

Material Safety Data Sheet
Version No.: 0.0 (Rev. date : 2021-01-21)

RD Buffer

1. Product and company identification

Product Name : RD 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 4

Acute toxicity (Inhalation: dust/mist): Class 3

Chronic aquatic hazard : Class 3

B. Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statements

H302 : Harmful if swallowed

H331 : Toxic if inhaled

H412 : Harmful to aquatic life with long lasting effects

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.
- Response :
 - P301+P312 : IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 - P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - P311 : Call a POISON CENTOR or doctor/physician
 - P321 Specific treatment is urgent
 - P330 Rinse mouth
- 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 thiocyanate		593-84-0	< 70 %
Polyoxyethylene(10) octylphenyl ether		9002-93-1	<10%

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)

Remove victim to fresh air and keep at rest in a position comfortable for breathing

If you do not breathe, perform artificial respiration.

If breathing is difficult, supply oxygen

D. Ingestion

Rinse mouth.

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

Fire-fighters should wear appropriate protective equipment

Fight fire from a safe distance

Leaking water can cause contamination

Let no water leak into the container

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

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.

Let no water leak into the container

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

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 :

No information

Hands protection :

No information

Body protection :

No information

9. Physical and chemical properties

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

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

10. Stability and Reactivity

A. Chemical stability and toxic reaction potential

May cause or intensify fire; oxidizer

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

TOXIC: Inhalation, ingestion, skin contact of substances may cause serious damage or death

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 if contact with melted material

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, corrosive, toxic gases

11. Toxicological information

A. Probable exposure paths

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion Harmful if swallowed.

Skin May be harmful if absorbed through skin. Causes skin irritation.

B. Health hazard information

Acute toxicity

– Oral

Guanidine thioncyanate : LD50 593 mg/kg 593 mg/kg Rat

Polyoxyethylene(10) octylphenyl ether LD50 1800 mg/kg Rat

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

– Skin

Guanidium thiocyanate LD50 2000 mg/kg Rabbit

Polyoxyethylene(10) octylphenyl ether No information

– Inhalation

Guanidium thiocyanate LD50 2000 mg/kg Rabbit

Polyoxyethylene(10) octylphenyl ether No information

Skin corrosion/irritation

Guanidium thiocyanate: Class 1C (corrosive) (Rabbit) GHS, OECD TG 404 ※ECHA

Polyoxyethylene(10) octylphenyl ether Rabbit (500 uL/24H): Medium irritation(STANDARD DRAIZE TEST)

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

Serious eye damage/eye irritation

Guanidium thiocyanate No information

Polyoxyethylene(10) octylphenyl ether Rabbit (500 uL/24H): Medium irritation(STANDARD DRAIZE TEST)

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

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 thiocyanate: Irritation to respiratory system

Polyoxyethylene(10) octylphenyl ether No information

Specific target organ toxicity (repeated exposure)

Guanidine thiocyanate: Oral NOAEL=100 mg/kg bw/day, Rat, OECD TG 408, GLP ※ ECHA

Aspiration hazard: No information

12. Ecological information

A. Biological toxicity

– Fish

Guanidium thiocyanate LC50 89.1 mg/l 96 hr Poecilia reticulata (OECD TG 203 , GLP) ※ ECHA

Polyoxyethylene(10) octylphenyl ether

LC50 4.5 mg/l 96 hr Pimephales promelas

※ The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)

– Crustacean

Guanidine thiocyanate EC50 42.4 mg/l 48 hr Daphnia magna (OECD TG 202) ※ ECHA

Polyoxyethylene(10) octylphenyl ether LC50 11.2 mg/l 48 hr Daphnia magna ※ ECOTOX

– Algae

Guanidine thiocyanate EC50 130 mg/l 72 hr Desmodium subspicatus (DIN 38412-33) ※ ECHA

B. Persistency and Degradability

– Persistency:

Guanidine thiocyanate 01 -1.11 log Kow (log Pow, 25°C) ※ ECHA

Polyoxyethylene(10) octylphenyl ether log Kow 4.86 ※ National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)

– Degradability: No information

C. Bioconcentration

– Bioconcentration :

Guanidine thiocyanate 32 01 (%) 28 day (CO2 evolution) ※ ECHA

– 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.

14. Transport information

A. UN No :

Guanidine thiocyanate: 2811

Polyoxyethylene(10) octylphenyl ether: 3082

B. UN proper shipping name :

Polyoxyethylene(10) octylphenyl ether – ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(ptertiary-Octylphenoxy polyethyl alcohol)

C. Transport hazard class :

Guanidine thiocyanate: 6.1

Polyoxyethylene(10) octylphenyl ether: 9

D. Packaging group :

Guanidine thiocyanate: I

Polyoxyethylene(10) octylphenyl ether: III

E. Environmental hazards : No classification information

F. Special Safety Measures for Users Regarding Shipping or Shipping Measures :

EmS Fire: F-A

EmS Spill:

Guanidine thiocyanate: S-A

Polyoxyethylene(10) octylphenyl ether: S-F

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): Not Applicable

- EU Classification (Risk Phrases) : Not Applicable

– EU Classification (Safety Phrases) : Not Applicable

16. Other information

A. Source of Information

Guanidine thiocyanate

ECHA, sigma

Polyoxyethylene(10) octylphenyl ether

ChemIDplus

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

ECOTOX

National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)

Quantitative Structure Activity Relation(QSAR)

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

The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm)

B. Initial Issue Date : 2021-01-21

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

D. Others

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