# Safety Data Sheet
according to Regulation (EU) 2020/878

**N-Benzylcupreinium Chloride**

| | |
|---|---|
| Date of issue: | 28.09.2022 |
| Revision date: | 15.04.2025 |
| Version: | 2 |
| Replaces version: | 1 |

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

### 1.1. Product identifier

| | | |
|---|---|---|
| Product form | : | Substance |
| Substance name | : | N-Benzylcupreinium Chloride |
| IUPAC name | : | (2S,4S,5R)-1-Benzyl-2-((R)-hydroxy(6-hydroxyquinolin-4-yl)methyl)-5-vinylquinuclidin-1-ium chloride |
| EC no | : | - |
| CAS No | : | 2023817-94-7 |
| Formula | : | C26H29ClN2O2 |
| Synonyms | : | Cinchonanium, 6′,9-dihydroxy-1-(phenylmethyl)-, chloride (1:1), (8α,9R)-; Cinchonanium, 9-hydroxy-6`-hydroxy-1-(phenylmethyl)-,chloride, (8α,9R); 1-Benzylcupreinium chloride; (8alpha,9R)-1-Benzyl-9-hydroxy-6'-hydroxycinchonan-1-ium chloride; (8alpha,9R)-1-benzyl-6'-hydroxycinchonan-1-ium-9-ol chloride; (8S,9R)-N-Benzylcupreinium chloride |

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

#### 1.2.1. Relevant identified uses

| | | |
|---|---|---|
| Main use category | : | Industrial use. Professional use. |
| Use of the substance/mixture | : | Phase transfer catalyst |

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

**Manufacturer/Supplier**
Buchler GmbH
Harxbuetteler Straße 3
38110 Braunschweig - Germany
T +49 5307 9310 - www.buchler-gmbh.com - info@buchler-gmbh.com

Safety data sheet: DLAC Dienstleistungsagentur Chemie GmbH, E-Mail: sds@dlac-gmbh.de

### 1.4. Emergency telephone number

| Country | Organisation/Company | Address | Emergency number |
|---|---|---|---|
| Germany | BUCHLER GmbH<br>(A member of the FAGUS Group) | Harxbütteler Str. 3<br>38110 Braunschweig, Germany | +49 1791437208<br>(German/English) (Mo-Fr 8:00-16:00) |

## 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 |
| Skin corrosion/irritation, Category 2 | H315 |
| Sensitisation - Skin, Category 1A | H317 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Specific target organ toxicity - Single exposure, Category 3, Respiratory tract irritation | H335 |

Full text of H statements: see section 16

**Adverse physicochemical, human health and environmental effects**

Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation.

### 2.2. Label elements

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

Hazard pictograms (CLP) :

GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements (CLP) : P261 - Avoid breathing dust
P280 - Wear protective gloves, protective clothing, eye protection
P312 - Call a POISON CENTER, doctor if you feel unwell
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance name : N-Benzylcupreinium Chloride
EC No : -
CAS No : 2023817-94-7

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| N-Benzylcupreinium Chloride | (CAS No) 2023817-94-7 | ≤ 100 | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Skin Sens. 1A, H317<br>Eye Irrit. 2, H319<br>STOT SE 3, H335 |

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 general : Get medical advice/attention if you feel unwell. If possible show him this sheet. Failing this, show him the packaging or label. Never give anything by mouth to an unconscious person. Place the affected person in the recovery position.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact : Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Drink water as a precaution. Call a POISON CENTER or doctor/physician if you feel unwell.

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

Symptoms/injuries : Signs of cinchonism: Neurotoxic effects (e.g. headache, tinnitus, visual disturbances, confusion), gastrointestinal disorders (e.g. nausea, vomiting, diarrhoea), exanthema and haematological disorders.

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Harmful if swallowed.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Adapt extinguishing agent to suit the environment. Water spray. Foam. Carbon dioxide. Dry extinguishing powder.

Unsuitable extinguishing media : Do not use a heavy water stream.

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

Hazardous decomposition products in case of fire : Carbon oxides (CO, $CO_2$). Nitrogen oxides.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Prevent fire-fighting water from entering environment.

Protection during firefighting : Use a self-contained breathing apparatus and also a protective suit (EN 469).

## SECTION 6: Accidental release measures

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

General measures : Stop leak if safe to do so. Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe dust.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene.

#### 6.1.2. For emergency responders

Protective equipment : Use personal protective equipment as required. Wear suitable respiratory equipment in case of insufficient ventilation.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if the substance enters sewers or public waters.

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

Methods for cleaning up : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Minimize generation of dust. Dispose of in accordance with relevant local regulations.

### 6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Provide local exhaust or general room ventilation. Avoid breathing dust. Avoid contact with skin and eyes. Keep container closed when not in use.

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Take off contaminated clothing and wash it before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original container. Store tightly closed in a dry and cool place. Keep out of direct sunlight. Protect from moisture.

Prohibitions on mixed storage : Keep away from food, drink and animal feedingstuffs.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

**Appropriate engineering controls:**

Use adequate ventilation. Avoid dust formation.

**Hand protection:**

Wear suitable gloves (EN 374). Nitrile rubber. Butyl rubber. 0.4 mm. The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**

Chemical goggles or safety glasses (EN 166).

**Skin and body protection:**

Wear suitable protective clothing (EN 344).

**Respiratory protection:**

Where exposure through inhalation may occur from use, respiratory protection is recommended. Dust production: dust mask with filter type P2.

**Environmental exposure controls:**

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Solid, powder |
| Colour | : | White - beige |
| Odour | : | Odourless |
| Melting point/freezing point | : | No data available |
| Boiling point or initial boiling point and boiling range | : | No data available |
| Flammability | : | No data available |
| Lower and upper explosion limit | : | No data available |
| Flash point | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| pH | : | No data available |
| Kinematic viscosity | : | Not applicable |
| Solubility | : | No data available |
| Partition coefficient n-octanol/water (log value) | : | No data available |
| Vapour pressure | : | No data available |
| Density and/or relative density | : | No data available |
| Relative vapour density | : | No data available |
| Particle characteristics | : | No data available |

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

| | | |
|---|---|---|
| Explosive properties | : | The substance is not explosive. |
| Oxidising properties | : | The substance has no oxidising properties. |

#### 9.2.2. Other safety characteristics

| | | |
|---|---|---|
| Molecular mass | : | 437 g/mol |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

### 10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

### 10.3. Possibility of hazardous reactions

None under normal use.

### 10.4. Conditions to avoid

Direct sunlight. High temperature.

### 10.5. Incompatible materials

Oxidizing agents.

### 10.6. Hazardous decomposition products

In case of fire: Carbon monoxide. Carbon dioxide. Nitrogen oxides.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity : Oral: Harmful if swallowed.

| N-Benzylcupreinium Chloride (2023817-94-7) | |
|---|---|
| LD50 oral | 583.04 mg/kg (QSAR via T.E.S.T.) |

| | | |
|---|---|---|
| Skin corrosion/irritation | : | Causes skin irritation. |
| Serious eye damage/irritation | : | Causes serious eye irritation. |
| Respiratory or skin sensitisation | : | May cause an allergic skin reaction. |
| Germ cell mutagenicity | : | Not classified<br>Based on available data, the classification criteria are not met |
| Carcinogenicity | : | Not classified<br>Based on available data, the classification criteria are not met |
| Reproductive toxicity | : | Not classified<br>Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure) | : | May cause respiratory irritation. |
| Specific target organ toxicity (repeated exposure) | : | Not classified<br>Based on available data, the classification criteria are not met |
| Aspiration hazard | : | Not classified<br>Based on available data, the classification criteria are not met |

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Endocrine disruption for human health : The substance has no endocrine disrupting properties.

#### 11.2.2. Other information

Potential adverse human health effects and symptoms : Signs of cinchonism: Neurotoxic effects (e.g. headache, tinnitus, visual disturbances, confusion), gastrointestinal disorders (e.g. nausea, vomiting, diarrhoea), exanthema and haematological disorders.

## SECTION 12: Ecological information

### 12.1. Toxicity

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

### 12.2. Persistence and degradability

No additional information available

### 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

This substance does not meet the PBT- or vPvB criteria of REACH regulation, annex XIII.

### 12.6. Endocrine disrupting properties

Endocrine disruption for the environment : The substance has no endocrine disrupting properties.

### 12.7. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

| | | |
|---|---|---|
| Regional legislation (waste) | : | Dispose in a safe manner in accordance with local/national regulations. |
| Waste treatment methods | : | This material and its container must be disposed of as hazardous waste. Do not dispose of with domestic waste. Do not empty into drains. |
| Waste disposal recommendations | : | Empty the packaging completely prior to disposal. When totally empty, containers are recyclable like any other packing. |
| European List of Waste (LoW) code | : | 07 00 00 - WASTES FROM ORGANIC CHEMICAL PROCESSES<br>07 01 00 - wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals |
| Waste code | : | The waste code number according to the Ordinance on the European Waste Catalogue (AVV) depends on the waste producer and can therefore vary for any given product. The waste code number is therefore to be gleaned separately from each waste producer. |

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

### 14.1. UN number or ID number

UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not applicable
UN-No. (IATA) : Not applicable

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

### 14.3. Transport hazard class(es)

**ADR**

Transport hazard class(es) (ADR) : Not applicable

**IMDG**

Transport hazard class(es) (IMDG) : Not applicable

**IATA**

Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

### 14.6. Special precautions for user

**- Overland transport**

Not applicable

**- Transport by sea**

Not applicable

**- Air transport**

Not applicable

### 14.7. Maritime transport in bulk according to IMO instruments

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

**REACH Annex XIV (Authorisation List)**

Contains no substance(s) listed on REACH Annex XIV (Authorisation List).

**REACH Candidate List (SVHC)**

Contains no substance(s) listed on the REACH Candidate List.

**PIC Regulation (Prior Informed Consent)**

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals).

**POP Regulation (Persistent Organic Pollutants)**

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants).

**Ozone Regulation (2024/590)**

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer).

**Explosives Precursors Regulation (2019/1148)**

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors).

**Drug Precursors Regulation (273/2004)**

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances).

### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

For this substance a chemical safety assessment was not carried out.

## SECTION 16: Other information

Data source : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

Changes compared to earlier Versions : Section 1.1 + 1.4
Section 2.3
Section 11.2
Section 12.6
Section 15.1.1

Abbreviations and acronyms:

| | |
|---|---|
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| BCF | Bioconcentration factor |
| DNEL | Derived-No Effect Level |
| EC50 | The effective concentration of substance that causes 50 % of the maximum response (Median Effective Concentration) |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Lethal Concentration to 50 % of a test population (Median Lethal Concentration) |
| LD50 | Lethal Dose to 50 % of a test population (Median Lethal Dose) |
| NOEC | No-Observed Effect Concentration |
| NOAEL | No-Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| LOAEL | Lowest Observed Adverse Effect Level |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| STP | Sewage treatment plant |
| vPvB | Very Persistent and Very Bioaccumulative |

Full text of H- and EUH-statements:

| | |
|---|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| Skin Sens. 1A | Sensitisation - Skin, Category 1A |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H302 | Harmful if swallowed |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

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.