

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

#### 1.1. Product Identifier

**Product Form:** Substance

**Product Name:** Hexadecyltrimethylammonium bromide

**CAS No:** 57-09-0

**Product Code:** VOLO10031

**Standard InChI:** InChI=1S/C19H42N.BrH/c1-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20(2,3)4;/h5-19H2,1-4H3;1H/q+1;/p-1

#### 1.2. Intended Use of the Product

**Use of the substance/mixture:** For laboratory research purposes.

#### 1.3. Name, Address, and Telephone of the Responsible Party

##### Manufacturer

Volochem, Inc.

2600 Hilltop Dr.

Bldg B #C211

Richmond, CA 94806

T 510.748.0159

[www.volochem.com](http://www.volochem.com)

#### 1.4. Emergency Telephone Number

**Emergency Number** : 510-748-0159 (9a-5p M-F)

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

##### Classification (GHS-US)

Acute toxicity, Oral (Category 4)

Skin irritation (Category 2)

Serious eye damage (Category 1)

Specific target organ toxicity - single exposure (Category 3)

Acute aquatic toxicity (Category 1)

Chronic aquatic toxicity (Category 1)

#### 2.2. Label Elements

##### GHS-US Labeling

**Pictogram(s):** GHS05, GHS07, GHS09



**Signal word:** Danger

**Hazard statement(s)**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.

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### Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P330	Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P362	Take off contaminated clothing and wash before reuse.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container in accordance with appropriate regulations.

### 2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

No additional information is available.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Name	Synonym(s)	Product Identifiers
Hexadecyltrimethylammonium bromide	CTAB, Cetyltrimethylammonium bromide, Cetrimonium bromide, Cetrimide, Palmityltrimethylammonium bromide	VOLO10031 CAS No. 57-09-0

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### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of 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

Take off contaminated clothing and shoes immediately. 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. Continue rinsing eyes during transport to hospital.

##### If swallowed

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

#### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms/Injuries After Inhalation:** May be harmful if inhaled.

**Symptoms/Injuries After Skin Contact:** May be harmful if absorbed through skin. Causes skin burns.

**Symptoms/Injuries After Eye Contact:** Causes eye burns.

**Symptoms/Injuries After Ingestion:** May be harmful if swallowed.

**Chronic Symptoms:** The chronic effects of this substance are unknown.

#### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

No data available

### SECTION 5: FIREFIGHTING MEASURES

#### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Product is not considered flammable, but may burn under fire conditions, releasing toxic gases.

**Explosion Hazard:** Product is not explosive.

**Hazardous Combustion Products:** Carbon oxides, nitrogen oxides, hydrogen bromide

#### 5.3. Advice for Firefighters

**Firefighting Instructions:** Exercise caution when fighting any chemical fire.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

Wear self-contained breathing apparatus for fire fighting if necessary.

#### 5.4. NFPA Rating

Health Hazard: 2

Fire Hazard: 1

Reactivity Hazard: 0

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### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

##### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

##### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Avoid dust formation. Avoid breathing dust.

#### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

#### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Contain and collect as any solid.

**Methods for Cleaning Up:** Collect spillage. Avoid generation of dust during clean-up of spills. Clear up spills immediately and dispose of waste safely.

#### 6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

### SECTION 7: HANDLING AND STORAGE

#### 7.1. Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

#### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

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

#### 7.3. Specific End Use(s)

For laboratory research purposes

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

#### 8.2. Exposure Controls

##### Appropriate Engineering Controls:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Avoid high dust concentration. Ensure adequate ventilation, especially in confined areas.

##### Personal Protective Equipment:

Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection.



##### Hand Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

##### Eye Protection:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the

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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).

**Skin and body protection:** Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State:	Solid
Appearance:	No data available
Odor:	No data available
Odor Threshold:	No data available
pH:	5.0 - 7 at 36.4 g/l at 25 °C (77 °F)
Relative Evaporation Rate (butylacetate=1):	No data available
Melting Point:	Melting point/range: 248 - 251 °C (478 - 484 °F)
Boiling Point:	No data available
Flash Point:	244 °C (471 °F) - closed cup
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	No data available
Relative Vapor Density at 20 °C:	No data available
Relative Density:	No data available
Specific Gravity:	No data available
Solubility:	36.4 g/l at 20 °C (68 °F) - completely soluble
Log Pow:	3.18
Log Kow:	No data available
Viscosity, Kinematic:	No data available
Viscosity, Dynamic:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Explosive Limits:	No data available

**9.2. Other Information** No additional information available

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### SECTION 10: STABILITY AND REACTIVITY

<b>10.1. Reactivity:</b>	No data available
<b>10.2. Chemical Stability:</b>	Product is stable under recommended storage conditions.
<b>10.3. Possibility of Hazardous Reactions:</b>	Hazardous reactions will not occur under normal conditions.
<b>10.4. Conditions to Avoid:</b>	Direct sunlight, extremely high temperatures
<b>10.5. Incompatible Materials:</b>	Strong oxidizers
<b>10.6. Hazardous Decomposition Products:</b>	Carbon oxides (CO, CO <sub>2</sub> ), hydrogen bromide

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on Toxicological Effects

**Acute Toxicity:** Oral LD50  
LD50 Oral - rat - 410 mg/kg  
**Inhalation LC50**  
No data available  
**Dermal LD50**  
No data available

<b>Skin Corrosion/Irritation:</b>	No data available
<b>Serious Eye Damage/Irritation:</b>	Eyes - rabbit Result: Severe eye irritation
<b>Respiratory or Skin Sensitization:</b>	No data available
<b>Germ Cell Mutagenicity:</b>	No data available
<b>Carcinogenicity:</b>	Not classified
<b>Reproductive Toxicity:</b>	No data available
<b>Specific Target Organ Toxicity (Single Exposure):</b>	No data available
<b>Specific Target Organ Toxicity (Repeated Exposure):</b>	No data available
<b>Aspiration Hazard:</b>	No data available

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1. Toxicity

Toxicity to fish	LC50 - Danio rerio (zebra fish) - 0.3 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.03 mg/l - 48 h

#### 12.2. Persistence and Degradability

No data available

#### 12.3. Bioaccumulative Potential

No data available

#### 12.4. Mobility in Soil

No data available

#### 12.5. Other Adverse Effects

Very toxic to aquatic life with long lasting effects.

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### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Contact a licensed professional waste disposal service to dispose of this material. Dispose of waste material in accordance with all local, regional, national, and international regulations.

### SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

<b>14.1. UN Number:</b>	3077
<b>14.2. UN Proper Shipping Name:</b>	Environmentally hazardous substance, solid, n.o.s. (Cetrimonium bromide)
<b>14.3. Transport Hazard Class(es):</b>	9
<b>14.4. Packing Group:</b>	III
<b>14.5.1. Marine Pollutant:</b>	Yes
<b>14.5.2. Reportable Quantity:</b>	No
<b>14.6.1. Toxic Inhalation Hazard:</b>	No
<b>14.6.2. Mode Specific Comments:</b>	See below
<b>14.6.2.1. Ground Transportation - DOT (US):</b>	No comments
<b>14.6.2.2. Marine Transportation – IMDG:</b>	EMS-No: F-A, S-F
<b>14.6.2.3. Air Transportation - IATA/ICAO:</b>	No comments

### SECTION 15: REGULATORY INFORMATION

#### 15.1. US Federal Regulations

##### EPA TSCA Inventory

Listed

##### 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 reporting levels established by SARA Title III, Section 313.

##### SARA 311/312 Components

Acute health hazard

#### 15.2. US State Regulations

##### California Proposition 65 List 2014

Not listed

##### Maine Chemicals of High Concern List 2012

Not listed

##### Massachusetts Right to Know Hazardous Substance List 2014

Not listed

##### New Jersey Right to Know Hazardous Substance List 2010

Not listed

##### Pennsylvania Right to Know Hazardous Substance List 2010

Not listed

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### SECTION 16: OTHER INFORMATION

#### 16.1. Other Classifications

##### HMIS

Health Hazard: 2

Chronic Health Hazard: \*

Flammability: 1

Physical Hazard: 0

Revision date : 1/3/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

*Volochem chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household goods, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.*

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