SAFETY DATA SHEET

5134 STRONTIUM CARBONATE

1. Identification of substance/preparation and of the company undertaking

Trade name:	Strontium Carbonate
Chemical Name:	$CH_2O_3.Sr$
Synonyms:	Strontionit

Relevant identified uses:
Substance used as such, in formulation or in formulation of products such as: Glass industry, Pyrotechnics, Ceramics, Electronic industry, Chemical industry.

Uses advised against:
None

2. Composition /information on ingredients

Component	CAS	EC No.	Weight %	Classification (1272/2008/EC)	REACH Reg. No.
Strontium Carbonate	1633-05-2	216-648-7	>98%	Not classified	01-2119502545-46-XXXX
Barium Carbonate	513-77-9	208-167-3	<2.0	Acute Tox. 4-H302	

3. Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]	Not classified Aquatic Chronic 1, H410
Adverse physiochemical, human health and environmental effects	No additional information available.
Labelling according to Regulation (EC) No. 1272/2008 (CLP)	None. No pictogram required.
Other hazards:	This substance/mixture does not meet the PBT criteria of REACH, annex XIII.

4. First Aid Measures

Inhalation	Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort continues.

	DO NOT INDUCE VOMITING.
Eyes	Make sure to remove any contact lenses from the eyes before rinsing. Rinse eye with water immediately for at least 15 minutes. Get medical attention if any discomfort continues.
Skin	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs get medical attention/advice. Remove clothing and wash thoroughly before use.

Most important symptoms and effects, both acute and delayed:

Eye contact:	Irritation of eyes and mucous membranes.
Inhalation:	Irritation of nose, throat and airway. Harmful: possible risk of irreversible effects through inhalation.
Skin contact:	Prolonged contact may cause redness, irritation and dry skin.
Ingestion:	May cause discomfort if swallowed. Nausea, diarrhoea.

Indication of any immediate medical attention and special treatment needed:

Notes to physician:	Treat symptomatically.

5. Fire Fighting Hazards

Extinguishing media	Water, dry powder, carbon dioxide, foam.
Fire Hazard	Non-combustible.
Explosion Hazard	No explosive properties known.
Reactivity	No information available.
Hazardous combustion products	When heated an in case of fire, irritating vapours/gases may be formed.
Protection during firefighting	Use of approved supplied air or self-contained breathing apparatus operated in positive pressure mode are satisfactory. Totally impervious protective suits, gloves and boots must be worn.

6. Accidental Release Measure

General measures	Keep public away from danger area.
For non-emergency personnel	Avoid inhalation of dust. Provide adequate ventilation. Avoid handling which leads to dust formation.
For emergency responders	No additional information available.
Environmental precautions	Prevent entry to sewers and soil. Notify authorities if product enters sewers or public waters.
Methods and material for containment and cleaning up	Sweep or shovel spills into appropriate container for disposal. Avoid dust production. Do not flush with water or aqueous cleaning agents.

7. Handling & Storage

Handling	Do not breathe dust. Wash hands plentifully and other exposed areas with water after handling. Remove contaminated clothing

	and shoes. Wash clothing before re-using.
Packaging	Even those that have been emptied, will retain product residue. Always obey safety warnings and handle empty packaging as if they were full. Avoid contact with this substance.
Hygiene measures	When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Remove contaminated clothing and shoes.
Storage conditions	Store in a dry, cool, well-ventilated area.

8. Exposure Control/Personal Protection

Name	STD	TWA (Total Dust)	TWA (Resp. dust)
Strontium Carbonate (Not listed *)	WEL	10 mg/m^3	4 mg/m^3
Barium Carbonate (as Ba)	WEL	0.5 mg/m^3	N/A

WEL: Workplace exposure limit (*Treat as nuisance dust)

Strontium Carbonate – DNEL's

End Use	Route/Exposure	Time	Potential health effects	Value
Industry	Dermal	Long term	Systemic Effects	27.9mg/kg/day
Industry	Inhalation	Long term	Systemic Effects	3.5mg/m^3
Industry	Inhalation	Long term	Local Effect	0.84mg/m^3
Consumer	Inhalation	Long term	Systemic Effects	1mg/m^3
Consumer	Oral	Long term	Systemic Effects	0.8mg/kg/day
Consumer	Inhalation	Long term	Local Effect	0.17mg/m^3

PNEC's

End Use	Value
Freshwater	2.06mg/l
Sediment (freshwater)	1.781mg/kg
Soil	323.6mg/kg
STP	4.2mg/l

The units are expressed in mg of: Strontium

Barium Carbonate – DNEL's

End Use	Route/Exposure	Time	Potential health effects	Value
Industry	Inhalation	Long term	Local effects	0.72mg/m^3
Consumer	Inhalation	Long term	Local effects	0.14 mg/m^3

PNEC's

End Use	Value
Freshwater	227.8 Ba/L (327.3)*
STP	50.1 mg/Ba/L (72)*
Sediment (freshwater)	792.7 mg/Ba/kg dw (1138)*
Soil	207.7 mg/Ba/kg dw (298.4)*

*{mgBaCo3/L}. PNEC values are derived using the information provided in Section 12.

Appropriate engineering controls	Use as far as possible in a closed system. Provide a regular control of the atmosphere. Emergency eye wash foundations and safety showers should be available in the immediate vicinity of any potential exposure. Local exhaust and general ventilation must be adequate to meet exposure standards. Please refer to the annex (exposure scenarios).

Individual protection measures, such as personal protective equipment:

Eye/face protection:	Wear safety glasses with side shields according EN 166.
Hand protection:	Use gloves resistant to chemical products corresponding to EN 373:3. Take advice to gloves' manufacturer.
Skin and body protection:	Wear closed protective clothing.
Respiratory protection:	Use respiratory protection mask according to EN 140 or EN 405 with filter type P3 according to EN 143:2000 or FFP3 according to EN 149:2001.

9. Physical & Chemical Properties

Physical state	Solid powder, granule, pellet
Colour	White/ off white
Odour	Odourless
Odour threshold	No data available
pH	7 to 8 (at 20°C)
Relative evaporation rate	No data available
Melting point (°C)	No data available
Freezing point	No data available
Boiling point	1700°C
Flash point	No data available
Self-ignition temperature	No data available
Decomposition temperature	ca. 667°C
Flammability (solid, gas)	Not flammable
Percent volatility	No data available
Relative vapour density at 20°C	No data available
Relative density	3.79
Bulk Density	300-700kg/m^3
Solubility in water	Slightly soluble
Solubility value (g/100g H^2O@20°C)	0.34
Log Kow	Not applicable

Viscosity, kinematic	Not applicable
Viscosity, dynamic	Not applicable
Explosive properties	Not applicable
Oxidising properties	Not applicable
Exposure limits	Not explosive
Other information	Mol. Weight: 147.63

10. Stability & Reactivity

Reactivity	Violent reaction with strong acids
Chemical stability	Stable under normal conditions, temperatures and pressures. The substance is hygroscopic and will absorb water by contact with the moisture in the air.
Possibility of hazardous reactions	Contact with acid liberates in CO_2. Violent reaction with acids.
Conditions to avoid	Avoid excessive heat for prolonged periods.
Incompatible materials	Strong acids.
Hazardous decomposition products	Carbon dioxide (CO_2) Carbon monoxide (CO), Oxides of Strontium, Barium.

11. Toxicological Information

Toxicology information	Based on available data the classification criteria are not met – According to Regulation (EC) No. 1907/2006 (REACH).
Acute toxicology	LD50 Oral Rat: >2000mg/kg. Strontium Nitrate. Read across approach. LD50 Dermal: Scientifically unjustified. LC50 Inhalation Mouse (4 hours): >4.5mg/l (dust/mist). Strontium Nitrate. Read across approach.
Skin Corrosion/ Irritation	Data lacking.
Serious eye damage/ Irritation	Data lacking.
Respiratory or skin sensitisation:	Skin sensitisation: Guinea pig maximization test (GPMT) Strontium Chloride. Read across approach – non sensitising.
Germ cell mutagenicity	Genotoxicity – In vitro: Chromosome aberration Strontium Nitrate. Read across approach – Negative. Genotoxicity – In vitro: Data lacking.
Carcinogenicity	No evidence of carcinogenicity in animal studies.

12. Ecological Information

Toxicity	The product has poor water-solubility. Based on available data the classification criteria are not met. LC50 96 hours>97.45 mg/l Cyprinus carpio (Common carp). Read across approach: Strontium Nitrate.
Acute Toxicity – Aquatic Invertebrates	EC50 48 hours 125 mg/l Daphnia magna. Read across approach: Strontium Chloride.
Degradability	In water and soil: Slow ionization and precipitation of the

	cation, Sr (+). In the presence of sulphates and carbonates.
Biodegradation	Not applicable – Inorganic chemical.
Bioaccumulative potential	Potential accumulation of the strontium cation in terrestrial plants.
Partition coefficient	Not applicable – Inorganic chemical.
Mobility in soil	Slightly soluble in water.
Adsorption / Desorption Coefficient	Soil – Considerable adsorption.
Results of PBT and vPvB assessment	This substance/mixture does not me the PBT or vPvB criteria of REACH, annex XIII.
Other adverse effects	Do not allow large quantities of this material to reach ground water, water course or sewerage system.

13. Disposal Considerations

Waste treatment methods	Dispose of this material and residues in accordance with local authority requirements.
Additional information	Empty packaging can have residues or dusts and are subject to proper waste disposal, as above.
Ecology – waste materials	See the European waste catalogue.

14. Transport Information

UN/SI No	The product is not covered by international regulation on transport of dangerous goods (IMDG, IATA, ADR/RID).
UN proper shipping name	Not classified for transportation.
Transport hazard classes	Not classified for transportation.
Packing group	Not classified for transportation.
Environmental hazards	Other information: No environment hazards known for this product.
Special precautions for user	Not classified for transportation.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available

15. Regulatory Information

Approved code of practice	Classification and labelling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
Guidance notes	Workplace Exposure Limits EH40.
Chemical Safety Assessment	No chemical safety assessment has been carried out.

16. Other Information

Training advice:
None. No R, S or H phrases applicable.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Any chemical product may be handled in safe conditions if its physiochemical and toxicological properties are known, and technical methods and appropriate organising measure are used, as well as adequate personal protective equipment.