SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Trade name: Cetyltrimethylammonium bromide
EC-No.: 200-311-3
CAS-No.: 57-09-0
REACH registration No: 01-2119989160-35
Product code: C1393
Formula: C19H42BrN

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category: Professional use
Industrial/Professional use spec: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem - The Netherlands
T +31(0)23-5319093 - F +31(0)23-5318027
info@duchefa.nl

1.4. Emergency telephone number

Emergency number: Supplier contact information:
+31(0)23-5319093 (M-F 09:00-17:00)
+31(0)6-30109355 (outside office hours)

<table>
<thead>
<tr>
<th>Organisation/Company</th>
<th>Address</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Health Organization world directory of poison centres</td>
<td><a href="http://apps.who.int/poisoncentres/">http://apps.who.int/poisoncentres/</a></td>
<td>Consult website for a local poison centre</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

- Acute toxicity (oral), Category 4: H302
- Serious eye damage/eye irritation, Category 2: H319
- Skin corrosion/irritation, Category 2: H315
- Specific target organ toxicity — Single exposure, Category 3: H335
- Respiratory tract irritation: H335
- Hazardous to the aquatic environment — Acute Hazard, Category 1: H400

Full text of H statements: see section 16
Cetyltrimethylammonium bromide
Safety Data Sheet
according to Regulation (EU) 2015/830

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) : GHS07 GHS09

Signal word (CLP) : Warning
Hazard statements (CLP) : H302 - Harmful if swallowed.
H315 - Causes skin irritation
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H400 - Very toxic to aquatic life.

Precautionary statements (CLP) : P280 - Wear protective gloves, protective clothing, face protection, eye protection.
P273 - Avoid release to the environment
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P305+P351 - IF IN EYES: Rinse cautiously with water for several minutes.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Name : Cetyltrimethylammonium bromide
CAS-No. : 57-09-0
EC-No. : 200-311-3

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetrimonium bromide</td>
<td>(CAS-No.) 57-09-0</td>
<td>&gt;= 99</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-311-3</td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation : Assure fresh air breathing
Get medical advice/attention.
First-aid measures after skin contact : Wash skin with plenty of water
Get medical advice/attention.
First-aid measures after eye contact : Ensure adequate flushing of eyes by separating eyelids with the fingers
Get medical advice/attention.
**First-aid measures after ingestion**
- Rinse mouth out with water
- Give water to drink
- Call a physician immediately.

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

**Symptoms/effects**
- Irritating.
- Cough.
- Breathing difficulties.
- Cardiac failure.

**4.3. Indication of any immediate medical attention and special treatment needed**

No additional information available

---

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**
- Water spray.
- Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).

**5.2. Special hazards arising from the substance or mixture**

**Hazardous decomposition products in case of fire**
- Thermal decomposition generates:
  - COx
  - NOx
  - Hydrogen bromide, bromine.

**5.3. Advice for firefighters**

**Protection during firefighting**
- Do not enter fire area without proper protective equipment, including respiratory protection.

**Other information**
- Prevent fire fighting water from entering the environment.

---

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**General measures**
- Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

**6.1.1. For non-emergency personnel**

**Protective equipment**
- Wear suitable protective clothing.

**6.1.2. For emergency responders**

No additional information available

**6.2. Environmental precautions**

Prevent product from entering drains. Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

**Methods for cleaning up**
- Sweep up dry powder and dispose properly. This material and its container must be disposed of in a safe way, and as per local legislation.

**6.4. Reference to other sections**

No additional information available

---

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Precautions for safe handling**
- Ensure good ventilation of the work station.
7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep container tightly closed. Store at room temperature.

7.3. Specific end use(s)

For professional use only. Duchefa Biochemie B.V. products are intended only for “in vitro laboratory” research purposes.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection:

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Permeation</th>
<th>Thickness (mm)</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves</td>
<td>Nitrile rubber (NBR)</td>
<td>6 (&gt; 480 minutes)</td>
<td>0,11</td>
<td>EN 374</td>
</tr>
</tbody>
</table>

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Dust production: dust mask with filter type P2

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Appearance: Powder.
Molecular mass: 364,5 g/mol
Colour: White.
Odour: No data available
Odour threshold: No data available
pH: No data available
pH solution: 5 - 7 (50g/l)
Relative evaporation rate (butylacetate=1): No data available
Melting point: > 230 °C
Freezing point: No data available
Boiling point: No data available
Flash point: 244 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapour pressure: No data available
Relative vapour density at 20 °C: No data available
Relative density: No data available
Density : 390 kg/m³
Solubility : Water: 3 g/l
Log Pow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
- Heat
- Moisture.

10.5. Incompatible materials
- Strong oxidizers.

10.6. Hazardous decomposition products
Thermal decomposition generates:
- COx
- NOx
Hydrogen bromide, bromine.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Oral: Harmful if swallowed.

<table>
<thead>
<tr>
<th>Cetyltrimethylammonium bromide (57-09-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Not classified
STOT-single exposure : May cause respiratory irritation.
STOT-repeated exposure : Not classified
Aspiration hazard: Not classified

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
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</thead>
<tbody>
<tr>
<td>Cetyltrimethylammonium bromide (57-09-0)</td>
<td>0.3 Brachydanio rerio (zebra-fish)</td>
<td>0.22 Daphnia Magna</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Biodegradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetyltrimethylammonium bromide (57-09-0)</td>
<td>74 % 28d</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Additional information: Very toxic to aquatic life with long lasting effects. Avoid release to the environment. Prevent entry to sewers and public waters

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods: Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG

<table>
<thead>
<tr>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td>3077</td>
<td>3077</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.</td>
</tr>
<tr>
<td>Transport document description</td>
<td>UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III</td>
<td>UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, MARINE POLLUTANT</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>
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ADR | IMDG | IATA
--- | --- | ---
14.4. Packing group | III | III | III

14.5. Environmental hazards

<table>
<thead>
<tr>
<th>Environment</th>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dangerous for the environment</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dangerous for the environment</td>
<td>No supplementary information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.6. Special precautions for user

- **Overland transport**
  - Classification code (ADR): M7
  - Special provisions (ADR): 274, 335, 375, 601
  - Limited quantities (ADR): 5kg
  - Excepted quantities (ADR): E1
  - Packing instructions (ADR): P002, IBC08, LP02, R001
  - Special packing provisions (ADR): PP12, B3
  - Mixed packing provisions (ADR): MP10
  - Portable tank and bulk container instructions (ADR): T1, BK1, BK2, BK3
  - Portable tank and bulk container special provisions (ADR): TP33
  - Tank code (ADR): SGAV, LGBV
  - Vehicle for tank carriage: AT
  - Transport category (ADR): 3
  - Special provisions for carriage - Packages (ADR): V13
  - Special provisions for carriage - Bulk (ADR): VC1, VC2
  - Special provisions for carriage - Loading, unloading and handling (ADR): CV13
  - Hazard identification number (Kemler No.): 90
  - Orange plates: 90
  - EAC code: 2Z

- **Transport by sea**
  - Special provisions (IMDG): 274, 335, 966, 967, 969
  - Limited quantities (IMDG): 5 kg
  - Excepted quantities (IMDG): E1
  - Packing instructions (IMDG): P002, LP02
  - Special packing provisions (IMDG): PP12
  - IBC packing instructions (IMDG): IBC08
  - IBC special provisions (IMDG): B3
  - Tank instructions (IMDG): T1, BK1, BK2, BK3
  - Tank special provisions (IMDG): TP33
  - EmS-No. (Fire): F-A
  - EmS-No. (Spillage): S-F

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Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW23
MFAG-No : 171

- Air transport
PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y956
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 956
PCA max net quantity (IATA) : 400kg
CAO packing instructions (IATA) : 956
CAO max net quantity (IATA) : 400kg
Special provisions (IATA) : A97, A158, A179, A197
ERG code (IATA) : 9L

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Cetyltrimethylammonium bromide is not on the REACH Candidate List
Cetyltrimethylammonium bromide is not on the REACH Annex XIV List

15.1.2. National regulations
Germany
Reference to AwSV : Water hazard class (WGK) 3, severe
to waters (Classification
according to VwVwS, Annex 1 or 2;
ID No. 600)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available
### SECTION 16: Other information

**Indication of changes:**

| 3 | Content | Modified | Not specified -&gt; "≥ 99%"

**Abbreviations and acronyms:**

| Abbreviation | Description
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>DPD</td>
<td>Dangerous Preparations Directive 1999/45/EC</td>
</tr>
<tr>
<td>DSD</td>
<td>Dangerous Substances Directive 67/548/EEC</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>LC50</td>
<td>Median lethal concentration</td>
</tr>
<tr>
<td>LD50</td>
<td>Median lethal dose</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>NOAEC</td>
<td>No-Observed Adverse Effect Concentration</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent Bioaccumulative Toxic</td>
</tr>
<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
</tr>
</tbody>
</table>

**Data sources:**


**Full text of H- and EUH-statements:**

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral), Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment — Acute Hazard, Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

**SDS Biochemicals version 2018**

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*