

Material Safety Data Sheet Nickel Oxide

Section 1 - Product Identification

Synonym	: bunsenite; green nickel oxide; nickelous oxide; nickel protoxide; nickel (II) oxide
Chemical Formula	: NiO
Company Identification	: Tradeasia International Pte. Limited
Address	: 133 Cecil Street # 12-03 Keck Seng Tower, Singapore Tel: +65-6227 6365 Fax: +65-6225 6286 Email: contact@chemtradeasia.com
Recommended use	: Used in the refining of nickel; for painting; for the manufacture of nickel salts and in specialty ceramics.

Section 2 – Hazards Identification

2.1. Classification

Skin Sensitizer: Category 1,
Chronic Aquatic: Hazard Category 4,
Specific target organ toxicity - repeated exposure: Category 1,
Carcinogenicity: Category 1A

2.2. Label elements

Symbols/Pictograms



Signal Word

Danger

Hazard Statements

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

Precautionary Statements

Prevention

P201: Obtain special instructions before use.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P272: Contaminated work clothing should not be allowed out of the workplace.

Response

P308+P313: IF exposed or concerned: Get medical advice/attention.
P363: Wash contaminated clothing before reuse.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P314: Get medical advice/attention if you feel unwell.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

Storage

P405: Store locked up.

Disposal

P501: Dispose of contents/container in accordance with local regulations.

2.3. Other hazards

Not applicable

Section 3 – Composition/Information on Ingredients

3.1 Composition comments

Chemical Name	EC No/CAS No	Purity, %
Nickel Oxide	1313-99-1	min. 95

Section 4 – First-Aid Measures

4.1. Description of first aid measures

Eyes

Wash out immediately for 15 minutes.
Wash under the bottom and top eyelid.
Seek medical attention without delay; if pain persists or recurs seek medical attention.
Only skilled personnel should remove the contact lenses.

Skin

Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water and soap for 15 minutes.
Seek medical attention in the event of irritation.

Ingestion

If swallowed do NOT induce vomiting.
If vomiting occurs, lean the patient forward to prevent vomit swallowing and choking.
Observe the patient.
Never give liquid to an unconscious person.
Give water to rinse out the mouth, then provide liquid slowly and as much as casualty can comfortably drink.
Seek medical advice.

Inhalation

If fumes or combustion products are inhaled, remove the patient from the contaminated area.
Lay patient down. Keep warm and rested.
Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Seek medical attention

4.2. Most important symptoms and effects, both acute and delayed

In cases of nickel poisoning, dimercaprol delivered by deep intramuscular injection may be a suitable antidote. Irritant contact dermatoses or eczemas may respond to applications of weak antiseptic packs, antibiotic ointments (tetracycline or erythromycin) or inert pastes and ointments. Systemic antibiotics are advisable in the presence of lymphangitis or lymphadenitis.

4.3. Indication of any immediate medical attention and special treatment needed

Preplacement and periodic medical examinations of workers exposed to nickel are recommended.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media

Use extinguishing media suitable for the surrounding area.

5.2. Specific hazards arising from the chemical

None known.

5.3. Special protective actions for fire-fighters

Alert Fire Brigade and tell them location and nature of hazard.

Wear personal breathing apparatus and protective gloves in the event of a fire.

Prevent, by any means available, spillage from entering drains or water courses.

Use fire fighting procedures suitable for the surrounding area.

Cool fire exposed containers with water spray.

If safe to do so, remove containers from the path of fire.

Equipment should be thoroughly decontaminated after use.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor spills:

Clean up all spills immediately.

No smoking, uncovered lights, ignition sources.

Avoid all contact with any organic matter as it may result in auto-ignition.

Avoid breathing dust or vapours and all contact with skin and eyes.

Use protective equipment to restrict the contact with the substance.

Contain and absorb spill with dry sand, earth, inert material or vermiculite.

DO NOT use sawdust as fire may result.

Scoop up solid residues and seal in labelled drums for disposal.

Major spills:

CAUTION: Remove personnel from the spill area.

Alert Emergency Services and tell them location and nature of hazard.

Control personal contact by wearing protective clothing.

Prevent, by any means available, spillage from entering drains or water courses.

Recover product wherever possible.

IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place them in sealed plastic bags or other containers for disposal.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling

Avoid personal contact and inhalation of dust, mist or vapours.
Provide adequate ventilation.
Always wear protective equipment and wash off any spillage from clothing.
Keep material away from light, heat, flammables or combustibles.
Keep cool, dry and away from incompatible materials.
Avoid physical damage to containers.

7.2. Conditions for safe storage, including any incompatibilities

Store in original containers.
Keep containers sealed.
Store in a cool, dry area.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
Observe manufacturer's storage and handling recommendations contained within this SDS.
WARNING: Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls

Use proper ventilation to prevent overexposure to the substance.

8.2. Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side shields.
Chemical goggles.
Remove contact lenses if possible.

Skin protection

Use gloves on dry, clean hands. Remove gloves while avoiding contact with the substance. Do not touch contaminated surface.

Body Protection

Overalls.
P.V.C. apron.

Respiratory protection

Use an appropriate respirator according to exposure. Use a certified respirator. Use approved positive flow masks if significant quantities of dust become airborne.
Try to avoid creating dust conditions.

Control of environmental exposure

Barrier cream.
Skin cleansing cream.
Eye wash unit.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid

Appearance: Green-black

Odor: Odorless

pH: Not applicable

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Evaporation Rate: Not applicable

Viscosity: Not applicable

Boiling Point: Not available

Freezing/Melting Point: 1984°C

Decomposition Temperature: Not available

Solubility: Insoluble in water. Soluble in acids and ammonium hydroxide.

Relative density: 7.45

Section 10 – Stability and Reactivity

10.1. Reactivity

Stable under normal temperatures and pressures.

10.2. Chemical stability

Unstable in the presence of incompatible materials.

Product is considered stable.

Hazardous polymerisation will not occur.

10.3. Possibility of hazardous reactions

See section 7

10.4. Conditions to avoid:

See section 7

10.5. Incompatible materials

See section 7

10.6. Hazardous decomposition products

See section 5

Section 11 – Toxicological Information

11.1 Health effects associated with ingredients

Acute toxicity

Oral (rat) LD50: =5000 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

Classified

Germ cell mutagenicity

No data available

Carcinogenicity

Classified

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Classified

Aspiration hazard

No data available

Section 12 – Ecological Information

12.1. Ecotoxicity

LC50 96h: Fish: 0.003-0.9mg/L

EC50 48h: Crustacea: 0.001-0.576mg/L

EC50 72h: Algae or other aquatic plants: 0.001-0.43mg/L

NOEC 240h: Crustacea: >0.001-0.715mg/L

DO NOT discharge into sewer or waterways.

12.2. Bioaccumulative potential

No data available.

12.3. Mobility in soil

No data available.

12.4. Persistence and Degradability

No data available.

Section 13 – Disposal Considerations

13.1. Disposal methods

Return the containers to the supplier for reuse/ recycling if possible.

DO NOT allow wash water from cleaning or process equipment to enter drains.

It may be necessary to collect all wash water for treatment before disposal.

Where in doubt contact the responsible authority. Recycle wherever possible or consult the manufacturer for recycling options. Bury residue in an authorised landfill. Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 – Transport Information

14.1. TGD

Not regulated

14.2. IMDG

Not regulated

14.3. IATA

Not regulated

14.4. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.5. Marine Pollutant

No

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC

Nickel Oxide is listed on the following lists of national inventories:

Taiwan - TCSI
Mexico - INSQ
Vietnam - NCI
Russia - ARIPS
Thailand - TECI
Australia - AICS
Canada - DSL
China - IECSC
Europe - EINEC / ELINCS / NLP
Japan - ENCS
Korea - KECI
New Zealand - NZIoC
Philippines - PICCS
USA - TSCA

Nickel Oxide is not listed on the following list of national inventories:

Canada - NDSL

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS

SDS : Safety Data Sheets

Index N° : atomic number of the element most characteristic of the properties of the substance

CAS No : Chemical Abstracts Service number

EC No : EINECS Number : European Inventory of Existing Commercial Substances

Repr. Cat. 2 : Substance presumed human reproductive toxicant

Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.

GHS : Globally Harmonised System of Classification and Labelling

LD₅₀ : Median Lethal Dose

LC₅₀ : Lethal Concentration, 50%

N.A. : Not Applicable

OSHA : Occupational Safety & Health Administration

Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)

PEL : Permissible Exposure Limits

ACGIH : American Conference of Governmental Industrial Hygienists

TLV : Threshold Limit Value

Japanese MITI : Japanese Ministry of International Trade and Industry

EC₅₀ : Half maximal effective concentration

UN : United Nations

U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the authority of the Environmental Protection Agency

Canadian DSL: Canadian Domestic Substances List

16.2. List of relevant hazard statements and precautionary statements used in this MSDS

Hazard Statement

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16.3. Disclaimer of Liability

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