

SAFETY DATA SHEET

Section 1: Identification

Product name: Cadmium sulfate
Product use: For laboratory research purposes.
Supplier: Trace Sciences International
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Richmond Hill, ON L4B 3N6
CANADA
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Section 2: Hazard(s) Identification

2.1 GHS Classification

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - repeated exposure (Category 1), Bone, Kidney, Respiratory system, H372
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s):

H301 Toxic if swallowed.
H330 Fatal if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection
P284 Wear respiratory protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Rinse mouth.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P391 Collect spillage.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Section 3: Composition/ Information on Ingredients

Formula : CdSO₄
Molecular Weight : 208.47 g/mol

Material	CAS-No.	EC-No.	Index-No.	Concentration
Cadmium Sulfate	10124-36-4	233-331-6	048-009-00-9	<=100%

Section 4: First-Aid Measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move person out of dangerous area if safe to do so.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water for at least 15 minutes. Use chemical shower if available. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Remove contacts if possible.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: Fire-Fighting Measures

5.1 Conditions of flammability

Not flammable or combustible.

5.2 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.3 Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Sulphur oxides, cadmium/cadmium oxides

5.4 Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.5 Further information

No data available

Section 6: Accidental Release Measures

6.1 Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Section 8: Exposure Controls/Personal Protection

8.1 Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Cadmium	10124-36-4	TWA	0.01 mg/m ³	Canada. British Columbia OEL
		TWA	0.01 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAEV	0.025 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	0.002 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)

Remarks

Suspected Human Carcinogen (means that the human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as A1)

8.2 Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls

Use mechanical exhaust or laboratory fume hood to avoid exposure.

Section 9: Physical and Chemical Properties

Appearance

Form	Powder/Granules
Colour	Colourless

Safety Data

pH	No data available
Melting point/freezing point	1,000 °C (1,832 °F)
Boiling point	No data available
Flash point	Not applicable
Flammability (solid, gas)	No data available
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	No data available
Density	4.69 g/cm ³ at 25 °C (77 °F)
Water solubility	767 g/l at 25 °C (77 °F) - soluble
Partition coefficient: n-octanol/water	No data available
Relative vapour density	No data available
Odour	Odourless
Odour Threshold	No data available
Evaporation rate	No data available

Section 10: Stability and Reactivity

10.1 Chemical stability

Stable under recommended storage conditions

10.2 Possibility of hazardous reactions

No data available

10.3 Conditions to avoid

No data available

10.4 Materials to avoid

Strong oxidizing agents

10.5 Hazardous decomposition products

See section 5

Section 11: Toxicological Information

Acute toxicity

Oral

LD50 Oral - Rat - male - 107 mg/kg

Remarks: (in analogy to similar compounds) (ECHA)

The value is given in analogy to the following substances: Cadmium chloride

Inhalation

LC50 Inhalation - 4 h - 0.051 mg/l

Dermal

No data available

Other information on acute toxicity

LD50 Intraperitoneal - Mouse - 6.9 mg/kg

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation - 15 min

(OECD Test Guideline 439)

Serious eye damage/eye irritation

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation - 4 h

(OECD Test Guideline 431)

Respiratory or skin sensitization

KeratinoSens assay

Result: negative

(OECD Test Guideline 442D)

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

Presumed to have carcinogenic potential for humans Chronic exposure to cadmium may cause lung and prostate cancer.

IARC: 1 - Group 1: Carcinogenic to humans (Cadmium sulphate)

Reproductive toxicity

May damage the unborn child.

May damage fertility.

May cause reproductive disorders.

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Signs and Symptoms of Exposure

Acute inhalation exposure to cadmium fumes may cause "metal fume fever" with flu-like symptoms of weakness, fever, headache, chills, nausea, vomiting, dizziness, sweating, muscular pain, cough and difficulty breathing. Acute pulmonary edema may develop within 24 hours and reaches a maximum by three days. The first chronic effect of exposure to cadmium is generally kidney damage, manifested by excretion of excessive protein in the urine, followed by anemia, teeth discoloration and loss of smell. Cadmium also is believed to cause pulmonary emphysema and bone disease.

Additional Information

RTECS: EV2700000

Section 12: Ecological Information

12.1 Toxicity

Toxicity to fish	Flow-through test LC50 - <i>Carassius auratus</i> (goldfish) - 0.75 mg/l - 96h Remarks: (in analogy to similar products) (ECHA)
Toxicity to daphnia and other aquatic invertebrates	Static test LC50 - <i>Daphnia magna</i> (Water flea) - 0.036 mg/l - 48 h Remarks: (in analogy to similar products) (ECHA)
Toxicity to bacteria	Static test NOEC - activated sludge - 0.2 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to fish (Chronic toxicity)	NOEC (<i>Salvelinus fontinalis</i> (Brook trout)): 0.008 mg/l – 10 d Remarks: (in analogy to similar products) (ECHA)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	<i>Daphnia magna</i> (Water flea) - 0.0003 mg/l - 21 h Remarks: (ECOTOX Database)
Toxicity to microorganisms	NOEC (activated sludge): 0.2 mg/l – 3 h (OECD Test Guideline 209) Remarks: (in analogy to similar products)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 PBT and vPvB assessment

No data available

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Section 13: Disposal Considerations

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

Section 14: Transport Information

IATA

UN number: UN2570 Class: 6.1 Packing group: III
Proper shipping name: Cadmium compounds (Cadmium sulfate)

Section 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

Section 16: Other Information

Further information

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