

# SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200 and ANSI standard Z400.1-2010

**Rockwood**  
**Lithium**

## Cesium Metal Pure

Material number Cs001

Revision date: 08.07.2013

Version: 6

Language: en-US

Date of print: 13.08.2013

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### 1. Product and company identification

#### Product identifier

Trade name: Cesium Metal Pure

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

General use: Ion source, Luminescent substance

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

Company name: Rockwood Lithium GmbH

Street/POB-No.: Trakehner Str. 3

Postal Code, city: 60487 Frankfurt

Germany

WWW: rockwoodlithium.com

Telephone: +49 (0)69-7165-3296

Telefax: +49 (0)69-7165-2523

Dept. responsible for information:

Department Product Safety,

Telephone: +49 (0)5326-51-1292, e-mail productsafety@rockwoodlithium.com

#### Emergency telephone number

Rockwood Lithium GmbH, Telephone: +49(0)5326 51-0

### 2. Hazards identification

#### Emergency overview

Appearance: Physical state: solid <28,65°C or liquid >28,65°C

Color: golden, brown

Odor: odorless

**Danger**

corrosive

Reacts violently with water, liberating extremely flammable gases.

#### Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

#### Potential health effects

Causes burns.

#### Information pertaining to special dangers for human and environment

see section 11: Toxicological information

### 3. Composition / Information on ingredients

Chemical characterization: Cs = Cesium: alkali metals

CAS-Number: 7440-46-2

RTECS-Number: FK9225000

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### 4. First-aid measures

- General information: First-aid crew: Ensure self-protection.  
Move victim out of danger zone.  
Contaminated/fouled clothing and shoes must be removed immediately.  
Make sure he/she is warm and comfortable.
- After inhalation: Move victim to fresh air.  
Keep the victim calm and in a semi-upright position.  
Consult physician.
- In case of skin contact: Wash off immediately with plenty of water for at least 15 minutes.  
Call a physician immediately.
- After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.  
Seek the attention of an ophthalmologist immediately.
- After swallowing: Rinse mouth with water.  
Immediately give large quantities of water to drink.  
Do NOT induce vomiting.  
Call a physician immediately.

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

Risks: Burns

#### Information to physician

Treat symptomatically.  
For specialist advice physicians should contact the Poisons Information Service.

### 5. Firefighting measures

Suitable extinguishing media:

Use dry extinguishing powder on the basis of NaCl or pulverized limestone for extinction.

Extinguishing media which must not be used for safety reasons:

Water  
Carbon dioxide  
Foam  
Halogens

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

Contact with water liberates extremely flammable gas. (Hydrogen)

Special protective equipment for firefighters:

In case of fire: Wear self-contained breathing apparatus.

Additional information:

In the event of fire, cool tanks with water spray.  
Be aware of a dangerous reaction with water, if the container is ruptured.  
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

### 6. Accidental release measures

Personal precautions:

Make sure there is sufficient air exchange and / or that working rooms are air suctioned.  
Wear personal protection equipment.  
Avoid contact with skin, eyes, and clothing.  
Keep persons away and stay on the side facing the wind.

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- Environmental measures: Do not allow to penetrate into soil, waterbodies or drains.  
In case of entry into waterways, soil or drains, inform the responsible authorities.
- Methods for cleaning up: Never bring product in contact with water.  
Cover spilled material with limestone powder.  
Take up mechanically.  
Collect in closed and suitable containers for disposal.

## 7. Handling and storage

### Handling

- Advices on safe handling: Make sure there is sufficient air exchange and / or that working rooms are air suctioned.  
Never bring product in contact with water.  
Wear personal protection equipment.  
Handle in accordance with good industrial hygiene and safety practice.  
Have eye wash bottle or eye rinse ready at work place.
- Precautions against fire and explosion: Keep away from sources of ignition. - No smoking.  
Take precautionary measures against static discharge.  
Electrical equipment must be explosion protected according to standards.

### Storage

- Requirements for storerooms and containers: Keep under vacuum.  
Store in a well-ventilated place. Keep container tightly closed.  
Store in a dry place.  
Avoid admission of air/oxygene.  
Protect from direct sunlight.
- Hints on joint storage: Never allow product to get in contact with water during storage.  
Do not store together with: Acids, halogens, alcohols.  
Avoid contact with carbon dioxide.

### Specific use(s)

Ion source, Luminescent substance

## 8. Exposure controls / personal protection

### Engineering controls

Electrical equipment must be explosion protected according to standards.  
Make sure there is sufficient air exchange and / or that working rooms are air suctioned.  
Take precautionary measures against static discharge.  
See also information in chapter 7, section storage.

- Eye protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010
- Body protection: Wear protective clothing of leather  
Flame retardant protective clothing according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.  
Leather gloves according to OSHA Standard - 29 CFR: 1910.138.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.  
Protective gloves have to be replaced at the first sign of deterioration.

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### Personal protection equipment

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.  
Recommendation: Filter type AP-2 according to OSHA Standard - 29 CFR: 1910.138

### General protection and hygiene measures

Contaminated/fouled clothing and shoes must be removed immediately.  
Avoid contact with skin, eyes, and clothing.  
Keep away from food, drink and animal feeding stuffs.  
When using do not eat, drink or smoke.  
Wash hands before breaks and after work.  
Work place should be equipped with a shower and an eye rinsing apparatus.  
Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

Do not allow to penetrate into soil, waterbodies or drains.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Appearance: Physical state: solid <28,65°C or liquid >28,65°C  
Color: golden, brown  
Odor: odorless  
Melting point/melting range: 28.65 °C (83.57 °F)  
Boiling temperature/boiling range: 708 °C (1306.4 °F)  
Vapor pressure: at 145 °C (293 °F): 0.0075 hPa  
at 279 °C (534.2 °F): 1 hPa  
Density: at 25 °C (77 °F): 1.873 g/cm<sup>3</sup>  
Water solubility: not applicable  
Reacts violently with water liberating Hydrogen.

### Additional information

Explosive properties: Reacts violently with water, liberating extremely flammable gases.  
Additional information: Atomic mass: 132,91

## 10. Stability and reactivity

Reactivity: Risk of violent reaction.  
Chemical stability: sensitive to air  
Decomposition under influence of moisture is highly accelerated by heating.  
Polymerisation: In contact with water releases flammable gases which may ignite spontaneously.  
Conditions to avoid: Protect from moisture contamination.  
Keep away from open flames, hot surfaces and sources of ignition.  
Protect from heat and direct sunlight.  
Avoid admission of air/oxygen.

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Materials to avoid:

- Water
- Acids
- Sulfur
- Halogens
- halogenated compounds
- Alcohols
- Oxygen

Hazardous decomposition products:

Reacts violently with water liberating Hydrogen and Cesium hydroxide.

## 11. Toxicological information

### Toxicological tests

Toxicological effects:

- Acute toxicity (oral): Lack of data.
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation, eye damage/irritation: Skin Corr. 1B = Causes severe skin burns and eye damage.
- Sensitisation to the respiratory tract: Lack of data.
- Skin sensitisation: Lack of data.
- Germ cell mutagenicity/Genotoxicity: Lack of data.
- Carcinogenicity: Lack of data.
- Reproductive toxicity: Lack of data.
- Effects on or via lactation: Lack of data.
- Specific target organ toxicity (single exposure): Lack of data.
- Specific target organ toxicity (repeated exposure): Lack of data.
- Aspiration hazard: Lack of data.

### Symptoms

Reacts with the moisture of the skin causing corrosion.  
In case of ingestion:  
Burns in the mouth, pharynx, oesophagus, and gastrointestinal tract. (Risk of perforation)  
After contact with skin:  
Causes severe burns.  
After eye contact:  
Causes serious eye damage.

## 12. Ecological information

### Persistence and degradability

Further details: The methods for determining the biological degradability are not applicable to inorganic substances.

### Additional ecological information

General information: Do not allow to penetrate into soil, waterbodies or drains.

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### 13. Disposal considerations

#### Product

Recommendation: Dispose of as hazardous waste in compliance with local and national regulations.

#### Contaminated packaging

Recommendation: Refer to manufacturer/supplier for information on recovery/recycling

### 14. Transport information

#### USA: Department of Transportation (DOT)

Identification numbers: UN1407  
Proper shipping name: UN 1407, Cesium or Caesium  
DOT hazard class or division: 4.3  
PG: I  
Label codes: 4.3  
Special provisions: A7, A19, IB4, IP1, N34, N40  
Packaging - Exceptions: None  
Packaging - Non-bulk: 211  
Packaging - Bulk: 242  
Quantity limitations - Passenger aircraft / rail: Forbidden  
Quantity limitations - Cargo only: 15 kg  
Vessel stowage - Location: D  
Vessel stowage - Other: 52



#### Sea transport (IMDG)

UN number: 1407  
Proper shipping name: UN 1407, CAESIUM  
IMDG: Class 4.3, Subrisk -  
Packing Group: I  
EmS: F-G, S-N  
Special provisions: -  
Limited quantities: 0  
EQ: E0  
Contaminated packaging - Instructions: P403  
Contaminated packaging - Provisions: PP31  
IBC - Instructions: IBC04  
IBC - Provisions: B1  
Tank instructions - IMO: -  
Tank instructions - UN: -  
Tank instructions - Provisions: -  
Stowage and segregation: Category D. "Separated from" acids.  
Properties and observations: White, ductile, soft metal. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.  
Marine pollutant: No

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### Air transport (IATA)

UN/ID number: 1407  
Proper shipping name: UN 1407, CAESIUM  
ICAO/IATA: Class 4.3  
PG: I  
Hazard: Dang. when wet  
EQ: E0  
Passenger Ltd.Qty.: Forbidden  
Passenger: Forbidden  
Cargo: Pack.Instr. 487 - Max. Net Qty/Pkg. 15 kg  
ERG: 4W

## 15. Regulatory information

### U.S. Federal Regulations

TSCA Inventory: listed

TSCA HPVC: not listed

### National regulations - Canada

DSL: not listed

NDSL: listed

### National regulations - EC member states

EC-number: 231-155-4

### Labeling (67/548/EEC or 1999/45/EC)

Code letter and hazard symbol:

F highly flammable  
C corrosive

Customs tariff number: 2805 19 00

R phrase(s): R 14/15 Reacts violently with water, liberating extremely flammable gases.  
R 34 Causes burns.

S phrase(s): S 6 Keep under vacuum.  
S 8 Keep container dry.  
S 24/25 Avoid contact with skin and eyes.  
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S 36/39 Wear suitable protective clothing and eye/face protection.  
S 43 In case of fire, use extinguishing powder on the basis of NaCl or pulverized limestone. Never use water.  
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### Special labeling

Text for labeling: CAS No.: 7440-46-2 Cesium

### National regulations - Great Britain

Hazchem-Code: 4W

Blue Book: Spont. comb. & IMDG-Code E 4334

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### 16. Other information

Hazard rating systems:



NFPA Hazard Rating:

Health: 3 (Serious)

Fire: 4 (Severe)

Reactivity: 3 (Serious)

Precautions: W (Material shows unusual reactivity with water)

HMIS Version III Rating:

Health: 3 (Serious)

Flammability: 4 (Severe)

Physical Hazard: 3 (Serious)

Personal Protection: X = Consult your supervisor

HEALTH	3
FLAMMABILITY	4
PHYSICAL HAZARD	3
	X

Reason of change: General revision

Date of first version: 27.02.1998

#### Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.