

## SAFETY DATA SHEET

Preparation Date: 3/03/2016

Revision Date: 3/03/2016

Revision Number: G1

### 1. IDENTIFICATION

**Product identifier**

**Product code:** CE118  
**Product Name:** CESIUM FLUORIDE, OPTICAL GRADE

**Other means of identification**

**Synonyms:** No information available  
**CAS #:** 13400-13-0  
**RTECS #** FK9650000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 2

**Label elements**

## Danger

### Hazard statements

Toxic if swallowed  
Toxic in contact with skin  
Toxic if inhaled  
Causes skin irritation  
Causes serious eye damage  
Suspected of damaging fertility or the unborn child



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

Not available

### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area

### Precautionary Statements - Response

*IF exposed or concerned: Get medical advice/attention*  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.  
IF ON SKIN: Wash with plenty of soap and water  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
Rinse mouth

### Precautionary Statements - Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Components	CAS-No.	Weight %
Cesium Fluoride 13400-13-0	13400-13-0	100

### 4. FIRST AID MEASURES

#### First aid measures

##### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

##### **Skin Contact:**

Toxic in contact with skin. Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

##### **Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention.

##### **Inhalation:**

Toxic by inhalation. Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

##### **Ingestion:**

Toxic if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

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

##### **Symptoms**

Severe eye irritation. Causes eye burns. Causes skin irritation. May cause severe skin irritation and possible burns. May cause nausea and headache. Central nervous system effects.

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

##### **Notes to Physician:**

Treat symptomatically

#### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### **Suitable Extinguishing Media:**

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

##### **Unsuitable Extinguishing Media:**

No information available.

#### Specific hazards arising from the chemical

##### **Hazardous Combustion Products:**

No information available.

##### **Specific hazards:**

No information available.

#### Special Protective Actions for Firefighters

**Specific Methods:** No information available.

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions:** Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Use personal protective equipment.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Technical Measures/Precautions:** Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

**Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Technical Measures/Storage Conditions:**

Deliquescent. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Store in a segregated and approved area.

**Incompatible Materials:**

Acids. Strong oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**National occupational exposure limits**

**United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Cesium Fluoride 13400-13-0	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWA	None

**Canada**

Components	Alberta	British Columbia	Ontario	Quebec
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Cesium Fluoride 13400-13-0	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWAEV
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### Australia and Mexico

Components	Australia	Mexico
Cesium Fluoride 13400-13-0	2.5 mg/m <sup>3</sup> TWA	2.5 mg/m <sup>3</sup> TWA

### Appropriate engineering controls

#### Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Individual protection measures, such as personal protective equipment

#### Personal Protective Equipment

**Eye protection:** Goggles

**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent..

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical state:</b> Solid	<b>Appearance:</b> Powder.	<b>Color:</b> White.
<b>Odor:</b> Odorless.	<b>Taste</b> No information available	<b>Formula:</b> CsF
<b>Molecular/Formula weight:</b> 151.91	<b>Flammability:</b> No information available	<b>Flash point (°C):</b> No data available
<b>Flashpoint (°C/°F):</b> No information available.	<b>Flash Point Tested according to:</b> Not available	<b>Autoignition Temperature (°C/°F):</b> No information available
<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available	<b>pH:</b> No information available
<b>Melting point/range(°C/°F):</b> 682°C/1259.6°F	<b>Boiling point/range(°C/°F):</b> 1251°C/2283.8°F	<b>Decomposition temperature(°C/°F):</b> No information available
<b>Bulk density:</b> No information available	<b>Density (g/cm3):</b> No information available	<b>Specific gravity:</b> No information available
<b>Vapor pressure @ 20°C (kPa):</b> No information available	<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available
<b>VOC content (g/L):</b> No information available	<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available
<b>Viscosity:</b> No information available	<b>Miscibility:</b> No information available	<b>Solubility:</b> Soluble in Water

## 10. STABILITY AND REACTIVITY

### Reactivity

Contact with acids liberates very toxic gas

### Chemical stability

**Stability:** Stable under recommended storage conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Incompatible materials.

**Incompatible Materials:** Acids. Strong oxidizing agents.

**Hazardous decomposition products:** No information available

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### **Principal Routes of Exposure:**

Ingestion. Inhalation. Skin. Eyes.

## Acute Toxicity

### Component Information

*Cesium Fluoride - 13400-13-0*

- LD50/oral/rat** = No information available
- LD50/oral/mouse** = No information available
- LD50/dermal/rat** = No information available
- LD50/dermal/rabbit** = No information available
- LC50/inhalation/rat** = No information available
- LC50/inhalation/mouse** = No information available
- Other LD50 or LC50 information** = No information available

### Product Information

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = No information available

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available  
**VALUE - Dust/Mist** = No information available

### Symptoms

- |                          |  |
|--------------------------|--|
| <b>Skin Contact:</b>     | Causes skin irritation. May cause severe irritation and possible burns. Toxic in contact with skin.                    |
| <b>Eye Contact:</b>      | Causes serious eye damage.. Causes severe irritation and burns.  |
| <b>Inhalation</b>        | Toxic by inhalation. May cause irritation of respiratory tract. Symptoms may include coughing and shortness of breath. |
| <b>Ingestion</b>         | Toxic if swallowed. May cause nausea. May cause headache. May cause central nervous system effects (affect behavior).  |
| <b>Aspiration hazard</b> | No information available   |

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Chronic Toxicity** No information available

**Sensitization:** No information available

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Cesium Fluoride	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

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

**Reproductive Effects:** No information available

**Developmental Effects:** No information available

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available

**STOT - repeated exposure** No information available

**Target Organs:** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

**Mobility:** No information available

**13. DISPOSAL CONSIDERATIONS**

**Disposal Methods**

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Cesium Fluoride	None	None	None	None

**14. TRANSPORT INFORMATION**



## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solids, toxic, n.o.s. (cesium fluoride)  
**Hazard Class:** 8  
**Subsidiary Risk:** 6.1  
**Packing Group:** II  
**ERG No:** 154  
**Marine Pollutant:** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions:** No Information available  
**Symbol(s):** G

### TDG (Canada)

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solid, toxic, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** (6.1)  
**Packing Group:** II  
**Description:** No information available

### ADR

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solid, toxic, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** 6.1  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

### IMO / IMDG

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solid, toxic, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** 6.1  
**Packing Group:** II  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**EMS:** F-A  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solid, toxic, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** 6.1  
**Packing Group:** II  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solid, toxic, n.o.s.

**14. TRANSPORT INFORMATION**

**Hazard Class:** 8  
**Subsidiary Risk:** 6.1  
**Packing Group:** II  
**Description:** No information available

**IATA**

**UN-No:** UN2923  
**Proper Shipping Name:** Corrosive solid, toxic, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** 6.1  
**Packing Group:** II  
**ERG Code:** 8P  
**Special Provisions** No information available  
**Description:** No information available

**15. REGULATORY INFORMATION****International Inventories**

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Cesium Fluoride</i>	Present	Present KE-05439	Not present	Present (1)-662	Present	Present	Present 236-487-3

**U.S. Regulations***Cesium Fluoride*

**New Jersey RTK Hazardous Substance List:** sn 0936 (listed under fluorides)

**Minnesota - Hazardous Substance List:** Present (listed under fluorides, inorganic as well as fluorides)

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Cesium Fluoride</i>	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>Cesium Fluoride</i>	None	None	None	None	None

**U.S. TSCA**

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Cesium Fluoride</i>	Not Applicable	Not Applicable

**Canada**

**WHMIS hazard class:**  
D2B Toxic materials

**Cesium Fluoride**  
D2B

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

Components	Canada (DSL)	Canada (NDSL)
Cesium Fluoride	Not Listed	Present

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Cesium Fluoride	Not listed	Not listed

**EU Classification**

**R-phrase(s)**

R34 - Causes burns.  
R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.

**S -phrase(s)**

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	Classification	Concentration Limits:	Safety Phrases
Cesium Fluoride		No information	

**The product is classified in accordance with Annex VI to Directive 67/548/EEC**

**Indication of danger:**

C - Corrosive.  
T - Toxic



**16. OTHER INFORMATION**

## 16. OTHER INFORMATION

**Preparation Date:** 3/03/2016  
**Revision Date:** 3/03/2016  
**Prepared by:** Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**