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

1.1 Product identifier

Identification of the substance: Caesium chloride
Article number: 7878
Registration number (REACH): 01-2119977124-35-xxxx
EC number: 231-600-2
CAS number: 7647-17-8

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

Relevant identified uses: laboratory chemical
Uses advised against: laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: Abteilung Arbeitssicherheit

1.4 Emergency telephone number

Emergency information service: Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

<table>
<thead>
<tr>
<th>Classification acc. to GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>3.7</td>
</tr>
</tbody>
</table>

Classification acc. to 67/548/EEC

<table>
<thead>
<tr>
<th>Category/ies of danger</th>
<th>Abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>toxic for reproduction</td>
<td>Repr. Cat. 3; R62</td>
</tr>
</tbody>
</table>
Caesium chloride  ≥99,9 %, extra pure, for biochemistry

article number: 7878

## 2.2 Label elements

### Label elements

**Signal word:** Warning

**Pictograms**

- H361: Suspected of damaging fertility or the unborn child.

### Hazard statements

- H361: Suspected of damaging fertility or the unborn child.

### Precautionary statements

**Precautionary statements - prevention**

- P280: Wear protective clothing/eye protection.

**Precautionary statements - response**

- P308+P313: IF exposed or concerned: get medical advice/attention.

### Labelling of packages where the contents do not exceed 125 ml

**Signal word:** Warning

**Symbol(s).**

- H361: Suspected of damaging fertility or the unborn child.
- P308+P313: IF exposed or concerned: get medical advice/attention.

## 2.3 Other hazards

There is no additional information.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Caesium chloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td>01-2119977124-35-xxxx</td>
</tr>
<tr>
<td>EC number</td>
<td>231-600-2</td>
</tr>
<tr>
<td>CAS number</td>
<td>7647-17-8</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>ClCs</td>
</tr>
<tr>
<td>Molar mass</td>
<td>168,4 g/mol</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact
Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion
Rinse mouth. Do not induce vomiting. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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

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
Co-ordinate fire-fighting measures to the fire surroundings
water spray, water mist, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
The product itself does not burn.

Hazardous combustion products
In case of fire may be liberated: hydrogen chloride (HCl)

5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.
Collect contaminated firefighting water separately.

Special protective equipment for firefighters
Chemical resistant gloves. Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles.
Caesium chloride ≥99,9 %, extra pure, for biochemistry

article number: 7878

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill
Covering of drains.

Advices on how to clean up a spill
Take up mechanically. Control of dust.

Other information relating to spills and releases
Place in appropriate containers for disposal.

Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

• Measures to prevent fire as well as aerosol and dust generation
  Removal of dust deposits.
  Advice on general occupational hygiene
  Wash hands after use. Do not to eat, drink and smoke in work areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a dry place.
Incompatible substances or mixtures
Observe hints for combined storage.
• Control of effects
• Protect against external exposure, such as humidity

Consideration of other advice
Not required.
• Ventilation requirements
  Use local and general ventilation.
• Specific designs for storage rooms or vessels
  Recommended storage temperature: 15 - 25 °C.
• Packaging compatibilities
  Keep only in original container.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Relevant DNELs/DMELs/PNECs and other threshold levels

- human health values

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL</td>
<td>4,18 mg/kg</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>1,47 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
</tbody>
</table>

- environmental values

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEC</td>
<td>0,49 mg/cm³</td>
<td>marine sediment</td>
<td>continuous</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,13 mg/cm³</td>
<td>marine water</td>
<td>continuous</td>
</tr>
<tr>
<td>PNEC</td>
<td>4,9 mg/cm³</td>
<td>freshwater sediment</td>
<td>continuous</td>
</tr>
<tr>
<td>PNEC</td>
<td>1,25 mg/cm³</td>
<td>freshwater</td>
<td>continuous</td>
</tr>
<tr>
<td>PNEC</td>
<td>100,3 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
<td>continuous</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,25 mg/cm³</td>
<td>soil</td>
<td>continuous</td>
</tr>
<tr>
<td>PNEC</td>
<td>1,25 mg/l</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,13 mg/l</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>100,3 mg/l</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>4,9 mg/kg</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,49 mg/kg</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,25 mg/kg</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0,37 mg/l</td>
<td>water</td>
<td>continuous</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Individual protection measures (personal protective equipment)
Use safety goggles with side protection.

**Skin protection**

- **hand protection**
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
- **type of material**
  NBR (Nitrile rubber)
- **material thickness**
  >0.11 mm.
- **breakthrough times of the glove material**
  >480 minutes (permeation: level 6)
- **other protection measures**
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

**Respiratory protection**

Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

**Environmental exposure controls**

Keep away from drains, surface and ground water.

---

**SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

**Appearance**

- **Physical state**: solid (crystalline)
- **Colour**: white
- **Odour**: odourless
- **Odour threshold**: No data available

**Other physical and chemical parameters**

- **pH (value)**: 5 - 9 in 100 g/l water at 20 °C
- **Melting point/freezing point**: 642 °C at 1.013 hPa
- **Initial boiling point and boiling range**: 1.297 °C
- **Flash point**: not applicable
- **Evaporation rate**: no data available
- **Flammability (solid, gas)**: Non-flammable
- **Explosive limits**: not relevant (non-combustible)
- **Explosion limits of dust clouds**: these information are not available
- **Vapour pressure**: This information is not available.
- **Density**: 3.97 g/cm³ at 20 °C
- **Vapour density**: This information is not available.
- **Bulk density**: 2.000 kg/m³
- **Relative density**: Information on this property is not available.
Caesium chloride ≥99.9%, extra pure, for biochemistry

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Solubility(ies)
Water solubility 1.900 g/l at 20 °C

Partition coefficient
n-octanol/water (log KOW) This information is not available.
Auto-ignition temperature >400 °C - ECHA
Viscosity not relevant (solid matter)
Explosive properties none
Oxidising properties none

9.2 Other information
There is no additional information.
Surface tension 72.8 mN/m at 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is not reactive under normal ambient conditions.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Exothermic reaction with: Oxidisers

10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.
Physical stresses which might result in a hazardous situation and have to be avoided high temperatures

10.5 Incompatible materials
There is no additional information.

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>2600 mg/kg</td>
<td>rat</td>
<td></td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin. Frequently or prolonged contact with skin may cause dermal irritation.
Caesium chloride ≥99,9 %, extra pure, for biochemistry

**Summary of evaluation of the CMR properties**

Reproductive toxicity.
Suspected of damaging fertility or the unborn child.

- **Specific target organ toxicity - single exposure**
  Shall not be classified as a specific target organ toxicant (single exposure).

- **Specific target organ toxicity - repeated exposure**
  Shall not be classified as a specific target organ toxicant (repeated exposure).

**Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **First symptoms at low exposures**
  - malaise
- **If swallowed**
  - data are not available
- **If in eyes**
  - causes tears
- **If inhaled**
  - data are not available
- **If on skin**
  - data are not available

---

**SECTION 12: Ecological information**

**12.1 Toxicity**

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

**Aquatic toxicity (acute)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>37.4 mg/l</td>
<td>aquatic invertebrates</td>
<td>ECHA</td>
<td>48 hours</td>
</tr>
<tr>
<td>EC50</td>
<td>134.3 mg/l</td>
<td>Pseudokirchneriella subcapitata</td>
<td>ECHA</td>
<td>72 hours</td>
</tr>
<tr>
<td>LC50</td>
<td>&gt;100 mg/l</td>
<td>zebra fish (Danio rerio)</td>
<td>ECHA</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**12.2 Process of degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.
Does not significantly accumulate in organisms.

Data are not available.

Data are not available.

Slightly hazardous to water.

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulation. Do not empty into drains.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

The cargo is not intended to be carried in bulk.

Not subject to ADR, RID and ADN.

12.3  Bioaccumulative potential
Does not significantly accumulate in organisms.

12.4  Mobility in soil
Data are not available.

12.5  Results of PBT and vPvB assessment
Data are not available.

12.6  Other adverse effects
Slightly hazardous to water.

SECTION 13: Disposal considerations

13.1  Waste treatment methods
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulation.

Sewage disposal-relevant information
Do not empty into drains.

13.2  Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3  Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1  UN number  (not subject to transport regulations)
14.2  UN proper shipping name  not relevant
14.3  Transport hazard class(es)  not relevant
    Class  -
14.4  Packing group  not relevant
14.5  Environmental hazards  none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6  Special precautions for user
There is no additional information.

14.7  Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
The cargo is not intended to be carried in bulk.

14.8  Information for each of the UN Model Regulations
• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
Not subject to ADR, RID and ADN.
Caesium chloride ≥99,9 %, extra pure, for biochemistry

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• International Maritime Dangerous Goods Code (IMDG)
  Not subject to IMDG.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

• Restrictions according to REACH, Annex XVII
  None of the ingredients are listed.

• List of substances subject to authorisation (REACH, Annex XIV)
  None of the ingredients are listed.

National inventories

Substance is listed in the following national inventories:

- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DMEL</td>
<td>Derived Minimal Effect Level</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No-Effect Concentration</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>
Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H361</td>
<td>suspected of damaging fertility or the unborn child</td>
</tr>
<tr>
<td>R62</td>
<td>possible risk of impaired fertility</td>
</tr>
</tbody>
</table>

Disclaimer
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.