

**Material Safety Data Sheet**  
**Version No.: 2.0 (Rev. date : 2021-08-24)**

**RNase A**

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1. Product and company identification

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Product Name : RNase A

Recommended Use : For Research Use Only

Supply Information

Company : Bioneer

Address : 8-11 Munpyeongseo-ro, Daedeok-gu, Daejeon 306-220, Republic of Korea

Emergency telephone number : 82-42-930-8777

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2. Hazards identification

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A. Classification of the hazardous chemical

No Data available

B. Label elements, including precautionary statements

Pictogram

No Data available

Signal word

No Data available

Hazard statements

No Data available

C. Precautionary statements

- Prevention : No Data available

- Response : No Data available

- Storage : No Data available

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

Health 1 Fire 1 Reactivity 0

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### 3. Composition/information on ingredients

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Chemical name	Synonyms	CAS No.	Weight (%)
RIBONUCLEASE A	RIBONUCLEASE A TYPE I (FROM BOVINE PANCREAS)	9001-99-4	> 90%

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### 4. First aid measures

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#### A. Eye contact

Rinse skin and eyes with water for at least 20 minutes immediately upon contact with substance. Take immediate medical attention.

#### B. Skin Contact

Take immediate 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.

#### C. Inhalation

: Take urgent medical attention. Move to Fresh air. If you do not breathe, perform artificial respiration. If breathing is difficult, supply oxygen.

#### D. Ingestion

: Do not feed anything by mouth to an unconscious person. Take immediate medical attention.

#### E. Notes to Physician

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

Do not administer adrenergic preparations.

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### 5. Fire-fighting measures

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#### A. Proper (improper) extinguishing Media

Small fire: Dry sand, dry chemical agent, alcohol-resistant fog, water spray, General fog, CO<sub>2</sub>

Large-scale fire: Water spray/fog, general

High-pressure state water (improper extinguishing agent)

#### B. Special hazards from chemicals

May cause ignition by heat, sparks, flames and the container may explode when heated

Some may be burned but do not ignite easily

May cause irritation or toxic fumes in the event of fire

Inhalation of substances may be harmful

Some liquids may cause dizziness and choking vapors

#### C. Firefighting Protection and Precautions

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Some may be transported at high temperatures

Leaking water can cause contamination

May cause skin and eye burns during contact

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 is 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

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## 6. Accidental release measures

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### A. Personal Precautions

Remove all ignition sources

If you are not at risk, stop the leak.

Be aware of the materials and conditions that should be avoided

Ventilate Contaminated Area

Do not touch or walk the exposed water to prevent dust formation.

Do not enter the appropriate space without proper protection, such as air respirator or a transmission mask until the appropriate air (oxygen concentration of 18 to 23.5%) is secured

### B. Environmental precautions :

Avoid ingress into water, sewers, basements and confined spaces

### C. Methods and material for containment and cleaning up

Rinse contaminated areas with large amounts of water when leaking small amounts

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

High volume leak liquid leak water away ditch

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.

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## 7. Handling and storage

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**A. Handling precautions**

Keep in mind the substances and conditions that should be avoided.

Wash thoroughly after handling.

Work with engineering controls and personal protective equipment pay attention to high temperatures

Be careful not to spill as it may cause choking in a confined place by lowering the oxygen concentration in the air when the material is leaked.

Check the oxygen concentration before entering the place, as there is a risk of loss of consciousness or death caused by oxygen deficiency in the high-concentration state of the air.

Be careful not to spill out, as the liquid evaporates quickly while the material is leaking, so there is a serious choking risk when it is in a confined place as it replaces air.

Be careful not to spill it as it will reach the harmful concentrations of this gas in the air at the time of material leakage.

Do not spray because it can reach the harmful concentrations of air particles very quickly.

At 20 °c, the substance evaporates somewhat slowly, so it reaches a hazardous concentration, keep it below 20 °c.

Evaporation at 20 °c rarely occurs, but do not spray because it can reach very quickly to the hazardous concentration of the air particles sprayed.

Evaporation at 20 °c rarely occurs, but do not sprinkle or spray when sprayed or sprayed can reach the harmful concentrations of air particles very quickly. (Especially for powders)

Evaporation at 20 °c rarely occurs, but do not spray because it can reach very quickly to the hazardous concentration of the air particles sprayed. (Especially for powders)

Check the oxygen concentration before entering the affected area.

Do not spray or sprinkle, as sprays or roots evaporate faster

**B. Storage precautions**

Keep tightly closed

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**8. Exposure controls / personal protection**

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- A. Chemical Exposure Standards, Biological Exposure Standards Etc. : No data available
- B. Proper physical management : Process isolation, use local exhaust or keep air level below exposure criteria
- 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.
  - Eyes protection : Use the glasses and security surfaces for chemical defense Please install washing equipment and emergency shower facilities near the workplace.
  - Hands protection : Wear suitable chemical resistant gloves.
  - Body protection : Wear suitable chemical resistance protective clothing
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## 9. Physical and chemical properties

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- A. Appearance : White Solid
- 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
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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

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A. Chemical stability and toxic reaction potential

Stable under normal pressure conditions

The container may explode when heated.

Some may ride but do not ignite easily

May cause irritation or toxic fumes in the event of fire

Inhalation of substances may be harmful

Some liquids may cause dizziness and choking vapors

B. Conditions to avoid

Heat, sparks, flames, etc. Ignition source

C. Conditions to avoid

Flammable irritants, toxic gases

D. Hazardous decomposition products

No information

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## 11. Toxicological information

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A. Probable exposure paths

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

Irritation during short-term exposure (in severe cases), nausea, vomiting, diarrhea

Short-term, prolonged exposure to allergic reactions

Can be absorbed by the body by inhalation and fire extinguisher

Can be absorbed by the body by inhalation of aerosols, through skin and digestive

Inhalation of steam can be absorbed by the body

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**B. Health hazard information**

- Acute toxicity : No information
- Skin corrosion/irritation : No information
- Serious eye damage/eye irritation : No information
- Respiratory or skin sensitization : No information
- Carcinogenicity : No information
- Germ cell mutagenicity: No information
- Reproductive toxicity : No information
- Specific target organ toxicity (single exposure) : No information
- Specific target organ toxicity (repeated exposure) : No information
- Aspiration hazard: No information

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**12. Ecological information**

- A. Biological toxicity : No information
- B. Persistency and Degradability : No information
- C. Bioconcentration : No information
- D. Soil mobility : No information
- E. Other toxic effects : No information

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**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 classification information
  - B. UN proper shipping name : No classification information
  - C. Transport hazard class : No classification information
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- D. Packaging group : No classification information
  - E. Environmental hazards : No classification information
  - F. Special Safety Measures for Users Regarding Shipping or Shipping Measures : No classification information
- IATA – TRANSPORT INFORMATION : Not Restricted IATA
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15. Regulatory information

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- 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 : No information
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16. Other information

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- A. Source of Information : No information
- B. Initial Issue Date : 2018-01-08
- C. Revision Count and Latest Revision Date :
- D. Others

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