

## Chemical Safety Data Sheet MSDS / SDS

## Benzethonium chloride

Revision Date:2024-12-21 Revision Number:1

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

## Product identifier

Product name : Benzethonium chloride  
CBnumber : CB9382932  
CAS : 121-54-0  
EINECS Number : 204-479-9  
Synonyms : benzethonium chloride,benzethonium

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P501 Dispose of contents/container to....

P405 Store locked up.

P310 Immediately call a POISON CENTER or doctor/physician.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

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

P264 Wash skin thoroughly after handling.

P264 Wash hands thoroughly after handling.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

#### **Hazard statements**

H412 Harmful to aquatic life with long lasting effects

H410 Very toxic to aquatic life with long lasting effects

H400 Very toxic to aquatic life

H319 Causes serious eye irritation

H318 Causes serious eye damage

H315 Causes skin irritation

H314 Causes severe skin burns and eye damage

H302 Harmful if swallowed

H301 Toxic if swallowed

---

## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Benzethonium chloride
Synonyms	: benzethonium chloride,benzethonium
CAS	: 121-54-0
EC number	: 204-479-9
MF	: C <sub>27</sub> H <sub>42</sub> ClNO <sub>2</sub>
MW	: 448.08

---

## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. Call in physician.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

---

## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NO<sub>x</sub>) Hydrogen chloride gas Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

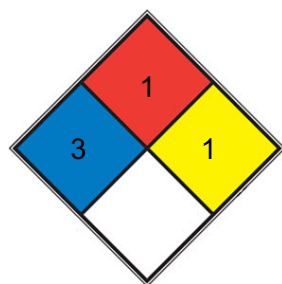
### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE 1** Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

**REACT 1** Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

**SPEC.**  
**HAZ.**

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### Reference to other sections

For disposal see section 13.

---

## SECTION 7: Handling and storage

### Precautions for safe handling

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Light sensitive. hygroscopic

#### Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

## SECTION 8: Exposure controls/personal protection

### control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

### Exposure controls

#### Personal protective equipment

##### Eye/face protection

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

### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested: KCL 741 Dermatrill? L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested: KCL 741 Dermatrill? L

### Body Protection

protective clothing

### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

### Control of environmental exposure

Do not let product enter drains.

---

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	white, off-white powder
Odour	odorless
Odour Threshold	Not applicable d) pH 5,5 - 7,5 at 44,8 g/l at 25 °C Melting point/freezing point Initial boiling point and boiling range Melting point/range: 162 - 164 °C - lit. >= 162 °C - OECD Test Guideline 103 Flash point No data available Evaporation rate No data available Flammability (solid, gas) Upper/lower flammability or explosive limits No data available No data available Vapour pressure < 0,001 hPa at 25 °C - OECD Test Guideline 104 Vapour density No data available Density No data available Relative density 1,1 at 20 °C - OECD Test Guideline 109 Water solubility 44,8 g/l at 20 °C Partition coefficient: n-octanol/water Autoignition temperature Decomposition temperature log Pow: 1,08 at 20 °C - OECD Test Guideline 107 - Bioaccumulation is not expected. >400 °C - Relative self-ignition temperature for solids does not ignite 162 - 164 °C - Viscosity Viscosity, kinematic: No data available Viscosity, dynamic: No data available Explosive properties No data available Oxidizing properties No

	data available
Melting point/freezing point	Melting point/range: 162 - 164 °C - lit.
Initial boiling point and boiling range	>= 162 °C - OECD Test Guideline 103
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	< 0,001 hPa at 25 °C - OECD Test Guideline 104
Vapour density	< 0.001 hPa @ 2°C
Relative density	No data available 1,1 at 20 °C - OECD Test Guideline 109
Water solubility	44,8 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: 1,08 at 20 °C - OECD Test Guideline 107 - Bioaccumulation is not expected.
Autoignition temperature	>400 °C - Relative self-ignition temperature for solids does not ignite
Decomposition temperature	162 - 164 °C -
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available

### Other safety information

Surface tension 33,4 mN/m at 1g/l at 20 °C

- OECD Test Guideline 115

## SECTION 10: Stability and reactivity

### Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents

### Conditions to avoid

no information available

### Incompatible materials

No data available

### Hazardous decomposition products

## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 295 mg/kg (US-EPA)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Inhalation: Irritating to respiratory system. Dermal

#### Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns. - 4 h (US-EPA)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage. - 24 h (OECD Test Guideline 405)

Causes serious eye damage.

#### Respiratory or skin sensitization

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: S. typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471 Result: negative

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

#### Toxicity

LD50 i.v. in mice: 29.5 mg/kg (Weiss)

---

## SECTION 12: Ecological information

### Toxicity

#### Toxicity to fish

semi-static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - 1,15 mg/l - 96 h

(OECD Test Guideline 203)

#### **Toxicity to daphnia and other aquatic invertebrates**

static test EC50 - *Daphnia magna* (Water flea) - 0,22 mg/l - 48 h (OECD Test Guideline 202)

#### **Toxicity to algae**

static test ErC50 - *Pseudokirchneriella subcapitata* (green algae) - 0,3 mg/l - 72 h

(OECD Test Guideline 201)

#### **Toxicity to bacteria**

EC50 - activated sludge - 35,7 mg/l - 3 h

(OECD Test Guideline 209)

#### **Persistence and degradability**

Biodegradability aerobic - Exposure time 28 d

Result: 0 % - Not biodegradable. (OECD Test Guideline 301B)

#### **Bioaccumulative potential**

No data available

#### **Mobility in soil**

No data available

#### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### **Other adverse effects**

Discharge into the environment must be avoided.

---

## SECTION 13: Disposal considerations

#### **Waste treatment methods**

#### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

#### **Incompatibilities**

Benzethonium chloride is incompatible with soaps and other anionic surfactants and may be precipitated from solutions greater than 2% w/v concentration by the addition of mineral acids and some salt solutions.

---

## SECTION 14: Transport information

#### **UN number**

ADR/RID: 2923 IMDG: 2923 IATA: 2923



## UN proper shipping name

ADR/RID: CORROSIVE SOLID, TOXIC, N.O.S. (benzethonium chloride) IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (benzethonium chloride)

IATA: Corrosive solid, toxic, n.o.s. (benzethonium chloride)

## Transport hazard class(es)

ADR/RID: 8 (6.1) IMDG: 8 (6.1) IATA: 8 (6.1)

## Packaging group

ADR/RID: III IMDG: III IATA: III

## Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

## Special precautions for user

No data available

---

## SECTION 15: Regulatory information

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

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

EC Inventory:Listed.

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

---

## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

## References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.