

Safety Data Sheet
 acc. to OSHA HCS

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Printing date 07/13/2018
 Reviewed on 07/13/2018
 Version number: 5

1 Identification

- **Product identifier**
- **Trade name:** Cetyltrimethylammonium Bromide
- **Article number:** A0805
- **CAS Number:**
57-09-0
- **EC number:**
200-311-3
- **Application of the substance / the mixture**
Biochemistry
Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
AppliChem GmbH
Ottoweg 4
D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

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2 Hazard(s) identification

- **Classification of the substance or mixture**
 Acute Tox. 4 H302 Harmful if swallowed.
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Dam. 1 H318 Causes serious eye damage.
 STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**
 The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**


 GHS05 GHS07
- **Signal word** Danger
- **Hazard statements**
 H302 Harmful if swallowed.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H335 May cause respiratory irritation.
- **Precautionary statements**
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves / eye protection / face protection.
 P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
 P302+P352 If on skin: Wash with plenty of water.

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P304+P340 IF INHALED: Remove person to fresh air and keep 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/doctor.
P321 Specific treatment (see on this label).
P330 Rinse mouth.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 1
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = *3
Fire = 1
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
57-09-0 Cetyltrimethylammonium Bromide
- **Identification number(s)**
- **EC number:** 200-311-3

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Involve doctor immediately.
- **After inhalation:**
In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
Supply fresh air or oxygen; call for doctor.
- **After skin contact:**
Call a doctor immediately.
Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water.
Call a doctor immediately.
- **After swallowing:**
In case of unconsciousness place patient stably in side position for transportation.

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Trade name: Cetyltrimethylammonium Bromide

(Contd. of page 2)

If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Call a doctor immediately.

• **Information for doctor:**

• **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

• **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures

• **Extinguishing media**

• **Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fire with alcohol resistant foam.

In adaption to materials stored in the immediate neighbourhood.

• **Special hazards arising from the substance or mixture**

Nitrogen oxides (NO_x)

Hydrogen bromide (HBr)

CO, CO₂

Non-combustible.

• **Advice for firefighters**

• **Protective equipment:** Wear self-contained respiratory protective device.

• **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

• **Personal precautions, protective equipment and emergency procedures**

Avoid formation of dust.

Do not inhale dust.

Avoid substance contact.

Ensure adequate ventilation

• **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

• **Methods and material for containment and cleaning up:**

Pick up mechanically.

Avoid generation of dusts.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Clean up affected area.

• **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

• **Protective Action Criteria for Chemicals**

• **PAC-1:** 1.2 mg/m³

• **PAC-2:** 14 mg/m³

• **PAC-3:** 81 mg/m³

7 Handling and storage

• **Handling:**

• **Precautions for safe handling**

Any deposit of dust which cannot be avoided must be regularly removed.

• **Information about protection against explosions and fires:** The product is not flammable.

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(Contd. of page 3)

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Open receptacle only under localized extractor facilities.
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** +15 - +25 °C
- **Storage class:** 11
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Vacuum clean contaminated clothing. Do not blow or brush off contamination.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Required when dusts are generated.
Filter P1
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min
- **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min

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· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Use protective suit.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid

Color: White

· **Odor:** Weak, characteristic

· **Odor threshold:** Not determined.

· **pH-value:** 5-7

· **Change in condition**

Melting point/Melting range: 250-256 °C (482-492.8 °F)

Boiling point/Boiling range: Undetermined.

· **Flash point:** 244 °C (471.2 °F)

· **Flammability (solid, gaseous):** Product is not flammable.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 0.5 g/cm³ (4.173 lbs/gal)

· **Bulk density:** 390 kg/m³

· **Relative density** Not determined.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water at 20 °C (68 °F): 36.4 g/l

· **Partition coefficient (n-octanol/water):** 3.18

· **Viscosity:**

Dynamic: Not applicable.

Kinematic: Not applicable.

· **Other information**

No further relevant information available.

10 Stability and reactivity

· **Reactivity** No dangerous reactions known.

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- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** strong oxidants
- **Hazardous decomposition products:** In the event of fire: See chapter 5

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Components	Type	Value	Species
Oral LD50		410 mg/kg (rat)	

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
EC50/48 h	0.03 mg/l	(daphnia magna)	
LC50/96 h	0.3 mg/l	(fish)	

- **Persistence and degradability** The product is easily biodegradable.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
Water hazard class 3 (Assessment by list): extremely hazardous for water
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Chemicals must be disposed of in compliance with the respective national regulations.

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Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

• **Uncleaned packagings:**

• **Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

• **UN-Number**

• **DOT, ADR, IMDG, IATA**

UN3077

• **UN proper shipping name**

• **DOT, ADR**

Environmentally hazardous substances, solid, n.o.s.
(Cetyltrimethyl ammonium bromide)

• **IMDG**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
SOLID, N.O.S. (Cetyltrimethyl ammonium bromide),
MARINE POLLUTANT

• **IATA**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
SOLID, N.O.S. (Cetyltrimethyl ammonium bromide)

• **Transport hazard class(es)**

• **DOT, IMDG, IATA**



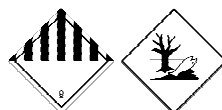
• **Class**

9 Miscellaneous dangerous substances and articles

• **Label**

9

• **ADR**



• **Class**

9 (M7) Miscellaneous dangerous substances and
articles

• **Label**

9

• **Packing group**

• **DOT, ADR, IMDG, IATA**

III

• **Environmental hazards:**

• **Marine pollutant:**

Yes (P)

Symbol (fish and tree)

• **Special marking (ADR):**

Symbol (fish and tree)

• **Special marking (IATA):**

Symbol (fish and tree)

• **Special precautions for user**

Warning: Miscellaneous dangerous substances and
articles

• **Danger code (Kemler):**

9

• **EMS Number:**

F-A,S-F

• **Stowage Category**

A

• **Stowage Code**

SW23 When transported in BK3 bulk container, see
7.6.2.12 and 7.7.3.9.

• **Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code**

Not applicable.

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Trade name: Cetyltrimethylammonium Bromide

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• **Transport/Additional information:**

• **DOT**

• **Remarks:**

Special marking with the symbol (fish and tree).

• **ADR**

• **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

• **IMDG**

• **Limited quantities (LQ)**

5 kg

• **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

• **UN "Model Regulation":**

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (CETYLTRIMETHYL AMMONIUM BROMIDE), 9, III

15 Regulatory information

• **Safety, health and environmental regulations/legislation specific for the substance or mixture**

• **Sara**

• **Section 355 (extremely hazardous substances):** Substance is not listed.

• **Section 313 (Specific toxic chemical listings):** Substance is not listed.

• **TSCA (Toxic Substances Control Act):** Substance is listed.

• **Proposition 65**

• **Chemicals known to cause cancer:** Substance is not listed.

• **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.

• **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.

• **Chemicals known to cause developmental toxicity:** Substance is not listed.

• **Carcinogenicity categories**

• **EPA (Environmental Protection Agency)** Substance is not listed.

• **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.

• **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.

• **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms**



GHS05 GHS07

• **Signal word** Danger

• **Hazard statements**

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

• **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves / eye protection / face protection.

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

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Trade name: Cetyltrimethylammonium Bromide

(Contd. of page 8)

P302+P352 If on skin: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep 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/doctor.
P321 Specific treatment (see on this label).
P330 Rinse mouth.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Dept. Compliance
- **Date of preparation / last revision** 07/13/2018 / 4
- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

P: Marine Pollutant

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- *** Data compared to the previous version altered.**