

## MATERIAL SAFETY DATA SHEET

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Version 1.6

## Section 1 - Product and Company Information

|                  |   |
|------------------|---|
| Product Name     | ACETYLCHOLINE CHLORIDE                        |
| Product Number   | A6625   |
| Brand            | SIAL  |
| Company          | Sigma-Aldrich                                 |
| Address          | 3050 Spruce Street<br>SAINT LOUIS MO 63103 US |
| Technical Phone: | 800-325-5832                                  |
| Fax:             | 800-325-5052                                  |
| Emergency Phone: | 314-776-6555                                  |

## Section 2 - Composition/Information on Ingredient

|                        |  |          |
|------------------------|--|----------|
| Substance Name         | CAS #  | SARA 313 |
| ACETYLCHOLINE CHLORIDE | 60-31-1  | No       |
| Formula                | C7H16NO2Cl   |          |
| Synonyms               | Acecholin * Acecoline *<br>2-Acetoxyethyltrimethylammonium chloride *<br>Acetylcholine chloride * O-Acetylcholine chloride<br>* Acetylcholine hydrochloride * Acetylcholinium<br>chloride *<br>2-(Acetyloxy)-N,N,N-trimethylethanaminium chlorid<br>* ACH chloride * Ammonium,<br>(2-hydroxyethyl)trimethyl-, chloride, acetate *<br>Arterocoline * Choline, chloride acetate *<br>Ethanaminium, 2-(acetyloxy)-N,N,N-trimethyl-,<br>chloride * (2-Hydroxyethyl)trimethylammonium<br>chloride acetat * Miochol * Ovisot * TL 1505 |          |
| RTECS Number:          | FZ9800000  |          |

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Irritant.

Irritating to eyes, respiratory system and skin.

Lachrymator. Target organ(s): Cardiovascular system. Central nervous system.

## HMIS RATING

HEALTH: 2\*

FLAMMABILITY: 0

REACTIVITY: 0

## NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

\*additional chronic hazards present.

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

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## Section 4 - First Aid Measures

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### 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 not breathing give artificial respiration. If breathing is difficult, give oxygen.

### DERMAL EXPOSURE

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

### EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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## Section 5 - Fire Fighting Measures

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### FLASH POINT

N/A

### AUTOIGNITION TEMP

N/A

### FLAMMABILITY

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.

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## Section 6 - Accidental Release Measures

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### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

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

### 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.

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## Section 7 - Handling and Storage

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### HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

### STORAGE

Suitable: Keep tightly closed. Store under nitrogen.  
Store at -20°C

### SPECIAL REQUIREMENTS

Very hygroscopic. Store under inert gas.

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## Section 8 - Exposure Controls / PPE

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### 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 dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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## Section 9 - Physical/Chemical Properties

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| Appearance            | Physical State: Solid                  |                            |
|-----------------------|--|----------------------------|
|                       | Color: White                           |                            |
|                       | Form: Fine crystals                    |                            |
| Property              | Value                                  | At Temperature or Pressure |
| Molecular Weight      | 181.66 AMU                             |                            |
| pH                    | N/A                                    |                            |
| BP/BP Range           | N/A                                    |                            |
| MP/MP Range           | 148 °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         | N/A                                    |                            |
| Solvent Content       | N/A                                    |                            |
| Evaporation Rate      | N/A                                    |                            |
| Viscosity             | N/A                                    |                            |
| Surface Tension       | N/A                                    |                            |
| Partition Coefficient | N/A                                    |                            |
| Decomposition Temp.   | N/A                                    |                            |
| Flash Point           | N/A                                    |                            |
| Explosion Limits      | N/A                                    |                            |
| Flammability          | N/A                                    |                            |
| Autoignition Temp     | N/A                                    |                            |
| Refractive Index      | N/A                                    |                            |
| Optical Rotation      | N/A                                    |                            |
| Miscellaneous Data    | N/A                                    |                            |
| Solubility            | Solvent: clear, colorless 0.1 g/ml H2O |                            |

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.  
Materials to Avoid: Strong oxidizing agents.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen chloride gas.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### Section 11 - Toxicological Information

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#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: Causes eye irritation.  
Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.  
Ingestion: May be harmful if swallowed.

#### TARGET ORGAN(S) OR SYSTEM(S)

Vascular system. Heart. Central nervous system. Smooth muscle.  
Skeletal muscle. Adrenal medulla.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Spastic paralysis Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

#### TOXICITY DATA

Oral  
Rat  
2500 mg/kg  
LD50

Subcutaneous  
Rat  
250 MG/KG  
LD50

Intravenous  
Rat  
22 MG/KG  
LD50

Oral  
Mouse  
3000 mg/kg  
LD50

Intraperitoneal  
Mouse  
15300 UG/KG  
LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold.  
Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Other changes.

Subcutaneous  
Mouse  
170 MG/KG

LD50

Intravenous  
Mouse  
10 MG/KG  
LD50

Remarks: Peripheral Nerve and Sensation: Spastic paralysis with or without sensory change.

Intravenous  
Guinea pig  
7700 UG/KG  
LD50

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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

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.

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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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### EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xi  
Indication of Danger: Irritant.  
R: 36/37/38  
Risk Statements: Irritating to eyes, respiratory system and skin.  
S: 26  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Irritant.  
Risk Statements: Irritating to eyes, respiratory system and skin.  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
US Statements: Lachrymator. Target organ(s): Cardiovascular system. Central nervous system.

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No  
TSCA INVENTORY ITEM: 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

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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. 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.