

Material Safety Data Sheet

Version No.: 0.0 (Rev. date : 2021-01-21)

PWM1 Buffer

1. Product and company identification

Product Name : PWM1 Buffer

Recommended Use : For Research Use Only

Supply Information

○ Company : Bioneer

○ Address : 8-11 Munpyeongseo-ro, Daedeok-gu, Daejeon 34302, Republic of Korea

○ Emergency telephone number : 82-42-930-8777

2. Hazards identification

A. Classification of the hazardous chemical

Acute toxicity (oral): Class 3

Skin corrosive/skin irritant: Class 2

Serious eye damage/eye irritant : Class 1

Specific target organ toxicity (single exposure): Class 3 (Respiratory)

Chronic aquatic hazard : Class 4

B. Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statements

H302 : Harmful if swallowed

H315 Irritation on skin

H319 : Causes serious eye irritation

H335 May cause respiratory irritation

H413 May cause long-term harmful effects to aquatic organisms

C. Precautionary statements

– Prevention :

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area

P273 Avoid release to the environment.

P280 Wear Protective glove/protective clothing/eye protection/face protection

– Response :

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302+P352 IF ON SKIN: Gently wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P312 Call a medical center or doctor/physician you feel unwell.

P321 Specific treatment is urgent

P330 Rinse mouth

P332+P313 If skin irritation occurs: Get medical advice/ attention.

P362+P364 Take off contaminated clothing and wash before reuse.

– P370+P378 In case of fire: Use alcohol-type foaming agents for extinction.

– Storage :

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

– Disposal :

P501 Dispose of contents/container to information seted forth in the relevant laws and regulations.

D. Other Risks-Hazards Not Included in Risk-Hazard Classification

No information

3. Composition/information on ingredients

Chemical name	Synonyms	CAS No.	Weight (%)
Guanidinium chloride		50-01-1	< 50 %
Polysorbate 80		9050-57-1	<20%

4. First aid measures

A. Eye contact

If in eyes, rinse carefully with water for more than 20 minutes.

Take urgent medical attention.

If possible, remove contact lenses.

Keep washing.

If eye irritation persists, seek medical attention and advice

B. Skin Contact

Call a medical center or doctor/physician you feel unwell

Take off contaminated clothing and wash before reuse

For hot substances, soak affected areas in a large amount of cold water to eliminate heat

Take urgent medical attention

Remove contaminated clothing and shoes and isolate contaminated areas

Flush skin and eyes with water for at least 20 minutes immediately upon contact with substance

Wash clothes and shoes thoroughly before reuse.

Prevent the spread of contaminated areas on minor skin contact

C. Inhalation

If exposed to the substance and feel uncomfortable, consult a medical institution (doctor)

If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

D. Ingestion

Do not feed anything by mouth to an unconscious person.

Take immediate medical attention.

Rinse mouth.

If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance. Induce artificial respiration with proper respiratory medical device.

If swallowed and feel uncomfortable, consult a medical institution (doctor)

E. Notes to Physician

Have a medical personnel know about the substance and take protective measures.

5. Fire-fighting measures

A. Proper (improper) extinguishing Media

Use of alcohol, carbon dioxide or water spray in the digestion of this substance

Use dry sand or dirt during choking digestion

B. Special hazards from chemicals

The container may explode when heated.

May cause irritating and very toxic gases by burning or pyrolysis during burning

Some may be burned but do not ignite easily

Toxic gases may form during heat decomposition or combustion

Non-flammable, the substance itself is not burned, but can be decomposed during heating to cause corrosive/toxic fume

C. Firefighting Protection and Precautions

Some may be transported at high temperatures

Fire-fighters should wear appropriate protective equipment

Molten material can be transported

Leaking water can cause contamination

May cause skin and eye burns during contact

Fight fire from a safe distance

Let the ditch be dug up for the disposal of the extinguishing water and keep the material from scattering.

If you are not dangerous, move the container in the fire area

After the extinguishing of the tank fire, the container should be cooled with plenty of water

If there is a high tone in the tank fire or if the tank is discolored, pull back immediately

When the tank fires, pull back from the tank in flames

Fight fire from maximum distance or use unmanned hose holders or monitor nozzles

6. Accidental release measures

A. Personal Precautions

Avoid inhalation (dust, fume, gas, mist, vapor, spray)

Immediately wipe off any spills and follow preventive measures in the protective section.

Remove all ignition sources

If you are not at risk, stop the leak.

Do not touch the damaged container or leaking water without wearing adequate protection.

Cover with plastic sheet to stop spreading

Ground every equipment when treating the material

Be aware of the materials and conditions that should be avoided

B. Environmental precautions :

Avoid ingress into water, sewers, basements and confined spaces

Do not dispose to the environment

Leaking material can cause contaminants

C. Methods and material for containment and cleaning up

For small leaks, absorb into sand, non-combustible material and soak in container.

Absorb liquids and flush contaminated areas with detergent and water.

With a clean shovel, drain the leak into a clean, dry container, loosen and move the container out of the leak area

Cover the plastic sheet with a powder leak to prevent diffusion and keep it dry.

High volume leak liquid leak water away ditch

Absorb the spills into an inert material (e.g. dry sand or soil) and put it in a chemical waste container.

7. Handling and storage

A. Handling precautions

Avoid inhalation of dust, fume, gas, mist, vapor and spray.

Only handle in well-ventilated places.

Wash the treated area thoroughly after handling.

After the container has been emptied, the product residue may still remain, so follow all the MDS/label precautions.

Please use the handling/storage carefully.

Carefully open the forehead before opening.

Do not eat, drink or smoke when using this product

Avoid long term or repeated skin contact

Do not inhale the vapor from heated material

Do not enter the storage area without proper ventilation

Ground every equipment when treating the material

Beware of high temperature

Be aware of the materials and conditions that should be avoided

Work with reference to engineering management and personal protective equipment

B. Storage precautions

Drain the empty drum completely and prevent it from being properly put back on the drum regulator or place it properly.

Store container tightly sealed in a well-ventilated place.

Keep away from food and drinks.

Store in a lock storage area.

Keep away from heat/sparks/open flames/hot surfaces

8. Exposure controls / personal protection

A. Chemical Exposure Standards, Biological Exposure Standards Etc. :

Domestic Regulation: No information

ACHIH Regulation: No information

Biological Exposure Standards: No Information

B. Proper physical management : In case of dust, fume or mist during operation, ventilate air pollution to be maintained below exposure criteria. Facilities for storing or using this material should be equipped with a washing machine and safety shower.

C. Personal protection

Respiratory protection

Wear a respirator that is certified by the Occupational Safety and Health agency to match the physical

and chemical properties of the exposed material.

Wear an oxygen-deficient (< 19.6%), Pine-mask, or self-feeding respirator.

In the case of gas/liquid materials, the following respiratory protection is recommended—isolation type full-type mask (for organic compounds (acidic gas gas)) or isolated formula, whereas mold mask (for organic compounds (acid Gas Castle Gas)) or direct connection type full-type mask (for organic compounds (acidic gas if acid gas)) or, whereas the type gas mask (for organic compounds (acidic gas)) or motorized gas mask

Eyes protection :

Use goggles appropriate for the particular material and its physical and chemical properties

Hands protection :

Handle with gloves. Gloves must be inspected prior to use.

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

9. Physical and chemical properties

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- A. Appearance : No information
 - B. Odor : No information
 - C. Odor threshold : No information
 - D. pH : No information
 - E. Freezing/Melting point : No information
 - F. Boiling point and Range : No information
 - G. Flash point : No information
 - H. Evaporation speed : No information
 - I. Flammability (Solid, Gas) : No information
 - J. Ignition or explosion range : No information
 - K. Vapor pressure : No information
 - L. Solubility : No information
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- M. Vapor density : No information
 - N. Specific weight : No information
 - O. n-Octanol/Water solubility coefficient : No information
 - P. Self-Flammability : No information
 - Q. Decomposition temperature : No information
 - R. Viscosity : No information
 - S. Molecular weight : No information
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10. Stability and Reactivity

A. Chemical stability and toxic reaction potential

Stable under normal pressure conditions

May cause irritation, corrosive, toxic fumes in the event of fire

Inhalation of substances may be harmful

Some liquids may cause dizziness and choking vapors

The container may explode when heated.

Some may be burned but do not ignite easily

Non-flammable, the substance itself is not burned, but can be decomposed during heating to cause corrosive/toxic fume

May cause irritation or burn to skin and eyes

B. Conditions to avoid

Heat, sparks, flames, etc. Ignition source

C. Conditions to avoid

Flammable materials, reducing materials, toxic gases

D. Hazardous decomposition products

May cause irritating and very toxic gases by burning or pyrolysis during burning

Irritant, toxic gases

11. Toxicological information

A. Probable exposure paths

Irritation, nausea, diarrhea, voice loss, suffocation, headache, sleep disorder, vomiting

Short-term exposure causes irritation, chest pain and shortness of breath

B. Health hazard information

Acute toxicity

- Oral

Guanidium chloride LD50 475 mg / kg Rat

Polysorbate 80 LD50 34.5 Rat ※ NLM:ChemIDplus

- Skin

Guanidium chloride LD50 > 2000 mg / kg Rabbit

Polysorbate 80 No information

- Inhalation

Guanidium chloride LC50 5.319 mg / l 4 hr Rat

Polysorbate 80 No information

Skin corrosion/irritation

Guanidium chloride: Serious irritation to skin (Rabbit)

Polysorbate 80: No irritation to human skin ※ IUCLID

Serious eye damage/eye irritation

Guanidium chloride: Medium irritation to skin (Rabbit)

Polysorbate 80: cause necrosis to rabbit cornea

Respiratory or skin sensitization : No information

Carcinogenicity :

Industrial Safety Regulation : No information

Department of Labor Notice : No information

IARC : No information

OSHA : No information

ACGIH : No information

NTP : No information

EU CLP : No information

Germ cell mutagenicity

No information

Reproductive toxicity

No information

Specific target organ toxicity (single exposure)

Guanidium chloride: Irritation to respiratory system

Specific target organ toxicity (repeated exposure) No information

Aspiration hazard: No information

12. Ecological information

A. Biological toxicity

– Fish

Guanidium chloride: LC50 1758 mg /ℓ 48 hr

Polysorbate 80: No information

– Crustacean

No information

– Algae

No information

B. Persistency and Degradability

– Persistency: No information

– Degradability: No information

C. Bioconcentration

– Bioconcentration : No information

– Biodegradability : No information

D. Soil mobility: No information

E. Other toxic effects:

No information

13. Disposal considerations

- A. Disposal method : Dispose of contents and containers in accordance with the regulations, as specified in the Waste Control Act.
 - B. Disposal considerations : Please take into account the precautions set forth in the Waste Control Act.
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14. Transport information

- A. UN No : No information
 - B. UN proper shipping name : No information
 - C. Transport hazard class : No information
 - D. Packaging group : No information
 - E. Environmental hazards : No classification information
 - F. Special Safety Measures for Users Regarding Shipping or Shipping Measures : No information
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15. Regulatory information

- A. Industrial safety and health regulation : No information
- B. Hazardous chemical management regulation : No information
- C. Dangerous material management regulation : No information
- D. Waste management regulation : No information
- E. Other domestic and international regulations :

International Regulations

- OSHA Regulation : Not Applicable
 - CERCLA Regulation : Not Applicable
 - EPCRA 302 Regulation : Not Applicable
 - EPCRA 304 Regulation : Not Applicable
 - EPCRA 313 Regulation : Not Applicable
 - Rotterdam Convention Substance : Not Applicable
 - Stockholm Convention Substance : Not Applicable
 - Montreal Protocol Substance : Not Applicable
 - EU Classification (Confirmed Classification Result)
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Guanidium chloride: Xn; R22Xi; R36/38

– EU Classification (Risk Phrases) : Guanidium chloride: R22, R36/38

– EU Classification (Safety Phrases) : Guanidium chloride S2, S22

16. Other information

A. Source of Information

Guanidium chloride

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)

ECB-ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>) ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)

IUCLID Chemical Data Sheet, EC-ECB

International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>) TOXNET, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)

(<http://hazmat.nema.go.kr>) (<http://ncis.nier.go.kr>)

Polysorbate 80

NLM:ChemIDplus(Oral) IUCLID(Skin corrosive/irritation) NLM;HSDB(Serious eye damage/irritation) NLM; HSDB

NLM:ChemIDplus, NLM; HSDB, EPISUIET(Fish)

B. Initial Issue Date : 2021-01-21

C. Revision Count and Latest Revision Date : 0, 2021-01-21

D. Others

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.
