



## 100053-2 Strontium (1000µg/mL in 2% HCl)

### High-Purity Standards

Catalogue number: 100053-2  
Version No: 2.2  
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 09/07/2016  
Print Date: 09/07/2016  
S.GHS.USA.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

Product name	100053-2 Strontium (1000µg/mL in 2% HCl)
Synonyms	1000µg/mL Strontium in 2% HCl
Proper shipping name	Hydrochloric acid (contains hydrochloric acid)
Other means of identification	100053-2

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

Relevant identified uses	Use according to manufacturer's directions.
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	High-Purity Standards
Address	PO Box 41727 SC 29423 United States
Telephone	843-767-7900
Fax	843-767-7906
Website	highpuritystandards.com
Email	Not Available

### Emergency phone number

Association / Organisation	INFOTRAC
Emergency telephone numbers	1-800-535-5053
Other emergency telephone numbers	1-352-323-3500

## SECTION 2 HAZARD(S) IDENTIFICATION

### Classification of the substance or mixture

Classification	Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1
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### Label elements

GHS label elements	
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SIGNAL WORD	DANGER
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### Hazard statement(s)

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

### Hazard(s) not otherwise specified

Not Applicable

Continued...

**Precautionary statement(s) Prevention**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
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**Precautionary statement(s) Response**

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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**Precautionary statement(s) Storage**

P405	Store locked up.
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**Precautionary statement(s) Disposal**

P501	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
7440-24-6	0.1 (as Sr)	<u>strontium</u>
7647-01-0	2	<u>hydrochloric acid</u>
7732-18-5	balance	<u>water</u>

**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 or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul> <p>For thermal burns:</p> <ul style="list-style-type: none"> <li>▶ Decontaminate area around burn.</li> <li>▶ Consider the use of cold packs and topical antibiotics.</li> </ul> <p>For first-degree burns (affecting top layer of skin)</p> <ul style="list-style-type: none"> <li>▶ Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides.</li> <li>▶ Use compresses if running water is not available.</li> <li>▶ Cover with sterile non-adhesive bandage or clean cloth.</li> <li>▶ Do NOT apply butter or ointments; this may cause infection.</li> <li>▶ Give over-the counter pain relievers if pain increases or swelling, redness, fever occur.</li> </ul> <p>For second-degree burns (affecting top two layers of skin)</p> <ul style="list-style-type: none"> <li>▶ Cool the burn by immerse in cold running water for 10-15 minutes.</li> <li>▶ Use compresses if running water is not available.</li> <li>▶ Do NOT apply ice as this may lower body temperature and cause further damage.</li> <li>▶ Do NOT break blisters or apply butter or ointments; this may cause infection.</li> <li>▶ Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape.</li> </ul> <p>To prevent shock: (unless the person has a head, neck, or leg injury, or it would cause discomfort):</p> <ul style="list-style-type: none"> <li>▶ Lay the person flat.</li> <li>▶ Elevate feet about 12 inches.</li> <li>▶ Elevate burn area above heart level, if possible.</li> <li>▶ Cover the person with coat or blanket.</li> <li>▶ Seek medical assistance.</li> </ul> <p>For third-degree burns</p> <p>Seek immediate medical or emergency assistance.</p> <p>In the mean time:</p> <ul style="list-style-type: none"> <li>▶ Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound.</li> <li>▶ Separate burned toes and fingers with dry, sterile dressings.</li> <li>▶ Do not soak burn in water or apply ointments or butter; this may cause infection.</li> <li>▶ To prevent shock see above.</li> <li>▶ For an airway burn, do not place pillow under the person's head when the person is lying down. This can close the airway.</li> <li>▶ Have a person with a facial burn sit up.</li> <li>▶ Check pulse and breathing to monitor for shock until emergency help arrives.</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>▶ Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <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>

	<ul style="list-style-type: none"> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b> (ICSC13719)</p>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul>

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

See Section 11

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

for corrosives:

**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.
- ▶ Where eyes have been exposed, flush immediately with water and continue to irrigate with normal saline during transport to hospital.
- ▶ **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.
- ▶ Skin burns should be covered with dry, sterile bandages, following decontamination.
- ▶ **DO NOT attempt neutralisation as exothermic reaction may occur.**

**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.

**EMERGENCY DEPARTMENT**

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Consider endoscopy to evaluate oral injury.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

**SECTION 5 FIRE-FIGHTING 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.
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**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ May emit corrosive fumes.</li> </ul>

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

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

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>Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>Clean up all spills immediately.</li> </ul>
<b>Major Spills</b>	

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><b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>Store in original containers.</li> </ul>

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

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>Lined metal can, lined metal pail/ can.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>Drums and jericans must be of the non-removable head type.</li> </ul>
<b>Storage incompatibility</b>	<p>Hydrogen chloride:</p> <ul style="list-style-type: none"> <li>reacts strongly with strong oxidisers (releasing chlorine gas), acetic anhydride, caesium cyanotridecahydrodecaborate(2-), ethylidene difluoride, hexalithium disilicide, metal acetylide, sodium, silicon dioxide, tetraselenium tetranitride, and many organic materials</li> <li>is incompatible with alkaline materials, acetic anhydride, acetylides, aliphatic amines, alkanolamines, alkylene oxides, aluminium, aluminium-titanium alloys, aromatic amines, amines, amides, 2-aminoethanol, ammonia, ammonium hydroxide, borides, calcium phosphide, carbides, carbonates, cyanides, chlorosulfonic acid, ethylenediamine, ethyleneimine, epichlorohydrin, formaldehyde, isocyanates, metals, metal oxides, metal hydroxides, metal acetylides, metal carbides, oleum, organic anhydrides, potassium permanganate, perchloric acid, phosphides, 3-propiolactone, silicides, sulfides, sulfites, sulfuric acid, uranium phosphide, vinyl acetate, vinylidene fluoride</li> <li>attacks most metals forming flammable hydrogen gas, and some plastics, rubbers and coatings</li> <li>reacts with zinc, brass, galvanised iron, aluminium, copper and copper alloys</li> </ul> <ul style="list-style-type: none"> <li>Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.</li> <li>Avoid strong bases.</li> </ul>

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	hydrochloric acid	Hydrogen chloride	Not Available	Not Available	7 mg/m3 / 5 ppm	Not Available
US ACGIH Threshold Limit Values (TLV)	hydrochloric acid	Hydrogen chloride	Not Available	Not Available	2 ppm	TLV® Basis: URT irr
US NIOSH Recommended Exposure Limits (RELs)	hydrochloric acid	Anhydrous hydrogen chloride; Aqueous hydrogen chloride (i.e., Hydrochloric acid, Muriatic acid) [Note: Often used in an aqueous solution.]	Not Available	Not Available	7 mg/m3 / 5 ppm	Not Available

**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
strontium	Strontium	7.1 mg/m3	78 mg/m3	470 mg/m3
hydrochloric acid	Hydrogen chloride; (Hydrochloric acid)	Not Available	Not Available	Not Available
hydrochloric acid	Deuteriochloric acid; (Deuterium chloride)	1.8 ppm	22 ppm	100 ppm

Ingredient	Original IDLH	Revised IDLH
strontium	Not Available	Not Available
hydrochloric acid	100 ppm	50 ppm
water	Not Available	Not Available

**Exposure controls**

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> </ul>
<b>Skin protection</b>	See Hand protection below

## 100053-2 Strontium (1000µg/mL in 2% HCl)

<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Elbow length PVC gloves</li> <li>▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul> <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.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	▶ Overalls.
<b>Thermal hazards</b>	Not Available

**Respiratory protection**

Type B-P Filter of sufficient capacity.

76b-p()

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

<b>Appearance</b>	colorless		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<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 Available
<b>pH (as supplied)</b>	<2	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

**SECTION 10 STABILITY AND REACTIVITY**

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	▶ Contact with alkaline material liberates heat
<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>	The material can cause respiratory irritation in some persons. The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by inhalation". Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure.
<b>Ingestion</b>	The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion. The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion".
<b>Skin Contact</b>	The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
<b>Eye</b>	The material can produce severe chemical burns to the eye following direct contact. If applied to the eyes, this material causes severe eye damage.
<b>Chronic</b>	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Continued...

	Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the nasal mucous membranes.	
100053-2 Strontium (1000µg/mL in 2% HCl)	TOXICITY	IRRITATION
	Not Available	Not Available
strontium	TOXICITY	IRRITATION
	Not Available	Not Available
hydrochloric acid	TOXICITY	IRRITATION
	Inhalation (rat) LC50: 3124 ppm/1hr <sup>[2]</sup> Oral (rat) LD50: 900 mg/kg <sup>[2]</sup>	Eye (rabbit): 5mg/30s - mild
water	TOXICITY	IRRITATION
	Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>	Not Available

**Legend:** 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

HYDROCHLORIC ACID	for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. The material may be irritating to the eye, with prolonged contact causing inflammation. The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans.
100053-2 Strontium (1000µg/mL in 2% HCl) & HYDROCHLORIC ACID	Asthma-like symptoms may continue for months or even years after exposure to the material ceases.
STRONTIUM & HYDROCHLORIC ACID & WATER	No significant acute toxicological data identified in literature search.

Acute Toxicity	☒	Carcinogenicity	☒
Skin Irritation/Corrosion	✔	Reproductivity	☒
Serious Eye Damage/Irritation	✔	STOT - Single Exposure	☒
Respiratory or Skin sensitisation	☒	STOT - Repeated Exposure	☒
Mutagenicity	☒	Aspiration Hazard	☒

**Legend:** ✘ – Data available but does not fill the criteria for classification  
✔ – Data required to make classification available  
☒ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
hydrochloric acid	LC50	96	Fish	70.057mg/L	3
hydrochloric acid	EC50	96	Algae or other aquatic plants	344.947mg/L	3
hydrochloric acid	EC50	9.33	Fish	0.014000mg/L	4
hydrochloric acid	NOEC	0.08	Fish	10mg/L	4
water	LC50	96	Fish	897.520mg/L	3
water	EC50	96	Algae or other aquatic plants	8768.874mg/L	3
water	EC50	384	Crustacea	199.179mg/L	3

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - 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

Prevent, by any means available, spillage from entering drains or water courses.

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

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
hydrochloric acid	LOW	LOW
water	LOW	LOW

**Bioaccumulative potential**

Ingredient	Bioaccumulation
hydrochloric acid	LOW (LogKOW = 0.5392)
water	LOW (LogKOW = -1.38)

**Mobility in soil**

Ingredient	Mobility
hydrochloric acid	LOW (KOC = 14.3)
water	LOW (KOC = 14.3)


**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

<b>Product / Packaging disposal</b>	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ Recycle wherever possible.</li> </ul>
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**SECTION 14 TRANSPORT INFORMATION**

**Labels Required**

	
<b>Marine Pollutant</b>	NO

**Land transport (DOT)**

<b>UN number</b>	1789				
<b>UN proper shipping name</b>	Hydrochloric acid (contains hydrochloric acid)				
<b>Transport hazard class(es)</b>	<table border="1" style="width: 100%;"> <tr> <td>Class</td> <td>8</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table>	Class	8	Subrisk	Not Applicable
Class	8				
Subrisk	Not Applicable				
<b>Packing group</b>	II				
<b>Environmental hazard</b>	Not Applicable				
<b>Special precautions for user</b>	<table border="1" style="width: 100%;"> <tr> <td>Hazard Label</td> <td>8</td> </tr> <tr> <td>Special provisions</td> <td>A3, A6, B3, B15, IB2, N41, T8, TP2</td> </tr> </table>	Hazard Label	8	Special provisions	A3, A6, B3, B15, IB2, N41, T8, TP2
Hazard Label	8				
Special provisions	A3, A6, B3, B15, IB2, N41, T8, TP2				

**Air transport (ICAO-IATA / DGR)**

<b>UN number</b>	1789														
<b>UN proper shipping name</b>	Hydrochloric acid (contains hydrochloric acid)														
<b>Transport hazard class(es)</b>	<table border="1" style="width: 100%;"> <tr> <td>ICAO/IATA Class</td> <td>8</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>8L</td> </tr> </table>	ICAO/IATA Class	8	ICAO / IATA Subrisk	Not Applicable	ERG Code	8L								
ICAO/IATA Class	8														
ICAO / IATA Subrisk	Not Applicable														
ERG Code	8L														
<b>Packing group</b>	II														
<b>Environmental hazard</b>	Not Applicable														
<b>Special precautions for user</b>	<table border="1" style="width: 100%;"> <tr> <td>Special provisions</td> <td>A3A803</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>855</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>30 L</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>851</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>1 L</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Y840</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>0.5 L</td> </tr> </table>	Special provisions	A3A803	Cargo Only Packing Instructions	855	Cargo Only Maximum Qty / Pack	30 L	Passenger and Cargo Packing Instructions	851	Passenger and Cargo Maximum Qty / Pack	1 L	Passenger and Cargo Limited Quantity Packing Instructions	Y840	Passenger and Cargo Limited Maximum Qty / Pack	0.5 L
Special provisions	A3A803														
Cargo Only Packing Instructions	855														
Cargo Only Maximum Qty / Pack	30 L														
Passenger and Cargo Packing Instructions	851														
Passenger and Cargo Maximum Qty / Pack	1 L														
Passenger and Cargo Limited Quantity Packing Instructions	Y840														
Passenger and Cargo Limited Maximum Qty / Pack	0.5 L														

**Sea transport (IMDG-Code / GGVSee)**

<b>UN number</b>	1789
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<b>UN proper shipping name</b>	HYDROCHLORIC ACID (contains hydrochloric acid)	
<b>Transport hazard class(es)</b>	IMDG Class	8
	IMDG Subrisk	Not Applicable
<b>Packing group</b>	II	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	EMS Number	F-A, S-B
	Special provisions	Not Applicable
	Limited Quantities	1 L

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

Source	Product name	Pollution Category	Ship Type
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	Hydrochloric acid	Z	3

**SECTION 15 REGULATORY INFORMATION**

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

**STRONTIUM(7440-24-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
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**HYDROCHLORIC ACID(7647-01-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - Alaska Limits for Air Contaminants	US - Washington Permissible exposure limits of air contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)	US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - California Permissible Exposure Limits for Chemical Contaminants	US ACGIH Threshold Limit Values (TLV)
US - Hawaii Air Contaminant Limits	US ACGIH Threshold Limit Values (TLV) - Carcinogens
US - Idaho - Limits for Air Contaminants	US EPCRA Section 313 Chemical List
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs)
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Oregon Permissible Exposure Limits (Z-1)	US SARA Section 302 Extremely Hazardous Substances
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
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**Federal Regulations**

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

**SECTION 311/312 HAZARD CATEGORIES**

Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire hazard	No
Pressure hazard	No
Reactivity hazard	No

**US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)**

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Hydrochloric acid	5000	2270

**State Regulations**

**US. CALIFORNIA PROPOSITION 65**

None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (strontium; hydrochloric acid; water)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y



Japan - ENCS	N (strontium; water)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

### 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.

### 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  
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

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