

Safety Data Sheet **NICKEL CHLORIDE Hexahydrate**

SDS no. TR3ASMM2 • Date of issue: 2024-06-19

SECTION 1: Identification

GHS Product identifier

Product name NICKEL CHLORIDE Hexahydrate

Other means of identification

Name	Product Code
NICKEL CHLORIDE Hexahydrate LR	NL008
NICKEL CHLORIDE Hexahydrate AR	NA008
Nickelous chloride	
Nickel dichloride	
Nickel dichloride hexahydrate	
Nickel (II) chloride hexahydrate	

Recommended use of the chemical and restrictions on use

Electroplated nickel coatings, batteries, magnets; manufacture of sympathetic ink, stainless steel, metal alloys such as metal coins, jewellery and other metal items; catalyst and laboratory reagent.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, inhalation, Cat. 3
- Acute toxicity, oral, Cat. 3
- Carcinogenicity, Cat. 1A
- Germ cell mutagenicity, Cat. 2
- Respiratory sensitizer, Cat. 1
- Skin corrosion/irritation, Cat. 2

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- Skin sensitizer, Cat. 1
- Specific target organ toxicity following repeated exposure, Cat. 1
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H301	Toxic if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H331	Toxic if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P271	Use only outdoors or in a well-ventilated area.
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.
P284	[In case of inadequate ventilation] wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER/doctor/physician
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician
P362+P364	Take off contaminated clothing and wash it before reuse.
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 facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 237.71

Components

Component	CAS no.	Concentration
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Nickel(II) chloride Hexahydrate	7791-20-0	100 % (weight)
CLASSIFICATIONS: Acute toxicity, inhalation, Cat. 3; Acute toxicity, oral, Cat. 3; Carcinogenicity, Cat. 1A; Germ cell mutagenicity, Cat. 2; Hazardous to the aquatic environment, long-term (chronic), Cat. 1; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Respiratory sensitizer, Cat. 1; Skin corrosion/irritation, Cat. 2; Skin sensitizer, Cat. 1A; Specific target organ toxicity following repeated exposure, Cat. 1; Toxic to reproduction, Cat. 1. HAZARDS: H301 - Toxic if swallowed; H315 - Causes skin irritation; H317 - May cause an allergic skin reaction; H331 - Toxic if inhaled; H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled; H341 - Suspected of causing genetic defects [route]; H350 - May cause cancer [route]; H360 - May damage fertility or the unborn child [effect, route]; H372 - Causes damage to organs [organs] through prolonged or repeated exposure [route]; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor (at once). First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
In case of skin contact	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. In severe cases or if irritation persists, seek medical attention.
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. If symptoms persist seek medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use extinguishing media most appropriate for the surrounding fire. No limitations to the type of extinguishing media.

Specific hazards arising from the chemical

Hazards from Combustion Products: Emits toxic fumes under fire conditions (hydrogen chloride gas and nickel oxides).

Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Runoff may pollute waterways.

Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Fully encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

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Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

Seek expert advice on handling and disposal.

Prevent further leakage or spillage and prevent from entering drains

SECTION 7: Handling and storage

Precautions for safe handling

Avoid generation or accumulation of dusts. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Wash hands and face thoroughly after working with material.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place. Keep containers securely sealed and protected against physical damage.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

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

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state

Solid

Appearance

Yellow to Green crystals or powder.

Color

No data available.

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Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	140 °C (release of crystalline water)
Oxidizing properties	No data available.
pH	~ 4.9 (100 g/L, H ₂ O, 20 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble in water, 2.54kg/L at 20°C. Solubility in Organic Solvents: Soluble in alcohol and ammonium hydroxide.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	1.3 hPa (671 °C) (anhydrous substance)
Evaporation rate	No data available.
Density and/or relative density	No data available.
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

No data available.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

If containers are opened, substance will absorb moisture from the air and go into solution.

Possibility of hazardous reactions

Violent reaction with potassium.

Hazardous Polymerization: Will not occur.

Conditions to avoid

Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials

Strong oxidizing agents, peroxides, alkali metals, acids.

Hazardous decomposition products

Hydrogen chloride gas, nickel/nickel oxides.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion: Harmful if swallowed. Irritation of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. Nickel salts act as emetics (induce nausea and vomiting) when swallowed. Symptoms include abdominal pain, nausea, vomiting, diarrhea, metallic taste. Ingestion of large doses of the substance may cause giddiness, capillary damage, myocardial weakness, central nervous system depression, intestinal disorders, convulsions and asphyxia and may lead to liver and kidney damage.

Inhalation: Toxic by inhalation. Causes irritation to the respiratory tract including nose and throat. May cause irritation of the soft mucous tissues, resulting in sneezing, coughing, sore throat, metallic taste in mouth, nausea, vomiting, abdominal pain, dizziness and dyspnoea. The possibility of allergic reactions in certain sensitive individuals may cause sensitisation. Lung damage may result from a single high exposure or lower repeated exposures. Lung allergy occasionally occurs with asthma type symptoms.

Skin corrosion/irritation

May be harmful if absorbed through the skin. Causes skin irritation and may cause 'nickel itch', a form of dermatitis resulting from sensitization to nickel. This sensitization causes burning and itching sensations in the hands, abnormal redness of the skin and nodular eruption on the web of fingers, wrists and forearms. These skin eruptions may lead to ulcers or eczema.

Serious eye damage/irritation

Substance is irritating to the eyes, causing irritation, redness and pain.

Respiratory or skin sensitization

Respiratory sensitisation: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Sensitisation: H317 May cause an allergic skin reaction.

Germ cell mutagenicity

H341 Suspected of causing genetic defects.

Carcinogenicity

Nickel chloride hexahydrate is evaluated in the IARC Monographs as Group 1: Carcinogenic to humans. May cause cancer by inhalation.

Reproductive toxicity

H361 Suspected of damaging fertility or the unborn child.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

H372 Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Inhalation of nickel dust at high levels may lead to asthma, pneumonitis, chronic bronchitis, reduced lung function leading to lung cancer, as well as nasal effects including rhinitis, nasal sinusitis, nasal mucosal injury and sinus cancer. Prolonged or repeated swallowing of the nickel compounds may lead to liver and kidney damage, CNS depression, intestinal disorders, capillary damage, and weight loss. Prolonged or repeated skin contact may cause sensitization dermatitis known as 'nickel itch'.

Nickel(II) chloride Hexahydrate: From NIH:

dog LD50 intravenous 40mg/kg (40 mg/kg) Environmental Quality and Safety, Supplement. Vol. 1, Pg. 1, 1975.

mouse LD50 intraperitoneal 48mg/kg (48 mg/kg) Naunyn-Schmiedeberg's Archiv fuer Experimentelle Pathologie und Pharmakologie. Vol. 244, Pg. 17, 1962.

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rat LD50 oral 105mg/kg (105 mg/kg) SENSE ORGANS AND SPECIAL SENSES: OTHER CHANGES: OLFACTION

BEHAVIORAL: SOMNOLENCE (GENERAL DEPRESSED ACTIVITY)

GASTROINTESTINAL: "HYPERMOTILITY, DIARRHEA" Russian Pharmacology and Toxicology Vol. 32, Pg. 102, 1969

SECTION 12: Ecological information

Toxicity

Nickel compounds can have a high acute and chronic toxicity to aquatic life. Nickel toxicity to aquatic organisms is determined by water hardness; the softer the water, the higher the toxicity.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 3288

Class: 6.1

Packing Group: III

Proper Shipping Name: TOXIC SOLID, INORGANIC, N.O.S. (Contains Nickel Chloride Hexahydrate)

Environmentally Hazardous

Hazchem emergency action code (EAC)

2X

IMDG

UN Number: 3288

Class: 6.1

Packing Group: III

Proper Shipping Name: TOXIC SOLID, INORGANIC, N.O.S. (Contains Nickel Chloride Hexahydrate)

IATA

UN Number: 3288

Class: 6.1

Packing Group: III

Proper Shipping Name: TOXIC SOLID, INORGANIC, N.O.S. (Contains Nickel Chloride Hexahydrate)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)