

SAFETY DATA SHEET

Section 1: Identification

Product name: Nickel(II) oxide
Product use: For laboratory research purposes.
Supplier: Trace Sciences International
40 Vogell Rd Suite 42
Richmond Hill, ON L4B 3N6
CANADA
Telephone: +1 905-770-1100
Fax: +1 905-770-1160
Emergency Phone: CANUTEC +1-613-996-6666

Section 2: Hazard(s) Identification

2.1 GHS Classification

Skin sensitization (Category 1), H317
Carcinogenicity, Inhalation (Category 1A), H350
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Lungs, H372
Long-term (chronic) aquatic hazard (Category 4), H413

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s):

H317 May cause an allergic skin reaction.
H350 May cause cancer.
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
H413 May cause long lasting harmful effects to aquatic life.

Precautionary statement(s):

H317 May cause an allergic skin reaction.
H350 May cause cancer by inhalation.
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
H413 May cause long lasting harmful effects to aquatic life.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Section 3: Composition/ Information on Ingredients

Formula : NiO
Molecular Weight : 74.69 g/mol

Material	CAS-No.	EC-No.	Index-No.	Concentration
Nickel(II) oxide	1313-99-1	215-215-7	028-003-00-2	<=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; Nickel/nickel 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
Nickel monoxide	1313-99-1	TWA	0.2 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAEV	0.2 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	0.05 mg/m ³	Canada. British Columbia OEL
		TWA	0.2 mg/m ³	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

Remarks

Confirmed Human Carcinogen (means that the agent is carcinogenic to humans)

IARC '1' applies to substances categorized as carcinogenic to humans, and used when there is sufficient evidence of carcinogenicity in humans.

ACGIH 'A1' applies to those substances confirmed as human carcinogens based on the weight of evidence from epidemiological studies.

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	Brown/dark grey

Safety Data

pH	No data available
Melting point/freezing point	1,955 °C (3,551 °F)
Boiling point	No data available
Flash point	Not applicable
Flammability (solid, gas)	No data available
Ignition temperature	No data available
Auto-ignition temperature	> 400 °C (> 752 °F)
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	No data available
Density	6.67 g/mL at 25 °C (77 °F)
Water solubility	0.002 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	No data available
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

10.2 Possibility of hazardous reactions

No data available

10.3 Conditions to avoid

No data available

10.4 Materials to avoid

Strong acids

10.5 Hazardous decomposition products

See section 5

Section 11: Toxicological Information

Acute toxicity

Oral

LD50 Oral - Rat - male and female - > 5,000 mg/kg
(OECD Test Guideline 401)

Inhalation

LC50 Inhalation - Rat - male and female - 4 h - > 5.08 mg/l - aerosol
(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 - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization

May cause allergic skin reaction.

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Carcinogenicity

Positive evidence from human epidemiological studies (inhalation)

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)

Inhalation - Causes damage to organs through prolonged or repeated exposure - Lungs

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Aspiration hazard

No data available

Signs and Symptoms of Exposure

Stomach - Irregularities - Based on Human Evidence

Additional Information

RTECS: QR8400000

Section 12: Ecological Information

12.1 Toxicity

Toxicity to fish	Semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 15.3 mg/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	Static test LC50 - Ceriodaphnia dubia (water flea) - 0.027 mg/l - 48h Remarks: (ECHA)
Toxicity to algae	Static test ErC50 - Pseudokirchneriella subcapitata - 0.081 - 0.148 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	EC50 - activated sludge - 33 mg/l - 30 min (ISO 8192)
Toxicity to fish (Chronic toxicity)	Flow-through test NOEC - Cyprinodon variegatus (sheepshead minnow) - 21.7 mg/l - 28 d Remarks: (ECHA)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Bioaccumulation: Fucus vesiculosus - 21 d - 0.00001 mg/l (Nickel oxide)
Bioconcentration factor (BCF): 675
(Tested according to Annex V of Directive 67/548/EEC.)

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.

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

Not dangerous good

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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