

9/10/07

2.1.528 2 MB 0.485 27103D11.ps



**SIGMA-ALDRICH**

## Material Safety Data Sheet

Date Printed: 08/23/2007  
Date Updated: 08/06/2007  
Version 1.60

### Section 1 - Product and Company Information

<b>Product Name</b>	Ribonuclease A from bovine pancreas		
<b>Product Number</b>	R4642		
<b>Brand</b>	Sigma Chemical		
<b>Company Address</b>	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS, MO 63103 US		
<b>City, State, Zip, Country</b>			
<b>Technical Phone:</b>	800-325-5832	<b>Emergency Phone:</b>	314-776-6555
<b>Fax:</b>	800-325-5052		

### Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
RIBONUCLEASE A, SOLUTION	None	No		

**Formula Synonyms**

### Section 3 - Hazards Identification

#### Emergency Overview

Caution: Avoid contact and inhalation. Target organ(s): Kidneys.

<b>HMIS Rating</b>		
Health: 1*	Flammability: 0	Reactivity: 0

<b>NFPA Rating</b>		
Health: 1	Flammability: 0	Reactivity: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### Inhalation Exposure

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

#### Dermal Exposure

In case of contact, immediately wash skin with soap and copious amounts of water.

#### Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

### Section 5 - Fire Fighting Measures

**Autoignition Temp:** N/A

#### Extinguishing Media

**Suitable**  
Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

#### Firefighting

##### Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

##### Specific Hazard(s)

Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

#### Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

#### Methods for Cleaning Up

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

##### User Exposure

Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### Storage

##### Suitable

Keep tightly closed. Store at -20°C

### Section 8 - Exposure Controls / PPE

#### Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

#### Personal Protective Equipment

##### Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

##### Hand

Compatible chemical-resistant gloves.

##### Eye

Chemical safety goggles.

##### Skin-Specific

Chemical resistant apron.

**General Hygiene Measures**

Wash thoroughly after handling. Wash contaminated clothing before reuse.

**Section 9 - Physical/Chemical Properties**

<b>Appearance</b>	
<b>Physical State</b>	Liquid
<b>Molecular Weight:</b>	N/A
<b>pH</b>	N/A
<b>BP/BP Range</b>	N/A
<b>MP/MP Range</b>	N/A
<b>Freezing Point</b>	N/A
<b>Vapor Pressure</b>	N/A
<b>Vapor Density</b>	N/A
<b>Saturated Vapor Conc.</b>	N/A
<b>SG/Density</b>	N/A
<b>Bulk Density</b>	N/A
<b>Odor Threshold</b>	N/A
<b>Volatile%</b>	N/A
<b>VOC Content</b>	N/A
<b>Water Content</b>	N/A
<b>Solvent Content</b>	N/A
<b>Evaporation Rate</b>	N/A
<b>Viscosity</b>	N/A
<b>Partition Coefficient</b>	N/A
<b>Decomposition Temp.</b>	N/A
<b>Flash Point °F</b>	N/A
<b>Flash Point °C</b>	N/A
<b>Explosion Limits</b>	N/A
<b>Flammability</b>	N/A
<b>Autoignition Temp</b>	N/A
<b>Solubility</b>	N/A

N/A = not available

**Section 10 - Stability and Reactivity**

<b>Stability</b>	Stable
<b>Materials to Avoid</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Hazardous Decomposition Products
<b>Hazardous Decomposition Products</b>	Nature of decomposition products not known.

**Hazardous Polymerization**  
**Hazardous Polymerization**  
Will not occur.

**Section 11 - Toxicological Information**

<b>Route of Exposure</b>	
<b>Skin Contact</b>	May cause skin irritation.
<b>Skin Absorption</b>	May be harmful if absorbed through the skin.
<b>Eye Contact</b>	May cause eye irritation.
<b>Inhalation</b>	May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Sensitization</b>	
<b>Sensitization</b>	Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Target Organ(s) or System(s)**  
Kidneys.

**Signs and Symptoms of Exposure**  
Exposure can cause: Nausea, headache, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**RTECS Number:** N/A

**Section 12 - Ecological Information**

No data available.

**Section 13 - Disposal Considerations**

**Appropriate Method of Disposal of Substance or Preparation**  
Contact a licensed professional waste disposal service to dispose of this material.  
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.  
Observe all federal, state, and local environmental regulations.

**Section 14 - Transport Information**

**DOT**  
**Proper Shipping Name:** None  
**Non-Hazardous for Transport:** This substance is considered to be non-hazardous for transport.

**IATA**  
**Non-Hazardous for Air Transport:** Non-hazardous for air transport.

**Section 15 - Regulatory Information**

**US Classification and Label Text**  
**US Statements**  
Caution: Avoid contact and inhalation. Target organ(s): Kidneys.

**United States Regulatory Information**  
**SARA Listed:** No

**Canada Regulatory Information**

**WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

---

**Section 16 - Other Information**

---

**Disclaimer**

For R&D use only. Not for drug, household or other uses.

**Warranty**

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

