



# STRONTIUM CHLORIDE HEXAHYDRATE

## ALPHA CHEMICALS PTY LTD

Chemwatch Hazard Alert Code: 3

Chemwatch: 21896

Version No: 7.1.15.10

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: 20/08/2021

Print Date: 30/08/2021

S.GHS.AUS.EN

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

#### Product Identifier

|                               |  |
|-------------------------------|--|
| Product name                  | STRONTIUM CHLORIDE HEXAHYDRATE   |
| Chemical Name                 | strontium chloride   |
| Synonyms                      | Cl <sub>2</sub> -Sr; SrCl <sub>2</sub> ; strontium chloride, anhydrous; strontium chloride anhydrous; anhydrous strontium chloride; strontium chloride, hexahydrate; strontium dichloride, hexahydrate; strontium chloride hexahydrate; strontium dichloride hexahydrate; 10272; Strontium chloride AnalaR |
| Chemical formula              | Cl <sub>2</sub> Sr·6H <sub>2</sub> O Cl <sub>2</sub> -Sr   |
| Other means of identification | Not Available  |
| CAS number                    | 10476-85-4   |

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

|                          |   |
|--------------------------|---|
| Relevant identified uses | Used in the manufacture of strontium salts, pyrotechnics, electron tubes, antifreeze and dental desensitiser (Elecol). Source of redness in fireworks. Precursor to other compounds of strontium, such as yellow strontium chromate, which is used as a corrosion inhibitor for aluminium. employed in small quantities in glass-making and metallurgy. The radioactive isotope strontium-89, used for the treatment of bone cancer, is usually administered in the form of strontium chloride. Sea water aquaria require small amounts of strontium chloride, which is consumed in the production of the exoskeletons of certain plankton. SrCl <sub>2</sub> is useful in reducing tooth sensitivity by forming a barrier over microscopic tubules in the dentin containing nerve endings that have become exposed by gum recession. Brief strontium chloride exposure induces parthenogenetic activation of oocytes which is used in developmental biological research. For storage of ammonium at low pressure, mainly for use in NOx emission reduction on Diesel vehicles. |
|--------------------------|---|

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

|                         |   |
|-------------------------|---|
| Registered company name | ALPHA CHEMICALS PTY LTD                         |
| Address                 | 4 ALLEN PLACE WETHERILL PARK NSW 2099 Australia |
| Telephone               | 61 (0)2 9982 4622                               |
| Fax                     | Not Available                                   |
| Website                 | ~   |
| Email                   | shane@alphachem.com.au                          |

#### Emergency telephone number

|                                   |                         |
|-----------------------------------|-------------------------|
| Association / Organisation        | ALPHA CHEMICALS PTY LTD |
| Emergency telephone numbers       | 61 (0)418 237 771       |
| Other emergency telephone numbers | Not Available           |

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

#### ChemWatch Hazard Ratings

|              | Min | Max |
|--------------|-----|-----|
| Flammability | 0   |     |
| Toxicity     | 2   |     |
| Body Contact | 3   |     |
| Reactivity   | 0   |     |
| Chronic      | 0   |     |

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

|                    |  |
|--------------------|--|
| Poisons Schedule   | Not Applicable   |
| Classification [1] | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 |
| Legend:            | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI  |

**STRONTIUM CHLORIDE HEXAHYDRATE**

**Label elements**

|                            |               |
|----------------------------|---------------|
| <b>Hazard pictogram(s)</b> |               |
| <b>Signal word</b>         | <b>Danger</b> |

**Hazard statement(s)**

|             |                                   |
|-------------|-----------------------------------|
| <b>H302</b> | Harmful if swallowed.             |
| <b>H315</b> | Causes skin irritation.           |
| <b>H318</b> | Causes serious eye damage.        |
| <b>H335</b> | May cause respiratory irritation. |

**Precautionary statement(s) Prevention**

|             |  |
|-------------|--|
| <b>P271</b> | Use only outdoors or in a well-ventilated area.                                  |
| <b>P280</b> | Wear protective gloves, protective clothing, eye protection and face protection. |
| <b>P261</b> | Avoid breathing dust/fumes.  |
| <b>P264</b> | Wash all exposed external body areas thoroughly after handling.                  |
| <b>P270</b> | Do not eat, drink or smoke when using this product.                              |

**Precautionary statement(s) Response**

|                       |  |
|-----------------------|--|
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| <b>P310</b>           | Immediately call a POISON CENTER/doctor/physician/first aider.   |
| <b>P301+P312</b>      | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.  |
| <b>P302+P352</b>      | IF ON SKIN: Wash with plenty of water.   |
| <b>P304+P340</b>      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| <b>P330</b>           | Rinse mouth.   |
| <b>P332+P313</b>      | If skin irritation occurs: Get medical advice/attention.   |
| <b>P362+P364</b>      | Take off contaminated clothing and wash it before reuse.   |

**Precautionary statement(s) Storage**

|                  |  |
|------------------|--|
| <b>P405</b>      | Store locked up.   |
| <b>P403+P233</b> | Store in a well-ventilated place. Keep container tightly closed. |

**Precautionary statement(s) Disposal**

|             |  |
|-------------|--|
| <b>P501</b> | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|-------------|--|

**SECTION 3 Composition / information on ingredients**

**Substances**

| CAS No     | %[weight] | Name                           |
|------------|-----------|--------------------------------|
| 10476-85-4 | >=99      | Strontium Chloride Hexahydrate |

**Legend:** 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; \* EU IOELVs available

**Mixtures**

See section above for composition of Substances

**SECTION 4 First aid measures**

**Description of first aid measures**

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>  |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> </ul>  |

**STRONTIUM CHLORIDE HEXAHYDRATE**

|                  |   |
|------------------|---|
|                  | <ul style="list-style-type: none"> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>   |
| <b>Ingestion</b> | <ul style="list-style-type: none"> <li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>▶ For advice, contact a Poisons Information Centre or a doctor.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li> <li>▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li> <li>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li>▶ <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p> |

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

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).  
For poisons (where specific treatment regime is absent):

**BASIC TREATMENT**

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Anticipate seizures.
- ▶ **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

**ADVANCED TREATMENT**

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

Treat symptomatically.

**SECTION 5 Firefighting measures**

**Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**Special hazards arising from the substrate or mixture**

|                             |             |
|-----------------------------|-------------|
| <b>Fire Incompatibility</b> | None known. |
|-----------------------------|-------------|

**Advice for firefighters**

|                              |   |
|------------------------------|---|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>Decomposition may produce toxic fumes of:<br/>hydrogen chloride<br/>metal oxides<br/>May emit poisonous fumes.<br/>May emit corrosive fumes.</p>  |
| <b>HAZCHEM</b>               | Not Applicable  |

**SECTION 6 Accidental release measures**

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

**STRONTIUM CHLORIDE HEXAHYDRATE**

See section 8

**Environmental precautions**

See section 12

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

|                     |   |
|---------------------|---|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>   |
| <b>Major Spills</b> | <p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ <b>IF DRY:</b> Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.</li> </ul> |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 Handling and storage**

**Precautions for safe handling**

|                          |   |
|--------------------------|---|
| <b>Safe handling</b>     | <ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ <b>DO NOT allow material to contact humans, exposed food or food utensils.</b></li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> </ul>   |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> <p>For major quantities:</p> <ul style="list-style-type: none"> <li>▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul> |

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

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Glass container is suitable for laboratory quantities</li> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>  |
| <b>Storage incompatibility</b> | <p>Inorganic alkaline earth metal derivative.<br/>Derivative of very electropositive metal.</p> <ul style="list-style-type: none"> <li>▶ Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.</li> <li>▶ These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.</li> <li>▶ The state of subdivision may affect the results.</li> </ul> |

**SECTION 8 Exposure controls / personal protection**

**Control parameters**

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Not Available

**Emergency Limits**

| Ingredient                     | TEEL-1  | TEEL-2   | TEEL-3    |
|--------------------------------|---------|----------|-----------|
| Strontium Chloride Hexahydrate | 8 mg/m3 | 88 mg/m3 | 360 mg/m3 |

| Ingredient                     | Original IDLH | Revised IDLH  |
|--------------------------------|---------------|---------------|
| Strontium Chloride Hexahydrate | Not Available | Not Available |


**Occupational Exposure Banding**

| Ingredient                     | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|--------------------------------|-----------------------------------|----------------------------------|
| Strontium Chloride Hexahydrate | E                                 | ≤ 0.01 mg/m <sup>3</sup>         |

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**STRONTIUM CHLORIDE HEXAHYDRATE**

**Exposure controls**

|  |   |
|--|---|
| <p><b>Appropriate engineering controls</b></p> | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:<br/>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br/>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.<br/>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> <li>Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.</li> </ul>   |
| <p><b>Personal protection</b></p>              |   |
| <p><b>Eye and face protection</b></p>          | <ul style="list-style-type: none"> <li>Safety glasses with side shields.</li> <li>Chemical goggles.</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly.</li> </ul>  |
| <p><b>Skin protection</b></p>                  | <p>See Hand protection below</p>  |
| <p><b>Hands/feet protection</b></p>            | <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br/>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br/>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.<br/>Suitability and durability of glove type is dependent on usage.<br/>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>polychloroprene.</li> <li>nitrile rubber.</li> <li>butyl rubber.</li> <li>fluorocautchouc.</li> <li>polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p> |
| <p><b>Body protection</b></p>                  | <p>See Other protection below</p>   |
| <p><b>Other protection</b></p>                 | <ul style="list-style-type: none"> <li>Overalls.</li> <li>P.V.C apron.</li> <li>Barrier cream.</li> <li>Skin cleansing cream.</li> <li>Eye wash unit.</li> </ul>  |

**Respiratory protection**

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | P1<br>Air-line*      | -<br>-               | PAPR-P1<br>-           |
| up to 50 x ES                      | Air-line**           | P2                   | PAPR-P2                |
| up to 100 x ES                     | -                    | P3<br>Air-line*      | -                      |
| 100+ x ES                          | -                    | Air-line**           | PAPR-P3                |

\* - Negative pressure demand \*\* - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

**SECTION 9 Physical and chemical properties**

**STRONTIUM CHLORIDE HEXAHYDRATE**

**Information on basic physical and chemical properties**

|   |  |  |                            |
|---|--|--|----------------------------|
| <b>Appearance</b>                                   | Odourless, white, crystalline needles with sharp, bitter taste. Soluble in water and alcohol. Deliquesces in moist air. Available as hexahydrate or in anhydrous form. |  |                            |
| <b>Physical state</b>                               | Divided Solid  | <b>Relative density (Water = 1)</b>            | 1.96                       |
| <b>Odour</b>  | Not Available  | <b>Partition coefficient n-octanol / water</b> | Not Available              |
| <b>Odour threshold</b>                              | Not Available  | <b>Auto-ignition temperature (°C)</b>          | Not Applicable             |
| <b>pH (as supplied)</b>                             | Not Applicable   | <b>Decomposition temperature</b>               | Not Available              |
| <b>Melting point / freezing point (°C)</b>          | 150 (loses 6H <sub>2</sub> O)  | <b>Viscosity (cSt)</b>                         | Not Applicable             |
| <b>Initial boiling point and boiling range (°C)</b> | 1250   | <b>Molecular weight (g/mol)</b>                | 266.64 (6H <sub>2</sub> O) |
| <b>Flash point (°C)</b>                             | Not Applicable   | <b>Taste</b>                                   | Not Available              |
| <b>Evaporation rate</b>                             | Not Applicable   | <b>Explosive properties</b>                    | Not Available              |
| <b>Flammability</b>                                 | Not Applicable   | <b>Oxidising properties</b>                    | Not Available              |
| <b>Upper Explosive Limit (%)</b>                    | Not Applicable   | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Applicable             |
| <b>Lower Explosive Limit (%)</b>                    | Not Applicable   | <b>Volatile Component (%vol)</b>               | Not Applicable             |
| <b>Vapour pressure (kPa)</b>                        | Not Applicable   | <b>Gas group</b>                               | Not Available              |
| <b>Solubility in water</b>                          | Miscible   | <b>pH as a solution (%)</b>                    | 7                          |
| <b>Vapour density (Air = 1)</b>                     | Not Applicable   | <b>VOC g/L</b>                                 | Not Applicable             |

**SECTION 10 Stability and reactivity**

|   |  |
|---|--|
| <b>Reactivity</b>                         | See section 7  |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <b>Possibility of hazardous reactions</b> | See section 7  |
| <b>Conditions to avoid</b>                | See section 7  |
| <b>Incompatible materials</b>             | See section 7  |
| <b>Hazardous decomposition products</b>   | See section 5  |

**SECTION 11 Toxicological information**

**Information on toxicological effects**

|                                       |  |                   |
|---------------------------------------|--|-------------------|
| <b>Inhaled</b>                        | <p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p>  |                   |
| <b>Ingestion</b>                      | <p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Strontium salts induce vomiting and diarrhoea when swallowed in large quantity. Absorbed strontium may produce painful contractions of the limbs and may be involved in abnormalities of the heart.</p>  |                   |
| <b>Skin Contact</b>                   | <p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>   |                   |
| <b>Eye</b>                            | <p>If applied to the eyes, this material causes severe eye damage.</p>   |                   |
| <b>Chronic</b>                        | <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Strontium accumulates in teeth and bone, especially in the growth plates of rapidly growing bone. A chronic diet high in strontium and low in calcium produces severe bone deformities, inco-ordination, weakness and paralysis.</p> <p>Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.</p> |                   |
| <b>Strontium Chloride Hexahydrate</b> | <b>TOXICITY</b>  | <b>IRRITATION</b> |
|                                       | Inhalation(Rat) LC50; >4.5 mg/l4h <sup>[1]</sup>   | Not Available     |
|                                       | Oral(Rat) LD50; >2000 mg/kg <sup>[1]</sup>   |                   |
| <b>Legend:</b>                        | <p>1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances</p>   |                   |

**STRONTIUM CHLORIDE HEXAHYDRATE**

|                                       |   |  |  |
|---------------------------------------|---|--|--|
| <b>STRONTIUM CHLORIDE HEXAHYDRATE</b> | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production. |  |  |
|---------------------------------------|---|--|--|

|  |   |                                 |   |
|--|---|---------------------------------|---|
| <b>Acute Toxicity</b>                    | ✓ | <b>Carcinogenicity</b>          | ✗ |
| <b>Skin Irritation/Corrosion</b>         | ✓ | <b>Reproductivity</b>           | ✗ |
| <b>Serious Eye Damage/Irritation</b>     | ✓ | <b>STOT - Single Exposure</b>   | ✓ |
| <b>Respiratory or Skin sensitisation</b> | ✗ | <b>STOT - Repeated Exposure</b> | ✗ |
| <b>Mutagenicity</b>                      | ✗ | <b>Aspiration Hazard</b>        | ✗ |

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
✓ – Data available to make classification

**SECTION 12 Ecological information**

**Toxicity**

|                                       | Endpoint  | Test Duration (hr) | Species                       | Value           | Source |
|---------------------------------------|-----------|--------------------|-------------------------------|-----------------|--------|
| <b>Strontium Chloride Hexahydrate</b> | EC50      | 72h                | Algae or other aquatic plants | >43.3mg/l       | 2      |
|                                       | EC50      | 48h                | Crustacea                     | 76.47-122.4mg/l | 4      |
|                                       | NOEC(ECx) | 96h                | Fish                          | >=40.3mg/l      | 2      |
|                                       | LC50      | 96h                | Fish                          | >40.3mg/l       | 2      |
|                                       | BCF       | 672h               | Fish                          | 7-43            | 7      |

**Legend:** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

For Chloride: Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counter-ion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure. Healthy individuals can tolerate the intake of large quantities of chloride provided that there is an intake of fresh water following ingestion. Although excessive intake of drinking-water containing sodium chloride at concentrations above 2.5 g/L has been reported to produce hypertension, this effect is believed to be related to the sodium ion concentration. Chloride concentrations in excess of about 250 mg/L can give rise to detectable taste in water. Consumers can, however, become accustomed to concentrations in excess of 250 mg/L.

For strontium:

Environmental Fate: Strontium present in the atmosphere is in the form of wet or dry aerosols. The principal chemical species in the air is strontium oxide (SrO). Strontium oxide will react rapidly in the presence of moisture to form Sr<sup>2+</sup> and SrOH<sup>+</sup> ions. Strontium is dispersed by atmospheric cycling and is subsequently deposited by wet deposition on the earth's surface. In surface water and groundwater, strontium exists primarily as a hydrated ion. Strontium can form ionic complexes with other inorganic or organic substances. Strontium is relatively mobile in water. However, the formation of insoluble complexes or sorption of strontium to soils can reduce its mobility in water.

**DO NOT discharge into sewer or waterways.**

**Persistence and degradability**

| Ingredient | Persistence: Water/Soil               | Persistence: Air                      |
|------------|---------------------------------------|---------------------------------------|
|            | No Data available for all ingredients | No Data available for all ingredients |

**Bioaccumulative potential**

| Ingredient                     | Bioaccumulation |
|--------------------------------|-----------------|
| Strontium Chloride Hexahydrate | LOW (BCF = 57)  |

**Mobility in soil**

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

**SECTION 13 Disposal considerations**

**Waste treatment methods**

|                                     |   |
|-------------------------------------|---|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> </ul> |
|-------------------------------------|---|



**STRONTIUM CHLORIDE HEXAHYDRATE**

- Disposal (if all else fails)
- This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.
- **DO NOT allow wash water from cleaning or process equipment to enter drains.**
  - It may be necessary to collect all wash water for treatment before disposal.
  - In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
  - Where in doubt contact the responsible authority.
  - Recycle wherever possible or consult manufacturer for recycling options.
  - Consult State Land Waste Management Authority for disposal.
  - Bury residue in an authorised landfill.
  - Recycle containers if possible, or dispose of in an authorised landfill.

**SECTION 14 Transport information**

**Labels Required**

|                         |                |
|-------------------------|----------------|
| <b>Marine Pollutant</b> | NO             |
| <b>HAZCHEM</b>          | Not Applicable |

**Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

| Product name                   | Group         |
|--------------------------------|---------------|
| Strontium Chloride Hexahydrate | Not Available |

**Transport in bulk in accordance with the ICG Code**

| Product name                   | Ship Type     |
|--------------------------------|---------------|
| Strontium Chloride Hexahydrate | Not Available |

**SECTION 15 Regulatory information**

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**Strontium Chloride Hexahydrate is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

**National Inventory Status**

| National Inventory                              | Status  |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes   |
| Canada - DSL                                    | Yes   |
| Canada - NDSL                                   | No (Strontium Chloride Hexahydrate)   |
| China - IECSC                                   | Yes   |
| Europe - EINEC / ELINCS / NLP                   | Yes   |
| Japan - ENCS                                    | Yes   |
| Korea - KECI                                    | Yes   |
| New Zealand - NZIoC                             | Yes   |
| Philippines - PICCS                             | Yes   |
| USA - TSCA                                      | Yes   |
| Taiwan - TCSI                                   | Yes   |
| Mexico - INSQ                                   | No (Strontium Chloride Hexahydrate)   |
| Vietnam - NCI                                   | Yes   |
| Russia - FBEPH                                  | Yes   |
| <b>Legend:</b>                                  | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

**SECTION 16 Other information**

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 20/08/2021 |
| <b>Initial Date</b>  | 01/11/2009 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated   |
|---------|----------------|--|
| 6.1.1.1 | 31/12/2016     | Physical Properties, Storage (storage incompatibility), Storage (storage requirement), Supplier Information, Use |



## STRONTIUM CHLORIDE HEXAHYDRATE

| Version   | Date of Update | Sections Updated              |
|-----------|----------------|-------------------------------|
| 6.1.2.1   | 26/04/2021     | Regulation Change             |
| 6.1.3.1   | 03/05/2021     | Regulation Change             |
| 6.1.4.1   | 06/05/2021     | Regulation Change             |
| 6.1.5.1   | 10/05/2021     | Regulation Change             |
| 6.1.5.2   | 30/05/2021     | Template Change               |
| 6.1.5.3   | 04/06/2021     | Template Change               |
| 6.1.5.4   | 05/06/2021     | Template Change               |
| 6.1.6.4   | 07/06/2021     | Regulation Change             |
| 6.1.6.5   | 09/06/2021     | Template Change               |
| 6.1.6.6   | 11/06/2021     | Template Change               |
| 6.1.6.7   | 15/06/2021     | Template Change               |
| 6.1.7.7   | 17/06/2021     | Regulation Change             |
| 6.1.8.7   | 21/06/2021     | Regulation Change             |
| 6.1.8.8   | 05/07/2021     | Template Change               |
| 6.1.9.8   | 14/07/2021     | Regulation Change             |
| 6.1.10.8  | 19/07/2021     | Regulation Change             |
| 6.1.10.9  | 01/08/2021     | Template Change               |
| 6.1.11.9  | 02/08/2021     | Regulation Change             |
| 6.1.12.9  | 05/08/2021     | Regulation Change             |
| 6.1.13.9  | 09/08/2021     | Regulation Change             |
| 7.1.13.9  | 20/08/2021     | Expiration. Review and Update |
| 7.1.14.9  | 23/08/2021     | Regulation Change             |
| 7.1.15.9  | 26/08/2021     | Regulation Change             |
| 7.1.15.10 | 29/08/2021     | Template Change               |

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC—TWA: Permissible Concentration-Time Weighted Average  
PC—STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit.  
IDLH: Immediately Dangerous to Life or Health Concentrations  
ES: Exposure Standard  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index  
AIIIC: Australian Inventory of Industrial Chemicals  
DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.