

1. IDENTIFICATION

Product Name	Strontium Carbonate
Other Names	Carbonic Acid, Strontium Salt (1:1); Strontionit; Strontium Carbonate.
Uses	Manufacture of pyrotechnical products. Use in welding electrode coating. Glass industry. manufacture of glazes, frits and enamels. Manufacture of ceramic materials. manufacture of electro-ceramic materials. manufacture of other strontium compounds. Used in zinc electrolysis. Professional use in pyrotechnical products. Professional use in other strontium substances
Chemical Family	No Data Available
Chemical Formula	CO ₃ Sr
Chemical Name	Strontium Carbonate
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not scheduled

Globally Harmonised System

Hazard Classification NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Signal Word None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications Health Hazards **6.9B** Substances that are harmful to human target organs or systems

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Strontium Carbonate	No Data Available	1633-05-2	>=96.0 %
Barium Carbonate	No Data Available	513-77-9	<=2.5 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Rinse mouth with plenty of water. If large amounts were swallowed give water to drink. Do NOT induce vomiting. Get medical attention.
Eye	Immediately flush eyes with plenty of water for 15 minutes, holding eyelids open. In all cases of eye contamination, it is a sensible precaution to seek medical advice.
Skin	Remove contaminated clothing. Wash affected area with soap and plenty of water. If irritation persists, seek medical attention.
Inhaled	Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.
Advice to Doctor	Most important symptoms and effects, both acute and delayed : In case of inhalation : May cause nose, throat, and lung irritation. Repeated or prolonged exposure Risk of pulmonary overload (respirable particulates) Possible risk of irreversible effects through inhalation.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.
Flammability Conditions	Non-combustible solid.

Extinguishing Media	In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions.
Fire and Explosion Hazard	Non-combustible solid.
Hazardous Products of Combustion	May produce oxides of carbon and the contained metal. Strontium oxide, barium oxide. Contact with acids liberates carbon dioxide (CO ₂), sometimes violently.
Special Fire Fighting Instructions	Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves).
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Avoid accidents, clean up immediately. Slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Avoid generating dust. Stop leak if safe to do so. Isolate the danger area. Use clean, non-sparking tools and equipment.
Clean Up Procedures	Vacuum or wet sweeping may be used to avoid dust dispersal. Place into suitable containers for disposal.
Containment	Stop leak if safe to do so. Isolate the danger area.
Environmental Precautionary Measures	Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. Ensure adequate ventilation. Protect against physical damage.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Isolate from acids and alkalis. This product is not classified dangerous for transport according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container	Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	<p>Exposure Limit Values: Strontium carbonate CAS: 2633-05-2 - US. ACGIH Threshold Limit Values Remarks: none established</p> <p>Barium carbonate CAS: 513-77-9 - UK. EH40 Workplace Exposure Limits (WELs) 2007: time weighted average = 0.5 mg/m³. Remarks: as Ba - US. ACGIH Threshold Limit Values 2009: time weighted average = 0.5 mg/m³. Remarks: as Ba - EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents. 02 2006: time weighted average = 0.5 mg/m³. Remarks: as Ba</p> <p>Nanoparticles: Remarks: none established, Avoid exposure - obtain special instructions before use.</p> <p>Predicted No Effect Concentration</p>
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- Fresh water, 2.06 mg/l, Sr
- Fresh water sediment, 1.781 mg/kg
- Soil, 323.6 mg/kg
- Sewage treatment plants, 4.2 mg/l, Sr

Derived No Effect Level / Derived minimal effect level

- Workers, Dermal, Chronic exposure, 27.9 mg/kg, Systemic effects
- Workers, Inhalation, Chronic exposure, 3.5 mg/m³, Systemic effects
- Workers, Inhalation, Chronic exposure, 0.84 mg/m³, Local effects
- Consumers, Inhalation, Chronic exposure, 1 mg/m³, Systemic effects
- Consumers, Oral, Chronic exposure, 0.8 mg/kg, Systemic effects
- Consumers, Inhalation, Chronic exposure, 0.17 mg/m³, Local effects

Exposure Limits

No Data Available

Biological Limits

No information available on biological limit values for this product.

Engineering Measures

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits are not exceeded.

Personal Protection Equipment

RESPIRATOR: Respirator with a particle filter. Recommended filter type P3 (AS1715/1716).
 EYES: Goggles (AS1336/1337).
 HANDS: Wear suitable PVC or natural rubber gloves (AS2161).
 CLOTHING: Dust impervious protective suit, PVC, Safety footwear (AS3765/2210).

Work Hygienic Practices

When using do not eat, drink or smoke. Wash hands before breaks and at the end of the work day. Handle in accordance with good industrial hygiene and safety practices. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Hygroscopic, Powder, Pellets
Odour	Odourless
Colour	White
pH	7 - 8 saturated aqueous solution
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	1100 °C
Freezing Point	No Data Available
Solubility	3.4mg/L 20°C
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	From 300-700kg/m ³ (powder)
Corrosion Rate	No Data Available
Decomposition Temperature	ca.667 °C
Density	3.79
Specific Heat	No Data Available
Molecular Weight	147.6g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available

Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Granulometry: 0.74 - 10 um (powder) d 50, nanoparticles 80% >0.15-0.85mm (pellets)
Potential for Dust Explosion	Not explosive.
Fast or Intensely Burning Characteristics	Not flammable.
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

General Information	Contact with acids liberates CO ₂ , sometimes violently.
Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	none
Materials to Avoid	Acids. Contact with acids liberates carbon dioxide (CO ₂), sometimes violently, Strong oxidizing agents.
Hazardous Decomposition Products	Strontium oxide, Barium oxide
Hazardous Polymerisation	No Data Available

11. TOXICOLOGICAL INFORMATION

General Information	<p>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.</p> <p>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</p> <p>Skin corrosion/irritation : strontium carbonate By analogy No skin irritation Test substance: Strontium nitrate in vitro assay</p> <p>Serious eye damage/eye irritation : strontium carbonate : Rabbit No eye irritation Method: OECD Test Guideline 405</p> <p>Respiratory or skin sensitisation : strontium carbonate : By analogy</p>
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Maximisation Test - Guinea pig
Does not cause skin sensitisation.
Method: OECD Test Guideline 406
Test substance: Strontium Chloride Hexahydrate

In vitro tests did not show mutagenic effects.
Animal testing did not show any carcinogenic effects.

Toxicity to reproduction/Fertility : strontium carbonate :
By analogy
Rat , male and female
Oral
NOAEL parent: 287.5 mg/kg

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

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

STOT - repeated exposure : strontium carbonate
Oral 90-day - Rat , male and female
NOAEL: 21 mg/kg
Test substance: Strontium Chloride Hexahydrate

Contact with eyes may cause irritation.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Harmful by inhalation. May cause nose, throat and lung irritation. Repeated or prolonged exposure: Risk of pulmonary overload (respirable particulates). Possible risk of irreversible effects through inhalation.

Prolonged skin contact may cause skin irritation.

No Data Available

Eyelrritant

Ingestion

Inhalation

SkinIrritant

Carcinogen Category

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic toxicity is unlikely due to low solubility.
Fishes, Cyprinus sp., LC50, 96h, >97.45mg/L (Strontium nitrate)
Crustaceans, Daphnia magna, LC50 48h, 125mg/L (Strontium chloride)
Crustaceans, Daphnia magna, NOEC, 21 days, 21mg/L (Strontium chloride)
Pseudokirchneriella subcapitata, EC50, growth rate, 72h, 104.5mg/L (Strontium nitrate)
Pseudokirchneriella subcapitata, NOEC, 72h, 43.3mg/L (Strontium nitrate)
Not harmful to aquatic life (LC/EC50 > 100 mg/L)
No adverse chronic effect observed up to and including the threshold of 1 mg/L.

Persistence/Degradability

The methods for determining biodegradability are not applicable to inorganic substances.

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

Mobility

Water / Soil: low solubility and mobility.

Environmental Fate

No Data Available

Bioaccumulation Potential

Bioconcentration: Terrestrial plants, various species, Result: potential accumulation of the cation.

Environmental Impact

No Data Available

13. DISPOSAL CONSIDERATIONS

General Information

Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.

Special Precautions for Land Fill

Contact a specialist disposal company or the local waste regulator for advice. Where possible recycling is preferred to disposal or incineration. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	STRONTIUM CARBONATE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Land Transport (Malaysia)

ADR

Proper Shipping Name	STRONTIUM CARBONATE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	STRONTIUM CARBONATE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	STRONTIUM CARBONATE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	STRONTIUM CARBONATE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No

Air Transport

IATA DGR

Proper Shipping Name	STRONTIUM CARBONATE
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002718
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National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Listed

Korea (KECI)	Listed
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Listed

16. OTHER INFORMATION

Related Product Codes	STCARB1000, STCARB1001, STCARB1002, STCARB1003, STCARB1004, STCARB1005, STCARB1006, STCARB1007, STCARB1008, STCARB1009, STCARB1010, STCARB1011, STCARB1012, STCARB1013, STCARB1014, STCARB1015, STCARB1016, STCARB1017, STCARB1018, STCARB1019, STCARB1020, STCARB1021, STCARB1022, STCARB1023, STCARB1024, STCARB1025, STCARB1026, STCARB1027, STCARB1028, STCARB1029, STCARB1030, STCARB1031, STCARB1032, STCARB1033, STCARB1034, STCARB1100, STCARB1200, STCARB1300, STCARB1400, STCARB1500, STCARB1600, STCARB1900, STCARB2000, STCARB2001, STCARB2100, STCARB2200, STCARB2300, STCARB2400, STCARB2500, STCARB2600, STCARB2700, STCARB2800, STCARB2900, STCARB3000, STCARB3100, STCARB3101, STCARB3102, STCARB3150, STCARB3200, STCARB3300, STCARB3400, STCARB3500, STCARB4000, STCARB5000, STCARB5200, STCARB5201, STCARB5500, STCARB5700, STCARB6000, STCARB6001, STCARB7000, STCARB7001, STCARB8000, STCARB9000, STCARB9001, STCARB9300, STCARB9400, STCARB9500, STCARB9600, STCARB9700
Revision	4
Revision Date	13 May 2016
Reason for Issue	SDS updated
Key/Legend	<p>< Less Than > Greater Than AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Fahrenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours</p>

mg/kg Milligrams per Kilogram
mg/m³ Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH₂O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Health and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tn Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight