

MATERIAL SAFETY DATA SHEET

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Version 1.13

Section 1 - Product and Company Information

Product Name CETYLTRIMETHYLAMMONIUM BROMIDE, 95%
Product Number 855820
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
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 |
|---------------------------------|---------|----------|
| CETYLTRIMETHYL AMMONIUM BROMIDE | 57-09-0 | No |

Formula C19H42N.Br
Synonyms Acetoquat CTAB * Bromat * Centimide * Cetarol *
Cetrimonium bromide * Cetyltrimethylammonium
bromide * N-Cetyltrimethylammonium bromide *
Cirrasol-OD * CTAB * Cycloton V *
1-Hexadecanaminium, N,N,N-trimethyl-, bromide *
Hexadecyltrimethylammonium bromide *
N-Hexadecyl-N,N,N-trimethylammonium bromide *
(1-Hexadecyl)trimethylammonium bromide *
Lauroseptol * Lissolamine * Lissolamine A * Micol
* Palmityltrimethyl ammonium bromide * Pollacid *
Quamonium * Softex KW * Trimethylcetylammmonium
bromide * N,N,N-Trimethyl-1-hexadecanaminium
bromide * Trimethylhexadecylammmonium bromide

RTECS Number: BQ7875000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic (USA) Harmful (EU). Dangerous for the environment.
Harmful if swallowed. Irritating to respiratory system and skin.
Risk of serious damage to eyes. Very toxic to aquatic organisms.

HMIS RATING

HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING

HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 0

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 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.

Section 5 - Fire Fighting Measures

FLASH POINT

471.2 °F 244 °C Method: closed cup

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.

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

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 7 - Handling and Storage

HANDLING

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

STORAGE

Suitable: Keep tightly closed.

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 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.

Section 9 - Physical/Chemical Properties

| | | |
|-----------------------|--|----------------------------|
| Appearance | Physical State: Solid | |
| Property | Value | At Temperature or Pressure |
| Molecular Weight | 364.46 AMU | |
| pH | 5.0 - 7.0 | |
| BP/BP Range | N/A | |
| MP/MP Range | 230 °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 | Log Kow: 3.18 | |
| Decomposition Temp. | N/A | |
| Flash Point | 471.2 °F 244 °C | Method: closed cup |
| Explosion Limits | N/A | |
| Flammability | N/A | |
| Autoignition Temp | N/A | |
| Refractive Index | N/A | |
| Optical Rotation | N/A | |
| Miscellaneous Data | N/A | |
| Solubility | Solubility in Water:0.1 M in H ₂ O, 20°C complete, colorless | |

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

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

HAZARDOUS POLYMERIZATION

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes severe eye irritation.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

410 mg/kg

LD50

Intravenous

Rat

44 MG/KG

LD50

Remarks: Lungs, Thorax, or Respiration:Other changes.

Intraperitoneal

Mouse

106 MG/KG

LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration:Respiratory depression.

Intravenous

Mouse

32 MG/KG

LD50

Remarks: Lungs, Thorax, or Respiration:Other changes.

Intraperitoneal

Rabbit

125 MG/KG

LD50

Subcutaneous

Rabbit

125 MG/KG

LD50

Subcutaneous

Guinea pig

100 MG/KG

LD50

IRRITATION DATA

Skin

Mouse

50 mg

1H
Remarks: Open irritation test

Eyes
Rabbit
450 mg
Remarks: Severe irritation effect

CHRONIC EXPOSURE - TERATOGEN

Species: Mouse
Dose: 10500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 10500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (10D PREG)
Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Mouse
Dose: 35 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (12D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse
Dose: 35 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 0.03 mg/l

Test Type: LC50 Fish
Species: Brachydanio rerio
Time: 96 h
Value: 0.3 mg/l

ELIMINATION

Elimination: 100 %

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

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s
IATA UN Number: 3077
Hazard Class: 9
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn-N
Indication of Danger: Harmful. Dangerous for the environment.
R: 22-37/38-41-50
Risk Statements: Harmful if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes. Very toxic to aquatic organisms.
S: 26-39-61
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection. Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic (USA) Harmful (EU). Dangerous for the environment.
Risk Statements: Harmful if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes. Very toxic to aquatic organisms.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection. Avoid release to the environment. Refer to special instructions/safety data sheets.

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: Yes
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.