

**SIGMA-ALDRICH****Material Safety Data Sheet**

Version 3.1  
Revision Date 06/19/2009  
Print Date 05/25/2010

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : (-)-Epinephrine (+)-bitartrate salt  
Product Number : E4375  
Brand : Sigma  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +18003255832  
Fax : +18003255052  
Emergency Phone # : (314) 776-6555

RECEIVED  
JUN 01 2010  
Safety & Environmental  
Health

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : L-Adrenaline(+)-bitartrate salt  
L-3,4-Dihydroxy- $\alpha$ -(methylaminomethyl)benzyl alcohol D-  
hydrogenbitartrate salt  
L-Adrenaline D-hydrogentartrate  
L-Epinephrine D-hydrogentartrate

Formula : C<sub>9</sub>H<sub>13</sub>NO<sub>3</sub> · C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>  
Molecular Weight : 333.29 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Epinephrine hydrogen tartrate 51-42-3	200-097-1	-	-

**3. HAZARDS IDENTIFICATION****Emergency Overview****OSHA Hazards**

Target Organ Effect, Highly toxic by ingestion, Irritant, Teratogen

**Target Organs**

Heart, Smooth muscle.

**HMIS Classification**

Health Hazard: 3  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 0

**NFPA Rating**  
Health Hazard: 4

Fire: 0  
Reactivity Hazard: 0

**Potential Health Effects**

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation. May be fatal if absorbed through skin.
Eyes	Causes eye irritation.
Ingestion	May be fatal if swallowed.

**4. FIRST AID MEASURES**

**General advice**  
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**  
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

**In case of skin contact**  
Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES**

**Flammable properties**  
Flash point no data available  
Ignition temperature no data available  
**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters**  
Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**  
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods for cleaning up**

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**

**Handling**  
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Storage**

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2 - 8 °C

Light sensitive. Store under inert gas. Air sensitive.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

#### Eye protection

Face shield and safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form solid  
Colour white

### Safety data

pH 4 at 20 g/l  
Melting point 155 °C (311 °F)  
Boiling point no data available  
Flash point no data available  
Ignition temperature no data available  
Lower explosion limit no data available  
Upper explosion limit no data available  
Water solubility no data available

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Materials to avoid

Bases, Oxidizing agents, Iron and iron salts., Copper

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - mouse - 4 mg/kg

### Irritation and corrosion

no data available

### Sensitisation

no data available

### Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Genotoxicity in vitro - mouse - Other cell types

DNA inhibition

Laboratory experiments have shown teratogenic effects.

Reproductive toxicity - mouse - Subcutaneous

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

### Signs and Symptoms of Exposure

Laboratory experiments in animals have shown fetotoxic results., Palpitation, Tremors, Weakness, Headache

### Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation. May be fatal if absorbed through skin.
Eyes	Causes eye irritation.
Ingestion	May be fatal if swallowed.
Target Organs	Heart, Smooth muscle.,

### Additional Information

RTECS: DO3500000

## 12. ECOLOGICAL INFORMATION

### Elimination Information (persistence and degradability)

no data available

### Ecotoxicity effects

no data available

### Further information on ecology

no data available

**13. DISPOSAL CONSIDERATIONS****Product**

Observe all federal, state, and local environmental regulations. 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.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN-Number: 2811 Class: 6.1 Packing group: I

Proper shipping name: Toxic solids, organic, n.o.s. (Epinephrine hydrogen tartrate)

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN-Number: 2811 Class: 6.1 Packing group: I EMS-No: F-A, S-A

Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Epinephrine hydrogen tartrate)

Marine pollutant: No

**IATA**

UN-Number: 2811 Class: 6.1 Packing group: I

Proper shipping name: Toxic solid, organic n.o.s. (Epinephrine hydrogen tartrate)

**15. REGULATORY INFORMATION****OSHA Hazards**

Target Organ Effect, Highly toxic by ingestion, Irritant, Teratogen

**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Epinephrine hydrogen tartrate	51-42-3	

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Epinephrine hydrogen tartrate	51-42-3	

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

**16. OTHER INFORMATION**

Sigma - E4375

Delivery 0835569893-000010 Purchase Order 38053U-MATCH FUNDS

Sigma-Aldrich Corporation  
[www.sigma-aldrich.com](http://www.sigma-aldrich.com)

Page 5 of 6

**Further information**

Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. 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 Co., 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.

Sigma - E4375

Delivery 0835569893-000010 Purchase Order 38053U-MATCH FUNDS

Sigma-Aldrich Corporation  
[www.sigma-aldrich.com](http://www.sigma-aldrich.com)

Page 6 of 6

