




# SAFETY DATA SHEET

## 1. Identification

|   |  |                       |  |
|---|--|-----------------------|--|
| <b>Product identifier</b>                                     | <b>CESIUM CHLORIDE, 99.999%</b>  |                       |  |
| <b>Other means of identification</b>                          |  |                       |  |
| <b>Product code</b>   | 5019   |                       |  |
| <b>Recommended use</b>  | professional, scientific and technical activities: other professional, scientific and technical activities |                       |  |
| <b>Recommended restrictions</b>                               | None known.  |                       |  |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |  |                       |  |
| <b>Manufacturer</b>   |  |                       |  |
| <b>Company name</b>   | GFS Chemicals, Inc.  |                       |  |
| <b>Address</b>  | P.O. Box 245<br>Powell, OH 43065<br>United States  |                       |  |
| <b>Telephone</b>  | Phone  | 740-881-5501          |  |
|   | Toll Free  | 800-858-9682          |  |
|   | Fax  | 740-881-5989          |  |
| <b>Website</b>  | www.gfschemicals.com   |                       |  |
| <b>E-mail</b>   | service@gfschemicals.com   |                       |  |
| <b>Emergency phone number</b>                                 | Emergency Assistance   | Chemtrec 800-424-9300 |  |

## 2. Hazard(s) identification

|  |   |            |  |
|--|---|------------|--|
| <b>Physical hazards</b>                          | Not classified.   |            |  |
| <b>Health hazards</b>                            | Germ cell mutagenicity  | Category 1 |  |
| <b>Environmental hazards</b>                     | Hazardous to the aquatic environment, acute hazard  | Category 3 |  |
|  | Hazardous to the aquatic environment, long-term hazard  | Category 3 |  |
| <b>OSHA defined hazards</b>                      | Not classified.   |            |  |
| <b>Label elements</b>                            |    |            |  |
| <b>Signal word</b>                               | Danger  |            |  |
| <b>Hazard statement</b>                          | May cause genetic defects. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.  |            |  |
| <b>Precautionary statement</b>                   |   |            |  |
| <b>Prevention</b>                                | Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.  |            |  |
| <b>Response</b>                                  | If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. |            |  |
| <b>Storage</b>                                   | Store in a well-ventilated place. Keep container tightly closed. Store locked up.   |            |  |
| <b>Disposal</b>                                  | Not available.  |            |  |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.   |            |  |
| <b>Supplemental information</b>                  | None.   |            |  |

## 3. Composition/information on ingredients

| <b>Chemical name</b>     | <b>Common name and synonyms</b> | <b>CAS number</b> | <b>%</b> |
|--------------------------|---------------------------------|-------------------|----------|
| CESIUM CHLORIDE, 99.999% |                                 | 7647-17-8         | 100      |

Material name: CESIUM CHLORIDE, 99.999%

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist. Get medical attention if symptoms persist.  |
| <b>Skin contact</b>   | Remove and isolate contaminated clothing and shoes. For minor skin contact, avoid spreading material on unaffected skin. Rinse skin with water/shower. Get medical attention if irritation develops and persists.   |
| <b>Eye contact</b>  | Rinse with water. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Get medical attention if irritation develops and persists.   |
| <b>Ingestion</b>  | If ingestion of a large amount does occur, call a poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Direct contact with eyes may cause temporary irritation.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.  |
| <b>General information</b>  | IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. |

## 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Use extinguishing agent suitable for type of surrounding fire. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.                              |
| <b>Fire fighting equipment/instructions</b>                          | Use water spray to cool unopened containers.   |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.                                 |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards noted.  |

## 6. Accidental release measures

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| <b>Methods and materials for containment and cleaning up</b>               | This product is miscible in water. Stop the flow of material, if this is without risk. Prevent product from entering drains. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.   |
| <b>Environmental precautions</b>   | Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.   |

## 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).   |

## 8. Exposure controls/personal protection

|                                     |  |
|-------------------------------------|--|
| <b>Occupational exposure limits</b> | No exposure limits noted for ingredient(s).                |
| <b>Biological limit values</b>      | No biological exposure limits noted for the ingredient(s). |

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

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

**Eye/face protection** If contact is likely, safety glasses with side shields are recommended.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Use of an impervious apron is recommended.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

**Appearance**

**Physical state** Solid.

**Form** Crystalline.

**Color** White.

**Odor** Odorless.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 1193 °F (645 °C)

**Initial boiling point and boiling range** 2366.6 °F (1297 °C)

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

**Solubility(ies)**

**Solubility (water)** Soluble

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Other information**

**Density** 3.99 g/cm<sup>3</sup>

**Molecular formula** CsCl

**Molecular weight** 168.36 g/mol

**Specific gravity** 3.99

## 10. Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

|   |   |
|---|---|
| <b>Chemical stability</b>                 | Material is stable under normal conditions.                 |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use. |
| <b>Conditions to avoid</b>                | Contact with incompatible materials.                        |
| <b>Incompatible materials</b>             | Strong oxidizing agents.                                    |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.              |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | No adverse effects due to inhalation are expected.       |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected.     |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation. |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.                   |

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

#### Acute toxicity

| Product                                  | Species | Test Results           |
|--|---------|------------------------|
| CESIUM CHLORIDE, 99.999% (CAS 7647-17-8) |         |                        |
| <b>Acute</b>                             |         |                        |
| <i>Other</i>                             |         |                        |
| LD50                                     | Rat     | 1500 mg/kg<br>1.5 g/kg |

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.  
**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

#### Respiratory or skin sensitization

|                                  |   |
|----------------------------------|---|
| <b>Respiratory sensitization</b> | Not available.  |
| <b>Skin sensitization</b>        | This product is not expected to cause skin sensitization. |

**Germ cell mutagenicity** May cause genetic defects.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not available.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

| Product                                  | Species | Test Results   |
|--|---------|--|
| CESIUM CHLORIDE, 99.999% (CAS 7647-17-8) |         |  |
| <b>Aquatic</b>                           |         |  |
| Crustacea                                | EC50    | Calanoid copepod (Eudiaptomus padanus 98 - 186 mg/l, 48 hours padanus) |

\* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).   |
| <b>Contaminated packaging</b>                | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.   |

### 14. Transport information

#### DOT

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

### 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

#### **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

#### **CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

#### **SARA 304 Emergency release notification**

Not regulated.

#### **Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

#### **SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312** No

#### **Hazardous chemical**

#### **SARA 313 (TRI reporting)**

Not regulated.

#### **Other federal regulations**

#### **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

#### **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

#### **US state regulations**

#### **US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

#### **US. Massachusetts RTK - Substance List**

Not regulated.

**US. New Jersey Worker and Community Right-to-Know Act**

Not listed.

**US. Pennsylvania Worker and Community Right-to-Know Law**

Not listed.

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| <b>Country(s) or region</b> | <b>Inventory name</b>  | <b>On inventory (yes/no)*</b> |
|-----------------------------|--|-------------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                           |
| Canada                      | Domestic Substances List (DSL)   | Yes                           |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                            |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                           |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                           |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                            |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                           |
| Korea                       | Existing Chemicals List (ECL)  | Yes                           |
| New Zealand                 | New Zealand Inventory  | Yes                           |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                           |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                           |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision****Issue date** February-04-2015**Version #** 01

**Disclaimer** GFS Chemicals cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision Information** Product and Company Identification: Product and Company Identification