 - EPCRA Section 302 (40CFR355.30): Not applicable
 - EPCRA Section 304 (40CFR355.40): Not applicable
 - EPCRA Section 313 (40CFR372.65): Not applicable
 - International agreements
 - No data available
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16. Other information

Bioneer Corporation makes no warranty or representation to its completeness, accuracy or currency. This material is intended for use by persons with pertinent technical skills and at their discretion and risk. It is the responsibility of the user to determine the product's suitability for its intended use, the product's safe use, and the product's proper disposal. Disposal of hazardous material may be subject to federal, state or local laws or regulations.
