

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nickel(II) chloride hexahydrate

Product Number : 223387

Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Carcinogen, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Skin and respiratory sensitiser, Irritant, Teratogen, Mutagen

##### Target Organs

Lungs

##### GHS Classification

Acute toxicity, Oral (Category 3)  
Acute toxicity, Inhalation (Category 3)  
Skin irritation (Category 2)  
Respiratory sensitisation (Category 1)  
Skin sensitisation (Category 1)  
Germ cell mutagenicity (Category 2)  
Carcinogenicity (Category 1B)  
Reproductive toxicity (Category 1B)  
Acute aquatic toxicity (Category 1)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H331	Toxic if swallowed or if inhaled
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.

H400 Very toxic to aquatic life.

Precautionary statement(s)

P201 Obtain special instructions before use.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P273 Avoid release to the environment.

P280 Wear protective gloves.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P311 Call a POISON CENTER or doctor/ physician.

**HMIS Classification**

**Health hazard:** 2  
**Chronic Health Hazard:** \*  
**Flammability:** 0  
**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 2  
**Fire:** 0  
**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** Toxic if inhaled. Causes respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** Toxic if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula :  $\text{Cl}_2\text{Ni} \cdot 6\text{H}_2\text{O}$   
Molecular Weight : 237.69 g/mol

Component	Concentration
<b>Nickel(II) chloride hexahydrate</b>	
CAS-No. 7791-20-0	-

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**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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**5. FIREFIGHTING MEASURES**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

## Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Nickel/nickel oxides

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### 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.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Hygroscopic.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Nickel(II) chloride hexahydrate	7791-20-0	TWA	1 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Lung damage Nasal cancer Not classifiable as a human carcinogen varies			
		TWA	0.015 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			

### 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	crystalline
Colour	green

### Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	not applicable
Ignition temperature	no data available
Auto-ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
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

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

Avoid moisture.

**Materials to avoid**

Strong oxidizing agents, Peroxides

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Nickel/nickel oxides  
Other decomposition products - no data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD50 Oral - rat - 105 mg/kg

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Other changes.  
Behavioral:Somnolence (general depressed activity). Diarrhoea

**Inhalation LC50**

no data available

**Dermal LD50**

no data available

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitisation**

May cause allergic respiratory and skin reactions

**Germ cell mutagenicity**

In vitro tests showed mutagenic effects

Genotoxicity in vitro - Human - HeLa cell  
DNA damage

Genotoxicity in vitro - Hamster - fibroblast  
Sister chromatid exchange

Genotoxicity in vitro - mouse - mammary gland  
Mutation in mammalian somatic cells.

Genotoxicity in vitro - mouse - mammary gland  
Cytogenetic analysis

Genotoxicity in vivo - rat - Subcutaneous  
DNA damage

**Carcinogenicity**

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Nickel(II) chloride hexahydrate)

NTP: Known to be human carcinogen (Nickel(II) chloride hexahydrate)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

Reproductive toxicity - rat - Oral

Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

no data available

**Teratogenicity**

Presumed human reproductive toxicant

**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

**Potential health effects**

<b>Inhalation</b>	Toxic if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	Toxic if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**

no data available

**Additional Information**

RTECS: QR6480000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

no data available

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.51 mg/l - 48 h
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**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

Very toxic to aquatic life.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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### 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.

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### 14. TRANSPORT INFORMATION

#### DOT (US)

UN number: 3288 Class: 6.1 Packing group: III  
Proper shipping name: Toxic solid, inorganic, n.o.s. (Nickel(II) chloride hexahydrate)  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

#### IMDG

UN number: 3288 Class: 6.1 Packing group: III EMS-No: F-A, S-A  
Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hexahydrate)  
Marine pollutant: No

#### IATA

UN number: 3288 Class: 6.1 Packing group: III  
Proper shipping name: Toxic solid, inorganic, n.o.s. (Nickel(II) chloride hexahydrate)

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### 15. REGULATORY INFORMATION

#### OSHA Hazards

Carcinogen, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Skin and respiratory sensitiser, Irritant, Teratogen, Mutagen

#### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

#### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

#### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

#### New Jersey Right To Know Components

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

#### California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer.	7791-20-0	2004-05-07
Nickel(II) chloride hexahydrate		

## 16. OTHER INFORMATION

### **Further information**

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