



Safety Data Sheet

SDS has been prepared in accordance with
Regulation (EC) No. 453/2010

This Safety Data Sheet is written in reference to a sealed glass ampoule containing 10ml of the product named below.

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Substance name: Caesium chloride in water

Synonyms:

Caesium chloride

Product type:

Liquid density standard

Date revised: Jun 2022

Previous: Feb 2020

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

Relevant identified uses: For use in the calibration of density meters.

1.3 Details of the supplier of the Safety Data Sheet

Company: H&D Fitzgerald Ltd.

Address: Cefn Du, Tremeirchion, St Asaph, Denbighshire, LL17 0US, UK

Telephone #: +44 (0)1352 720 774

Email address: admin@density.co.uk

1.4 Emergency telephone number

+44 (0)1352 720 774

Section 2 Hazards identification

2.1 Classification of the substance or mixture

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

Reproductive toxicity (Category 2), H361f

2.2 Label elements

Pictogram:



Signal word:

Warning

Hazard statement(s): H361f Suspected of damaging fertility.

Precautionary statement(s):

P201	Obtain special instructions before use.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

2.3 Other hazards

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.

Section 3 Composition / Information on ingredients					
Substance name: Caesium chloride in water					
Substance Name	C.A.S. No.	EINECS No.	Index-No. in CLP Annex IV	Classification	Concentration
Water	7732-18-5	231-791-2	-	Not classified	≈52%
Caesium chloride	7647-17-8	231-600-2	-	Repr. 2; H361f	≈48%
Formula:			CsCl / H ₂ O		
Molecular Weight:			168.36 g/mol / 18.02 g/mol		
For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16.					

Section 4 First Aid measures	
4.1 Description of first aid measures	
General advice:	First Aid responders should pay attention to self-protection and use the recommended protective clothing Take off contaminated clothing and shoes immediately. Move out of dangerous area. Keep warm and in a quiet place.
Following inhalation:	Provide fresh air. If not breathing, give artificial respiration. Keep the victim calm and in a semi-upright position. If symptoms persist, call a physician.
Following ingestion:	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician immediately.
Following eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Following skin contact:	Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.
4.2 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	
4.3 Indication of any immediate medical attention and special treatment needed	
Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service.	

Section 5 Fire fighting measures	
5.1 Extinguishing media	
Extinguishing media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media:	High volume water jet.
5.2 Special hazards arising from the substance or mixture	
Hazardous combustion products:	May form toxic gases on heating or in case of fire. Hydrogen chloride gas
5.3 Advice for firefighters	
Special protective equipment for fire-fighters:	Wear full protective clothing and self-contained breathing apparatus.
Further information:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6 Accidental release measures	
6.1 Personal precautions, protective equipment and emergency procedures	
Personal precautions:	Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not breathe gas/fumes/vapour/spray.
6.2 Environmental precautions	
	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.
6.3 Methods and material for containment and cleaning up	
	Soak up with liquid binder (e.g. sand, acid binder, universal binder). Pick up and transfer to properly labelled containers. Dispose of according to local authority requirements.
6.4 Reference to other sections	
	See section 8 and 13.

Section 7 Handling and storage	
7.1 Precautions for safe handling	
Handling precautions:	Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Avoid formation of aerosol. Handle in accordance with good industrial hygiene and safety practice. Normal measures for preventive fire protection.
7.2 Conditions for safe storage, including any incompatibilities	
Storage precautions:	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from frost. Incompatible with oxidizing agents.
7.3 Specific end use	
Recommendations:	Liquid density standard for calibration of density meters.

Section 8 Exposure controls and personal protection			
8.1 Control parameters			
Components with work place control parameters			
Contains no substances with occupational exposure limit values.			
Derived No Effect Level (DNEL) - Caesium Chloride			
Application area	Exposure routes	Value	Health effect
Workers	Inhalation	1.47 mg/m³	Long-term systemic effects
Workers	Skin contact	4.18 mg/kg	Long-term systemic effects
Predicted No Effect Concentration (PNEC) - Caesium Chloride			
Compartment		Value	
Fresh water		1.25 mg/l	
Marine water		0.13 mg/l	
Estuary sediment		4.9 mg/kg	
Marine sediment		0.49 mg/kg	
Behaviour in waste treatment plants		100.3 mg/l	
Soil		0.25 mg/kg	
8.2 Exposure controls			
Engineering measures: Provide sufficient air exchange and/or exhaust in work rooms.			
Personal protective equipment			
Eye/Face protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).			
Hand protection: Handle with protective gloves. Protective gloves complying with EN 374. Protective gloves have to be replaced at the first sign of deterioration. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.			
Other skin protection: Use of protective clothing is good industrial practise. Chemical resistant protective clothing according to DIN EN 13034 (Type 6)			
Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment. Recommended Filter type: B-P2 .			
Hygiene measures: Handle in accordance with good industrial hygiene and safety practise. Wash hands with soap before breaks and at the end of the workday. Take off contaminated clothing and shoes immediately. Keep away from food, drink, and animal feedingstuffs.			
Environmental exposure controls			
Prevent further leakage or spillage if safe to do so.			
Do not flush into surface water or sanitary sewer system.			
Avoid subsoil penetration.			

Section 9 Physical and chemical properties			
9.1 Information on basic physical and chemical properties			
Appearance: colourless, liquid	Odour: odourless	Odour threshold: no data available	pH: 5-9@20 °C
Freezing point: no data available	Boiling point & range: ~100 °C	Flash point: no data available	Evaporation rate: no data available
Flammability: no data available	Upper/lower flammability or explosive limits: no data available	Vapour pressure: no data available	Vapour density: no data available
Density of liquid: ≈1527 kg/m ³ at 20 °C	Solubility: completely soluble in water	Partition coefficient: n-octanol/water no data available	Auto-ignition temperature: no data available
Decomposition temperature: no data available	Viscosity: no data available	Explosive properties: no data available	Oxidising properties: no data available
9.2 Other information			
Explosivity:		No explosion risk.	

Section 10 Stability and reactivity	
10.1 Reactivity	Reaction with oxidisers.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	
	Reaction with oxidisers.
10.4 Conditions to avoid	Protection from frost.
10.5 Incompatible materials	Strong oxidizing agents.
10.6 Hazardous decomposition products	
Risk of decomposition:	Reaction with oxidisers. Chlorine.
Thermal decomposition:	To avoid thermal decomposition, do not overheat.

Section 11 Toxicological information	
11.1 Information on toxicological effects	
Acute toxicity (caesium chloride)	
Inhalation:	No data available.
Ingestion:	LD ₅₀ (rat): 2,600 mg/kg
Skin corrosion/irritation: (caesium chloride)	Result: No skin irritation (OECD Test Guideline 439) GLP: Yes.
Serious eye damage/irritation: (caesium chloride)	1. Result: No eye irritation. (OECD Test Guideline 405) GLP: Yes. Test substance: read-across (Analogy) 2. Result: no eye irritation. (OECD Test Guideline 438) GLP: Yes.
Respiratory or skin sensitisation: (caesium chloride)	Species: Mouse. GLP: Yes. Test substance: Read-across (Analogy) (OECD Test Guideline 429) Result: Did not cause sensitisation on laboratory animals.
Teratogenicity: (caesium chloride)	Species: Rat. Application Route: Oral. GLP: Yes. NOEL: 150.4 mg/kg. NOAEL parents NOEL: 10.0 mg/kg. Test substance: Read-across (Analogy) (OECD Test Guideline 414) Result: Animal testing did not show any effects on foetal development.
Germ cell mutagenicity: (caesium chloride)	1. Ames test with and without metabolic activation. GLP: Yes. (OECD Test Guideline 471) Result: In vitro tests did not show mutagenic effects. 2. In vitro Mammalian Cell Gene Mutation Test with and without metabolic activation. GLP: Yes. Test substance: Read-across (Analogy) (OECD Test Guideline 476) Result: In vitro tests did not show mutagenic effects.
Genotoxicity in vivo: (caesium chloride)	In vivo micronucleus test. Species: Mouse male and female. (OECD Test Guideline 474) GLP: Yes. Result: In vivo tests did not show any chromosomal changes.
Reproductive toxicity:	Suspected of damaging fertility or the unborn child if swallowed.
Target organ systemic toxicant – single exposure: (caesium chloride)	No data available.
Target organ systemic toxicant – repeated exposure: (caesium chloride)	1. Species: Rat, male and female. Application Route: Oral. Exposure time: (28 d) NOAEL: 40 mg/kg bw/d (OECD Test Guideline 407) GLP: Yes. 2. Species: Rat, male and female. Application Route: Oral. Exposure time: (90 d) NOAEL: 25,1 mg/kg bw/d. Test substance: Read-across (Analogy) (OECD Test Guideline 408) Target Organs: Testes
Aspiration hazard:	No data available.
Additional information:	RTECS: FK9625000.

Section 12 Ecological information	
12.1 Toxicity	Ecotoxicology studies for the product are not available.
Toxicity to fish: (caesium chloride)	<p>1. Static test. LC₅₀: > 100 mg/l. Exposure time: 96 h Species: Danio rerio (zebra fish) GLP: Yes Test substance: Read-across (Analogy) (OECD Test Guideline 203)</p> <p>2. Semi-static test. NOEC: 43 mg/l. Exposure time: 35 d Test substance: Read-across (Analogy) (OECD Test Guideline 210)</p>
Toxicity to daphnia and other aquatic invertebrates: (caesium chloride)	<p>1. Immobilization. EC₅₀: 37.4 mg/l. Exposure time: 48 h Species: Daphnia magna (Water flea) GLP: Yes. (OECD Test Guideline 202)</p> <p>2. Immobilization NOEC: 23.4 mg/l. Exposure time: 48 h. Species: Daphnia magna (Water flea) GLP: Yes. (OECD Test Guideline 202)</p> <p>3. Semi-static test. NOEC: 15.8 mg/l. Exposure time: 21 d. Species: Daphnia magna (Water flea) GLP: Yes. Test substance: Read-across (Analogy). (OECD Test Guideline 211)</p>
Toxicity to algae: (cesium chloride)	<p>1. Static test EC₅₀: 134.3 mg/l. Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) GLP: Yes. Test substance: Read-across (Analogy) (OECD Test Guideline 201)</p> <p>2. Growth inhibition NOEC: 12.5 mg/l. Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) GLP: Yes. Test substance: Read-across (Analogy) (OECD Test Guideline 201)</p>
Toxicity to bacteria: (cesium chloride)	<p>1. Respiration inhibition. EC₅₀: 1,003 mg/l. Exposure time: 3 h. Species: activated sludge. GLP: Yes. Test substance: Read-across (Analogy) (OECD Test Guideline 209)</p> <p>2. Respiration inhibition. NOEC: 1,003 mg/l. Exposure time: 3 h Species: activated sludge. GLP: Yes. Test substance: Read-across (Analogy) (OECD Test Guideline 209)</p>
12.2 Persistence and degradability	
Biodegradability:	The methods for determining biodegradability are not applicable to inorganic substances.
12.3 Bioaccumulative potential	
Bioaccumulation:	Bioaccumulation is unlikely.
12.4 Mobility in soil	No data available.
12.5 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.
12.6 Other adverse effects	<p>Slightly water endangering.</p> <p>Do not flush into surface water or sanitary sewer system.</p> <p>Avoid subsoil penetration.</p>

Section 13 Disposal considerations	
13.1 Waste treatment methods	
General requirements:	Observe all national and local environmental regulations.
Contaminated packaging:	Dispose of as unused product.

Section 14 Transport information

Not classed as dangerous goods for transport.

Section 15 Regulatory information**15.1 Safety health and environmental regulations/legislation specific for the substance or mixture**

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

Section 16 Other information**Full text of H-Statements referred to under sections 2 and 3.**

H361f Suspected of damaging fertility.

Reason for revision: Updated to comply with Regulation (EC) No. 453/2010.

Disclaimer

H&D Fitzgerald Ltd believes that data given here is accurate. It is derived from published information about caesium chloride. No warranty, expressed or implied, is intended. The data is provided for your information and consideration when using caesium chloride in water as a liquid density standard for the calibration of density meters. H&D Fitzgerald Ltd assumes no legal responsibility for its use.