

SAFETY DATA SHEET

Section 1: Identification

Product name: Zinc (metal powder)
Product use: For laboratory research purposes.
Supplier: Trace Sciences International
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CANADA
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Section 2: Hazard(s) Identification

2.1 GHS Classification

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):

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

Section 3: Composition/ Information on Ingredients

Formula : Zn
Molecular Weight : 65.39 g/mol

Material	CAS-No.	EC-No.	Index-No.	Concentration
Zinc powder	7440-66-6	231-175-3	030-001-00-1	<=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

No data available

5.2 Suitable extinguishing media

Dry powder

5.3 Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Zinc/zinc 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. Remove all sources of ignition. 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. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Ensure adequate ventilation. Do not inhale substance/mixture. Keep workplace dry. Do not allow product to come into contact with water. Keep away from open flames, hot surfaces and sources of ignition.

7.2 Conditions for safe storage

Keep away from heat and sources of ignition.
Never allow product to get in contact with water during 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

No data available

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

Impervious clothing, flame retardant antistatic protective clothing. 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
Colour	Gray

Safety Data

pH	No data available
Melting point/freezing point	420 °C (788 °F)
Boiling point	907 °C (1,665 °F)
Flash point	No data available
Flammability (solid, gas)	May form combustible dust concentrations in air
Ignition temperature	No data available
Auto-ignition temperature	Does not ignite
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	1.33 hPa at 487 °C (909 °F)
Density	7.133 g/mL at 25 °C (77 °F)
Water solubility	0.0001 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	Not applicable for inorganic substances

Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

Section 10: Stability and Reactivity

10.1 Chemical stability

Stable under recommended storage conditions. Sensitive to air.

10.2 Possibility of hazardous reactions

Exothermic reaction with:

Alkali hydroxides, fluorine, carbon disulfide, halogen-halogen compounds, acids, alkalines, chlorine with moisture.

Risk of explosion with:

Ammonium compounds, azides, chlorates, metal catalysts, nitric acid, hydroxylamine, hydrazine and derivatives, halogenated hydrocarbon, hydrogen, nitrates, peroxides, cadmium, chromium(VI) oxide, peroxi compounds, nitro compounds, performic acid, oxidizing agents sulfur, iodine with water.

Risk of ignition or formation of inflammable gases or vapours with:

Arsenic oxides, sodium hydroxide, tellurium, selenium

10.3 Conditions to avoid

Exposure to moisture. Exposure to air.

10.4 Materials to avoid

Strong oxidizing agents, strong acids, strong bases, amines

10.5 Hazardous decomposition products

See section 5

Section 11: Toxicological Information

Acute toxicity

Oral

LD50 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)

Inhalation

LC50 Inhalation - Rat - male and female - 4 h - > 5.41 mg/l
(OECD Test Guideline 403)

Dermal

No data available

Other information on acute toxicity

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 5 d

Remarks: (ECHA)

The value is given in analogy to the following substances: Zinc oxide

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative
(OECD Test Guideline 406)

The value is given in analogy to the following substances: Zinc oxide

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells
Metabolic activation: without metabolic activation
Result: negative
Remarks: (ECHA)

Test Type:

Chromosome aberration test in vitro
Test system: Other cell types
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)

Test Type: Micronucleus test

Species: Mouse
Cell type: Red blood cells (erythrocytes)
Application Route: Intraperitoneal
Result: negative
Remarks: (ECHA)

Carcinogenicity

No data available

Reproductive toxicity

No data available

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

No data available

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

No data available

Aspiration hazard

No data available

Signs and Symptoms of Exposure

No data available

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 31.52 mg/kg - LOAEL (Lowest observed adverse effect level) - 53.8 mg/kg

RTECS: ZG8600000

Section 12: Ecological Information

12.1 Toxicity

Toxicity to fish	Flow-through test LC50 - other fish - 0.439 mg/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Ceriodaphnia dubia (water flea) - 0.155 mg/l – 48 h (US-EPA)
Toxicity to algae	Static test NOEC - Pseudokirchneriella subcapitata - 0.005 mg/l - 3 d (OECD Test Guideline 201)
Toxicity to bacteria	Static test NOEC - activated sludge - 0.1 mg/l - 4 h (ISO 9509)
Toxicity to fish (Chronic toxicity)	Flow-through test NOEC - other fish - 0.169 mg/l - 30 d Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	Semi-static test NOEC - Daphnia magna (Water flea) - 0.100 mg/l - 3 Weeks Remarks: (ECHA)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

12.4 Mobility in soil

No data available

12.5 PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

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

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.

Contaminated packaging

Dispose of as unused product.

Section 14: Transport Information

IATA

UN number: UN1436 Class: 4.3 (4.2) Packing group: II
Proper shipping name: Zinc powder

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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