



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 07/22/2005
Date Updated: 04/06/2004
Version 1.20

Section 1 - Product and Company Information

Product Name: Adenosine 3',5'-cyclic monophosphate, minimum 99% HPLC
Product Number: A9501
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 800 325 5052
Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Table with 5 columns: Substance Name, CAS #, SARA 313, EC no, Annex I Index Number. Row 1: (-)-ADENOSINE 3',5'-CYCLIC MONOPHOSPHATE,98%, 60-92-4, No, 200-492-9

Formula: C10H12N5O6P
Synonyms: Adenosine cyclic monophosphate, Adenosine 3',5'-cyclic monophosphate, Adenosine cyclic 3',5'-phosphate, Adenosine 3',5'-cyclophosphate, Adenosine 3',5'-monophosphate, Adenosine 3',5'-phosphate, 3',5'-Amp, cAMP, Cyclic adenosine 3',5'-phosphate, Cyclic 3',5'-adenylic acid, Cyclic AMP, Cyclic 3',5'-amp, NSC 143670

Section 3 - Hazards Identification

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 skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
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 protective equipment.

Methods for Cleaning Up: Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 8 - Exposure Controls / PPE

Engineering Controls: Mechanical exhaust.

Personal Protective Equipment: Other
Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

Section 9 - Physical/Chemical Properties

Appearance: Color White, Form Powder

Molecular Weight: 329.22 AMU

pH: N/A
BP/BP Range: N/A
MP/MP Range: > 300 °C
Freezing Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Saturated Vapor Conc.: N/A
SG/Density: N/A
Bulk Density: N/A
Odor Threshold: N/A
Volatile%: N/A
VOC Content: N/A
Water Content: 2 - 4 %
Solvent Content: N/A
Evaporation Rate: N/A
Viscosity: N/A
Partition Coefficient: N/A
Decomposition Temp.: N/A
Flash Point °F: N/A
Flash Point °C: N/A
Explosion Limits: N/A

Flammability: N/A

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Autoignition Temp N/A  
Optical Rotation Degree of Rotation:  
-64 - -54 (+/-2)  
Solubility N/A

Solvent:H2O7 g/l

N/A = not available

### Section 10 - Stability and Reactivity

**Stability**  
Stable  
Stable.

**Hazardous Decomposition Products**  
Hazardous Decomposition Products  
Carbon monoxide, Carbon dioxide, Nitrogen oxides.

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

### Section 11 - Toxicological Information

**Route of Exposure**  
Multiple Routes  
May be harmful by inhalation, ingestion, or skin absorption. May cause irritation.

**Conditions Aggravated by Exposure**  
The toxicological properties have not been thoroughly investigated.

**RTECS Number:** AU7357600

#### Chronic Exposure - Mutagen

Species	Dose	Cell Type	Mutation test
Human	100 UMOL/L	Other cell types	Other mutation test systems
Human	100 UMOL/L	Other cell types	Other mutation test systems
Rat	10 MMOL/L	liver	Other mutation test systems
Rat	10 MMOL/L	liver	Other mutation test systems
Rat	10 MMOL/L	Other cell types	Other mutation test systems
Rat	10 MMOL/L	Other cell types	Other mutation test systems
Rat	10 MMOL/L	Other cell types	Other mutation test systems
Rat	10 MMOL/L	Other cell types	DNA inhibition
Rat	10 MMOL/L	Other cell types	DNA inhibition
Mouse	500 UMOL/L	fibroblast	Other mutation test systems
Mouse	500 UMOL/L	fibroblast	Other mutation test systems

### Section 12 - Ecological Information

No data available.

### Section 13 - Disposal Considerations

**Appropriate Method of Disposal of Substance or Preparation**  
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

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**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

**EU Additional Classification**  
**Safety Statements** S: 22 24/25  
Do not breathe dust. Avoid contact with skin and eyes.

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

**TSCA Inventory Item:** Yes Yes

**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: Yes

### 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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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**SIGMA-ALDRICH**

## Material Safety Data Sheet

Date Printed: 03/30/2004  
Date Updated: 09/02/2002  
Version 1.10

### Section 1 - Product and Company Information

**Product Name** ADENOSINE DEAMINASE TYPE V FROM BOVINE SPLEEN  
**Product Number** A6648  
**Brand** Sigma Chemical

**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 314 771 5765  
**Fax:** 800 325 5052

**Emergency Phone:** 414 273 3850 Ext. 5996

### Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>
ADENOSINE DEAMINASE TYPE V FROM CALF INTESTINAL MUCOSA	None	No

**Formula**  
**Synonyms**

### Section 3 - Hazards Identification

**Emergency Overview**  
Caution: Avoid contact and inhalation.

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 skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**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.

### Section 6 - Accidental Release Measures

**Procedure(s) of Personal Precaution(s)**  
Wear protective equipment.

**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 8 - Exposure Controls / PPE

**Engineering Controls**  
Mechanical exhaust required.

**Personal Protective Equipment**  
**Other**  
Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

### 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

Solubility N/A

N/A = not available

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### Section 10 - Stability and Reactivity

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**Stability**  
Stable  
Stable.

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

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### Section 11 - Toxicological Information

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**Route of Exposure**  
Multiple Routes  
May be harmful by Inhalation, ingestion, or skin absorption. May cause Irritation.

**Sensitization**  
Sensitization  
Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Conditions Aggravated by Exposure**  
The toxicological properties have not been thoroughly investigated.

**RTECS Number:**

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### Section 12 - Ecological Information

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No data available.

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### Section 13 - Disposal Considerations

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**Appropriate Method of Disposal of Substance or Preparation**  
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.

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### Section 14 - Transport Information

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**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.

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### Section 15 - Regulatory Information

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**US Classification and Label Text**  
US Statements  
Caution: Avoid contact and inhalation.

**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

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### Section 16 - Other Information

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**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. 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 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.