

# Cetyltrimethyl Ammonium Bromide

## Material Safety Data Sheet

### Section 1 – Chemical Product and Company Information

Product Identification: Food DNA Extraction Kit  
Food Lyse Buffer  
Fast Lyse 6

MSDS Name: Cetyltrimethyl Ammonium Bromide

Manufacturer/Supplier Identification for chemical:  
Sigma-Aldrich  
3300 South Second Street  
St. Louis, MO 63118

Supplier Identification for Kit  
Genetic ID NA, Inc.  
P.O. Box 1810  
Fairfield, IA 52556

Emergency Information: 641-472-9979

### Section 2 – Composition and Ingredient Information

Chemical Description:  
CETYLTRIMETHYL AMMONIUM BROMIDE  
CAS #57-09-0. SARA 313: No applicable information.  
Formula C<sub>19</sub>H<sub>42</sub>N.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,\* Trimethylhexadecylammonium 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, may cause long-term adverse effects in the aquatic environment.

#### 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.

Appearance: White powder

Target Organs: Refer to Section 11

Potential Health Effects

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

Eye: Irritating

Skin: Irritating

Ingestion: See Section 11

Inhalation: Irritating

Chronic: See Section 11

#### **Section 4 – First Aid Measures**

**EYES:** 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.

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

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

**INHALATION:** If inhaled, remove to fresh air. If not breathing give artificial respiration. Call a physician. If breathing is difficult, give oxygen.

Notes to Physician: See Section 11

Antidote: See Section 11

#### **Section 5 – Firefighting Measures**

General Information:

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.

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 and Personal Protection**

### ENGINEERING CONTROLS

Mechanical exhaust required. Safety shower and eye bath.

### 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 and Chemical Properties**

Appearance/Physical State:	Solid
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 <sub>2</sub> 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, and hydrogen bromide gas.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization will not occur

## **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 µg/kg  
Route of Application: Intraperitoneal  
Exposure Time: (8D PREG)  
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse  
Dose: 10500 µg/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 – Transportation Information**

### DOT

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

UN#: 3077

Class: 9

Packing Group: Packing Group III

Hazard Label: Class 9

PIH: Not PIH

### 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: 26-36-60-61

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. This material and its container must be disposed of as hazardous waste. 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, may cause long-term adverse effects in the aquatic environment.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. This material and its container must be disposed of as hazardous waste. 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

### **Section 16 – Additional Information**

MSDS Creation Date: 12 February 2006

Revision Date:

*The information above is based on our current knowledge and is believed to be accurate. However, we make no guarantee for any specific product features or any other guarantee, express or implied. We assume no liability resulting from its use and we shall not establish a legally valid contractual relationship. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Genetic ID NA, Inc. and/or its affiliates be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Genetic ID NA, Inc. has been advised of the possibility of such damages.*