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

1.1 Product identifier
- Trade name: STRONTIUM CARBONATE SF
- Chemical name: Strontium carbonate
- Molecular formula: SrCO3

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

 Uses of the Substance / Mixture
- Manufacture of pyrotechnical products
- Use in welding electrode coating
- Manufacture of glazes, frits and enamels
- Manufacture of ceramics
- Manufacture of electro-ceramic materials
- Manufacture of other strontium compounds
- Use in zinc electrolysis

 Uses advised against
- none

1.3 Details of the supplier of the safety data sheet

 Company
SOLVAY FLUORIDES, LLC
3737 Buffalo Speedway,
Suite 800,
Houston, TX 77098
USA
Tel: 800-515-6065

1.4 Emergency telephone
FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although WHMIS has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects

2.1 Classification of the substance or mixture
- Not classified as hazardous product under the regulation above.
- Not a hazardous substance or mixture.

2.2 Label elements

Hazardous Products Regulations (WHMIS 2015)
- Not a hazardous substance or mixture.
- Not labelled as hazardous product under the regulation above.
2.3 Other hazards which do not result in classification

- H402: Harmful to aquatic life.
- H402: Harmful to aquatic life.
- Product dust may be irritating to eyes, skin and respiratory system.
- Possible risk of irreversible effects through inhalation.
- Risk of pulmonary overload (respirable particulates)
- Harmful: possible risk of irreversible effects through inhalation.
- Chronic exposure to the product can cause bone calcification disorders.

SECTION 3: Composition/information on ingredients

3.1 Substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Identification number CAS-No.</th>
<th>Concentration [% wt/wt or V/V]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium carbonate</td>
<td>513-77-9</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td>Barium carbonate</td>
<td>513-77-9</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Identification number CAS-No.</th>
<th>Concentration [% wt/wt or V/V]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strontium carbonate</td>
<td>1633-05-2</td>
<td>&gt;= 96</td>
</tr>
</tbody>
</table>

3.2 Mixture

Not applicable, this product is a substance.

SECTION 4: First aid measures

4.1 Description of first-aid measures

**In case of inhalation**
- Move to fresh air.
- If symptoms persist, call a physician.

**In case of skin contact**
- Wash off with soap and water.

**In case of eye contact**
- Rinse thoroughly with plenty of water, also under the eyelids.
- If eye irritation persists, consult a specialist.

**In case of ingestion**
4.2 Most important symptoms and effects, both acute and delayed

**In case of inhalation**

**Effects**
- May cause nose, throat, and lung irritation.

*Repeated or prolonged exposure*
- Risk of pulmonary overload (respirable particulates)
- Possible risk of irreversible effects through inhalation.

**In case of skin contact**

**Effects**
- Prolonged skin contact may cause skin irritation.

**In case of eye contact**

**Effects**
- Contact with eyes may cause irritation.

**In case of ingestion**

**Effects**
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed

- no data available

---

**SECTION 5: Firefighting measures**

5.1 Extinguishing media

**Suitable extinguishing media**
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**
- None.

5.2 Special hazards arising from the substance or mixture

**Specific hazards during fire fighting**
- Not combustible.

**Hazardous combustion products:**
- Barium oxide
- Other hazardous decomposition products may be formed.

5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
- In the event of fire, wear self-contained breathing apparatus.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

   Advice for non-emergency personnel
   - Evacuate personnel to safe areas.
   - Avoid dust formation.

   Advice for emergency responders
   - Use personal protective equipment.
   - Sweep up to prevent slipping hazard.

6.2 Environmental precautions

   - Should not be released into the environment.
   - Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

   - Pick up and transfer to properly labeled containers.
   - Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

   - Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

   - Ensure adequate ventilation.
   - Minimize dust generation and accumulation.
   - Avoid contact with skin and eyes.
   - Keep away from incompatible products

   Hygiene measures
   - When using do not eat, drink or smoke.
   - Wash hands before breaks and at the end of workday.
   - Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

   Technical measures/Storage conditions
   - Store in original container.
   - Keep in a well-ventilated place.
   - Keep in a dry place.
   - Keep in properly labeled containers.
   - Keep container closed.
   - In bulk: in silo or in heap (covered and isolated from the ground) on a well-drained surface.
   - Keep away from:
     - Incompatible products

   Packaging material

   Suitable material
   - Paper.
7.3 Specific end use(s)
- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

**Components with workplace occupational exposure limits**

Consult local authorities for acceptable exposure limits.

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Value type</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium carbonate</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>American Conference of Governmental</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Industrial Hygienists</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye irritation, Muscular stimulation, Skin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>irritation, Gastrointestinal irritation, Not</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>classifiable as a human carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Expressed as :Barium</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Control measures**

**Engineering measures**
- Provide appropriate exhaust ventilation at places where dust is formed.

**Individual protection measures**

**Respiratory protection**
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.
- Respirator with a particle filter (EN 143)

**Hand protection**
- Wear suitable gloves.

**Suitable material**
- PVC
- Natural Rubber

**Unsuitable material**
- Do not wear neoprene gloves, as neoprene absorbs nanoparticles.

Eye protection
- Goggles

**Skin and body protection**
- Dust impervious protective suit
- PVC
- Suitable material
- PVC

**Hygiene measures**
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

---

### SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Physical state: solid</td>
</tr>
<tr>
<td></td>
<td>Color: white</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>odorless</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Molecular weight</strong></td>
<td>147.6 g/mol</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>7.0 - 8.0 (68 °F (20 °C)) saturated aqueous solution</td>
</tr>
<tr>
<td><strong>pKa</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>Melting point/range: Decomposition: yes Not applicable</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Boiling point/boiling range: Thermal decomposition: yes Not applicable</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Evaporation rate (Butylacetate = 1)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>The product is not flammable.</td>
</tr>
<tr>
<td><strong>Flammability / Explosive limit</strong></td>
<td>Explosiveness: Not explosive</td>
</tr>
</tbody>
</table>
Autoignition temperature: Not applicable
Vapor pressure: Not applicable
Vapor density: Not applicable
Density:
Relative density: 3.79
Solubility: Water solubility:
3.4 mg/l (68 °F (20 °C))
slightly soluble
Partition coefficient: n-octanol/water: Not applicable
Decomposition temperature: ca. 1233 °F (667 °C)
Viscosity: Viscosity, dynamic: Not applicable
Explosive properties: No data available
Oxidizing properties: Not considered as oxidizing.

9.2 Other information:
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity:
- Risk of violent reaction.

10.2 Chemical stability:
- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions:
- Contact with acids liberates CO2, sometimes violently.

10.4 Conditions to avoid:
- none

10.5 Incompatible materials:
- Acids

10.6 Hazardous decomposition products:
- Strontium oxide
- Barium oxide
11.1 Information on toxicological effects

**Acute toxicity**

**Acute oral toxicity**
Strontium carbonate
By analogy
LD50: > 2,000 mg/kg - Rat, female
Test substance: Strontium nitrate
Not classified as hazardous for acute oral toxicity according to GHS.

**Acute inhalation toxicity**
Strontium carbonate
By analogy
LC50 - 4 h (aerosol): > 4.5 mg/l - Rat, male and female
Method: OECD Test Guideline 403
Test substance: Strontium nitrate
Not classified as hazardous for acute inhalation toxicity according to GHS.

**Acute dermal toxicity**
Strontium carbonate
No data available

**Acute toxicity (other routes of administration)**
No data available

**Skin corrosion/irritation**
Strontium carbonate
By analogy
No skin irritation
Test substance: Strontium nitrate
In vitro test

**Serious eye damage/eye irritation**
Strontium carbonate
Rabbit
No eye irritation
Method: OECD Test Guideline 405

**Respiratory or skin sensitization**
Strontium carbonate
By analogy
Maximization Test - Guinea pig
Does not cause skin sensitization.
Method: OECD Test Guideline 406
Test substance: Strontium Chloride Hexahydrate
<table>
<thead>
<tr>
<th>Mutagenicity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Strontium carbonate By analogy</td>
</tr>
<tr>
<td></td>
<td>In vitro tests did not show mutagenic effects</td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>No data available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Strontium carbonate By analogy</td>
</tr>
<tr>
<td></td>
<td>Test substance: Strontium nitrate</td>
</tr>
<tr>
<td></td>
<td>Animal testing did not show any carcinogenic effects.</td>
</tr>
</tbody>
</table>

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
- IARC
- ACGIH
- ACGIH

**Toxicity for reproduction and development**

**Toxicity to reproduction / fertility**

Strontium carbonate By analogy

Oral

Fertility NOAEL Parent: 287.5 mg/kg

**Developmental Toxicity/Teratogenicity**

Strontium carbonate By analogy

Gavage

Teratogenicity NOAEL: 144 mg/kg

**STOT**

**STOT-single exposure**

Strontium carbonate The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

**STOT-repeated exposure**

Strontium carbonate The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.

Oral 90-day - Rat, male and female

NOAEL: 21 mg/kg

Test substance: Strontium Chloride Hexahydrate

**Experience with human exposure**

No data available
Aspiration toxicity

No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish
Strontium carbonate

LC50 - 96 h : > 97.45 mg/l - Fishes, Cyprinus sp.
Test substance: Strontium nitrate
Method: OECD Test Guideline 203
By analogy
Not harmful to fish (LC/LL50 > 100 mg/L)

Acute toxicity to daphnia and other aquatic invertebrates.
Strontium carbonate

EC50 - 48 h : 125 mg/l - Daphnia magna (Water flea)
static test
Test substance: Strontium Chloride Hexahydrate
By analogy
Not harmful to aquatic invertebrates. (EC/EL50 > 100 mg/L)

Toxicity to aquatic plants
Strontium carbonate

ErC50 - 72 h : 104.7 mg/l - Pseudokirchneriella subcapitata (green algae)
static test
Test substance: Strontium nitrate
Method: OECD Test Guideline 201
By analogy
Not harmful to algae (EC/EL50 > 100 mg/L)

NOEC - 72 h : > 104.7 mg/l - Pseudokirchneriella subcapitata (green algae)
static test
Test substance: Strontium nitrate
Method: OECD Test Guideline 201
By analogy
Growth rate
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Toxicity to microorganisms
Strontium carbonate

NOEC - 3 h : > 100 mg/l - activated sludge
static test
Test substance: Strontium nitrate
Method: OECD Test Guideline 209
By analogy
Chronic toxicity to fish
Strontium carbonate
NOEC: > 100 mg/l - 34 Days - Danio rerio (zebra fish)
semi-static test
Analytical monitoring: yes
Test substance: Strontium nitrate
Method: OECD Test Guideline 210
By analogy
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Chronic toxicity to daphnia and other aquatic invertebrates.
Strontium carbonate
NOEC: 21 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test
Analytical monitoring: yes
Test substance: Strontium Chloride Hexahydrate
By analogy
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Chronic Toxicity to aquatic plants
No data available

12.2 Persistence and degradability
Abiotic degradation
No data available

Physical- and photo-chemical elimination
No data available

Biodegradation
Biodegradability
Strontium carbonate
The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water
No data available

Bioconcentration factor (BCF)
Strontium carbonate
potential accumulation of the cation

12.4 Mobility in soil
Adsorption potential (Koc)
Strontium carbonate
Water/soil
low solubility and mobility

Known distribution to environmental compartments
No data available
12.5 Results of PBT and vPvB assessment  Not applicable

12.6 Other adverse effects

Ecotoxicity assessment

Acute aquatic toxicity  
Strontium carbonate  Not harmful to aquatic life (LC/LL50, EC/EL50 > 100 mg/L)

Chronic aquatic toxicity  
Strontium carbonate  No adverse chronic effect observed up to and including the threshold of 1 mg / L.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal
- Where possible recycling is preferred to disposal or incineration.
- If recycling is not practicable, dispose of in compliance with local regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.
- Dispose of wastes in an approved waste disposal facility.
- In accordance with local and national regulations.

Advice on cleaning and disposal of packaging
- Dispose of as unused product.
- Where possible recycling is preferred to disposal or incineration.

SECTION 14: Transport information

TDG  not regulated

DOT  not regulated

NOM  not regulated

IMDG  not regulated

IATA  not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.
### SECTION 15: Regulatory information

#### 15.1 Notification status

<table>
<thead>
<tr>
<th>Inventory Information</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States TSCA Inventory</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Mexico INSQ (INSQ)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Canadian Domestic Substances List (DSL)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>New Zealand. Inventory of Chemical Substances</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Japan. CSCL - Inventory of Existing and New Chemical Substances</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Korea. Korean Existing Chemical Inventory (KECI)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>China. Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)</td>
<td>- If product is purchased from Solvay in Europe it is in compliance with REACH, if not please contact the supplier.</td>
</tr>
</tbody>
</table>

#### 15.2 National Regulations

No data available

### SECTION 16: Other information

**Revision Date:**

01/18/2018

**NFPA (National Fire Protection Association) - Classification**

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1 slight</td>
</tr>
<tr>
<td>Flammability</td>
<td>0 minimal</td>
</tr>
<tr>
<td>Instability or Reactivity</td>
<td>0 minimal</td>
</tr>
<tr>
<td>Special Notices</td>
<td>None</td>
</tr>
</tbody>
</table>

**HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification**

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1 slight</td>
</tr>
<tr>
<td>Flammability</td>
<td>0 minimal</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0 minimal</td>
</tr>
<tr>
<td>PPE</td>
<td>Determined by User; dependent on local conditions</td>
</tr>
</tbody>
</table>
Further information

- This sheet was updated (refer to the date at the top of this page). Subheadings and text which have been modified since the previous version are indicated with two vertical bars.

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA 8-hour, time-weighted average
- ACGIH American Conference of Governmental Industrial Hygienists
- OSHA Occupational Safety and Health Administration
- NTP National Toxicology Program
- IARC International Agency for Research on Cancer
- NIOSH National Institute for Occupational Safety and Health

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.