



Safety Data Sheet

Nickel(II) chloride hexahydrate

Section 1: Chemical Product and Company Identification

Product Name: Nickel(II) chloride hexahydrate

Catalog Codes:549

CAS#: 7791-20-0

RTECS: QR6480000

Synonym: Nickel Chloride Hexahydrate

Chemical Name: Nickel (II) chloride, hexahydrate

Chemical Formula: NiCl₂.6H₂O

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Nickel(II) chloride hexahydrate	7791-20-0	100

Toxicological Data on Ingredients: Nickel chloride: ORAL (LD50): Acute: 105 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: IARC Cancer Review: Animal Limited Evidence; Not assigned an overall evaluation by IARC. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance may be toxic to blood, kidneys, liver, mucous membranes, upper respiratory tract, skin. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:

Non combustible. Nickel chloride itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. When heated to decomposition it emits highly toxic fumes of hydrogen chloride.

Special Remarks on Explosion Hazards:

Containers may explode when heated. A mixture of potassium and nickel chloride produces an explosion on impact

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:

Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the SDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 0.1 (mg(Ni)/m) [United Kingdom (UK)] TWA: 1 (mg(Ni)/m) from OSHA (PEL) [United States] TWA: 0.1 (mg(Ni)/m) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent crystals solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 237.71 g/mole

Color: Green.

pH (1% soln/water): 4.9 (20 °C)

Boiling Point: Not available.

Melting Point: 1001 °C (anhydrous substance)

Critical Temperature: Not available.

Specific Gravity: 1.92 g/cm³ (anhydrous substance)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:

Soluble in cold water. Soluble in about 1 part water. Soluble in alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Dust generation, Incompatible materials

Incompatibility with various substances: Reactive with acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Incompatible with peroxides, potassium

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 105 mg/kg [Rat].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: IARC Cancer Review: Animal Limited Evidence; Not assigned an overall evaluation by IARC.

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. May cause damage to the following organs: blood, kidneys, liver, mucous membranes, upper respiratory tract, skin.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May cause cancer. May affect genetic material (mutagenic). May cause adverse reproductive effects.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes skin irritation. May cause skin allergy. Some individuals may become sensitized and suffer "nickel itch", a form of dermatitis resulting from sensitization to nickel. It is characterized by skin eruptions followed by discrete ulcers, or by eczema. Eyes: Causes irritation, redness and pain. Inhalation: Causes respiratory tract irritation. Symptoms may include coughing, wheezing, sore throat, hoarseness, shortness of breath (dyspnea), asthma, bronchitis, metallic taste in mouth. Other symptoms of inhalation of nickel or nickel compounds may include nausea, vomiting, abdominal pain, giddiness, dizziness, weakness, somnolence, sleeplessness, dysphoria, blurred vision, and numbness. Ingestion: Toxic if swallowed. Causes abdominal pain, nausea, vomiting, hypermotility, diarrhea. It may affect behavior/central nervous system (somnolence, giddiness, dizziness, headache, lassitude, central nervous system depression), heart (decreased myocardial contractility, myocardial damage). It may cause liver and kidney damage. **Chronic Potential Health Effects:** Skin: Prolonged or repeated skin contact may cause sensitization dermatitis known as "nickel itch." Ingestion: Prolonged or repeated ingestion may cause liver and kidney damage, degenerative changes in the brain, and weight loss. It may also affect the blood (changes in blood serum composition, leukocytosis, reticulocytosis, erythrocytosis). Inhalation: Repeated or prolonged inhalation may cause allergic asthma, pneumonitis. **Aggravation of Pre-existing Conditions:** Individuals with pre-existing skin disorders, impaired respiratory or pulmonary function, or with a history of asthma, allergies, or sensitization to nickel compounds may be at increased risk upon exposure to this substance.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Toxic solid, inorganic, n.o.s. (Nickel chloride) UNNA: 3288 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information**Federal and State Regulations:**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Nickel compounds California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Nickel compounds. Connecticut hazardous material survey.: Listed as Nickel chloride Illinois chemical safety act: Listed as Nickel chloride New York acutely hazardous substances: Listed as Nickel chloride Pennsylvania RTK: Listed Nickel chloride Massachusetts RTK: Listed as Nickel chloride Massachusetts spill list: Listed as Nickel chloride New Jersey: Listed as Nickel chloride New Jersey spill list: Listed as Nickel (II)chloride., California Director's List of Hazardous substances: Listed as Nickel Chloride (NiCl₂) Louisiana RTK reporting list: Listed as Nickel chloride SARA 313 toxic chemical notification and release reporting: Nickel compounds CERCLA: Hazardous substances.: Listed as Nickel chloride: 100 lbs. (45.36 kg) Nickel Chloride hexahydrate (CAS no. 7791-20-0) is not present on State Lists.

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:**WHMIS (Canada):**

CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):

R20- Harmful by inhalation. R25- Toxic if swallowed. S24/25- Avoid contact with skin and eyes. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available

Other Special Considerations: Not available

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