

Material Safety Data Sheet

Version No.: 1.0(Revision Date: 2013-04-26)

Protein Synthesis Service

1. PRODUCT AND COMPANY IDENTIFICATION

- A. Product name : Protein Synthesis Service
- B. Recommended use : Research use only
- C. Supplier : Bioneer corporation
- Address : 8-11, Munpyeongseoro, Daedeok-gu, Daejeon 306-220 Republic of Korea
 - Telephone : +82-42-930-8777

2. HAZARDS IDENTIFICATION

A. Emergency Overview

Harmful if swallowed
Irritating to eyes, respiratory system and skin
May cause sensitization by inhalation and skin contact

B. GHS Label elements, including precautionary statements

- Pictogram :



- Signal word : Warning

- Hazard statement(s) :

H311 Toxic in contact with skin
H315 Causes skin irritation
H319 Causes serious eye irritation

- Precautionary statements :

Prevention :

P262 : Do not get in eyes, on skin, or on clothing.
P264 : Wash ... thoroughly after handling.

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

P280 : Wear protective gloves/protective clothing/eye protection/face protection

Response :

P302+P350 : IF ON SKIN: Gently wash with 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.

P308+P313 : IF exposed or concerned: Get medical advice/attention.

P314 : Get Medical advice/attention if you feel unwell.

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

P337+P313 : If eye irritation persists get medical advice/attention.

P361 : Remove/Take off immediately all contaminated clothing.

P362 : Take off contaminated clothing and wash before reuse.

Storage :

P405 : Store locked up.

Disposal :

P501 : Dispose of contents/container to

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight (%)
HYDRAZOIC ACID, SODIUM SALT	26628-22-8	0.05%
GLYCEROL	56-81-5	50%
SODIUM CHLORIDE	7647-14-5	0.58%
2-AMINO-2-(HYDROXYMETHYL)-1,3-PROP	77-86-1	0.61%
1,4-DITHIO-THREITOL	3483-12-3	0.02%
Water	7732-18-5	48.74%

4. FIRST AID MEASURES

A. Eye Contact : Rinse immediately with plenty of water, also under the eyelids, for at few minutes.
Remove contact lenses. If symptoms persist, call a physician.

B. Skin Contact : If skin problems occur, discontinue use. If skin irritation persists, call a physician.
May cause an allergic skin reaction.

C. Inhalation : Immediately call a doctor/physician.

D. Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

E. Most important symptoms/effects, acute and delayed: None known.

F. Notes to Physician: May cause sensitization of susceptible persons.

5. FIRE-FIGHTING MEASURES

- A. Suitable extinguishing media : Dry chemical, CO₂, water spray or alcohol-resistant foam
- B. Special Hazard : Emits toxic fumes under fire conditions.
- C. Special protective equipment for fire-fighters : As in any fire, wear self-contained breathing apparatus and full protective gear
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6. ACCIDENTAL RELEASE MEASURES

- A. Personal precautions : Use personal protective equipment. Avoid contact with skin, eyes and clothing.
- B. Environmental precautions : Should not be released into the environment.
- C. Methods for cleaning up : No information available.
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7. HANDLING AND STORAGE

- A. Advice on safe handling : Avoid inhalation. Avoid contact with eyes, skin, and clothing.
Avoid prolonged or repeated exposure.
- B. Storage condition : Keep containers tightly closed in a dry, cool and well-ventilated place.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- A. Exposure Guidelines : Not applicable.
- B. Engineering Measures : Safety shower and eye bath. Mechanical exhaust required.
- C. Personal Protective Equipment
- Eye protection : No special protective equipment required.
 - Hand protection : Impervious gloves.
 - Skin and body protection : No special protective equipment required.
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9. PHYSICAL AND CHEMICAL PROPERTIES

A. HYDRAZOIC ACID, SODIUM SALT

Physical state : liquid, None

pH : No information available

Melting/freezing point : No information available

Boiling point/boiling range : No information available

Flash point : No information available

Evaporation rate : No information available
Flammability (solid, gas) : No information available
Flammability Limits in Air (Upper/Lower) : No information available
Vapor pressure : No information available
Vapor Density : No information available
Relative Density : No information available
Water solubility : No information available
Solubility in other solvents : No information available
Partition coefficient :n-octanol/water :No information available
Autoignition temperature : No information available .
Decomposition temperature : No information available
Viscosity of product : No information available
Molecular weight : No information available

B. Glycerol

Physical state : liquid, None
pH : No information available
Melting/freezing point : 20°C
Boiling point/boiling range : 171 °C
Flash point : 160°C
Evaporation rate : No information available
Flammability (solid, gas) : No information available
Flammability Limits in Air (Upper/Lower) : 19/2.7%
Vapor pressure : 0.0025mmHg
Vapor Density : No information available
Relative Density : No information available
Water solubility : 1000g/L
Solubility in other solvents : 1.2313
Partition coefficient :n-octanol/water : No information available
Autoignition temperature : 370°C
Decomposition temperature : 290 °C
Viscosity of product : 954cP
Molecular weight : 92.09

C. Water

Physical state : liquid, None
pH : 7
Melting/freezing point : 0 °C
Boiling point/boiling range : 100 °C
Flash point : No information available
Evaporation rate : No information available

Flammability (solid, gas) : No information available
Flammability Limits in Air (Upper/Lower) : No information available
Vapor pressure : 23.8mmHg
Vapor Density : No information available
Relative Density : No information available
Water solubility : 100g/100mL
Solubility in other solvents : 1
Partition coefficient :n-octanol/water : -1.38
Autoignition temperature : No information available
Decomposition temperature : No information available
Viscosity of product : No information available
Molecular weight : 18.02

D. Sodium Chloride

Physical state : solid, white
pH : 6.7 (6.7~7.3)
Melting/freezing point : 801 °C
Boiling point/boiling range : 1413 °C
Flash point : No information available
Evaporation rate : No information available
Flammability (solid, gas) : No information available
Flammability Limits in Air (Upper/Lower) : No information available
Vapor pressure : 1mmHg
Vapor Density : No information available
Relative Density : No information available
Water solubility : 360g/L
Solubility in other solvents : No information available
Partition coefficient :n-octanol/water :-0.46
Autoignition temperature : No information available .
Decomposition temperature : No information available
Viscosity of product : No information available
Molecular weight : 58.44

E. 2-AMINO-2-(HYDROXYMETHYL)-1,3-PROP

Physical state : solide, white
pH : 10.4
Melting/freezing point : 171~172 °C
Boiling point/boiling range : 219~220 °C (at 10mmHg)
Flash point : 170 °C
Evaporation rate : No information available
Flammability (solid, gas) : No information available

Flammability Limits in Air (Upper/Lower) : No information available

Vapor pressure : 0.000002mmHg

Vapor Density : 550mg/mL

Relative Density : No information available

Water solubility : No information available

Solubility in other solvents : 1.846

Partition coefficient :n-octanol/water :-1.56

Autoignition temperature : No information available .

Decomposition temperature : No information available

Viscosity of product : No information available

Molecular weight : 121.14

F. DITHIOTHREITOL

Physical state : solid, white

pH : No information available

Melting/freezing point :40~44 °C

Boiling point/boiling range : 125~130 °C

Flash point : No information available

Evaporation rate : No information available

Flammability (solid, gas) : No information available

Flammability Limits in Air (Upper/Lower) : No information available

Vapor pressure : 1mmHg

Vapor Density : No information available

Relative Density : No information available

Water solubility : 360g/L

Solubility in other solvents : No information available

Partition coefficient :n-octanol/water : No information available

Autoignition temperature : No information available .

Decomposition temperature : No information available

Viscosity of product : No information available

Molecular weight : 154.25

10. STABILITY AND REACTIVITY

- A. Stability : Stable under normal conditions.
 - B. Hazardous reactions : No information available
 - C. Conditions to avoid : Combustible materials, Reducing materials
 - D. Materials to avoid : ignition sources
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E. Hazardous decomposition products : Causticity/toxic hume, toxic gas

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure : Skin Contact. Eye Contact. Inhalation.

Inhalation : Irritating to respiratory system.

Skin Contact : Irritating to skin.

Ingestion : Harmful if swallowed.

Eye Contact : Irritating to eyes.

12. ECOLOGICAL INFORMATION

A. Acute Toxicity : No information available

B. Persistence and degradability : No information available.

C. Bioaccumulative potential : No information available.

D. Mobility : No information available

E. Other adverse effects : No information available

13. DISPOSAL CONSIDERATIONS

A. Waste from Residues / Unused Products : Dispose of in accordance with local regulations.

B. Contaminated packaging : Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

A. UN/ID no : No information available

B. Proper shipping name : No information available

C. Hazard Class : No information available

D. Packing group : No information available

E. Description : No information available

F. Emergency Response Guide Number : No information available

15. REGULATORY INFORMATION

- A. Occupational health and safety act : No information available
- B. TCCA regulations : No information available
- C. Dangerous goods safety management act : No information available
- D. Waste management regulation : No information available
- E. International regulations : No information available

16. OTHER INFORMATION

- A. Issuing date : 26-April-2013
- B. Revision date : 26-April-2013

- C. Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BIONEER corporation shall not be held liable for any damage resulting from handling or from contact with the above product.
