



SIGMA-ALDRICH

## Material Safety Data Sheet

Date Printed: 01/24/2002  
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Version 1.0

### Section 1 - Product and Company Information

**Product Name** NICKEL(II) CHLORIDE, 98%  
**Product Number** 339350  
**Brand** Aldrich Chemical

**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO, 63103, US  
**Technical Phone:** 314 771 5765  
**Fax:** 800 325 5052

**Emergency Phone:** 414 273 3850 Ext. 5996

### Section 2 - Composition/Information on Ingredient

**Substance Name** NICKEL(II) CHLORIDE ANHYDROUS  
**CAS #** 7718-54-9  
**SARA 313** No

**Formula** Cl<sub>2</sub>Ni  
**Synonyms** Nickel chloride, Nickel dichloride, Nickelous chloride

### Section 3 - Hazards Identification

**Emergency Overview**  
Toxic.  
May cause cancer. Toxic by inhalation, in contact with skin, and if swallowed. May cause sensitization by inhalation and skin contact. Irritating to eyes, respiratory system, and skin.  
Carcinogen. Target organ(s): Lungs. Target organ(s): Lungs.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

**Immediate Treatment - Work Site**  
In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

**Oral Exposure**  
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**  
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

### Section 5 - Fire Fighting Measures

**Autoignition Temp:** N/A  
**Flammability:** N/A

**Extinguishing Media**  
**Suitable**  
Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

### Firefighting

#### Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

#### Specific Hazard(s)

Emits toxic fumes under fire conditions.

### Exposure Hazard(s)

#### Material

Toxic. Irritant. Sensitizer.

### Section 6 - Accidental Release Measures

#### Procedure to be Followed In Case of Leak or Spill

Evacuate area.

#### Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

#### Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

##### User Exposure

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### Storage

##### Suitable

Keep tightly closed. Store in a cool dry place.

### Section 8 - Exposure Controls / PPE

#### Engineering Controls

Safety shower and eye bath. Use only in a chemical fume hood.

#### Personal Protective Equipment

##### Other

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

#### General Hygiene Measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

#### Exposure Limits, RTECS

Country	Source	Type	Value	Remarks
USA	ACGIH	TWA	0.1 MG(NI)/M3	
USA	MSHA Standard-air	TWA	1 MG(NI)/M3	
USA	OSHA	PEL	8H TWA 1 MG(NI)/M3	
New Zealand	OEL			check ACGIH TLV
USA	NIOSH	TWA	0.015 MG(NI)/M3	

### Section 9 - Physical/Chemical Properties

**Molecular Weight:** 129.62 AMU

#### Property Value

**pH** N/A  
**BP/BP Range** N/A

Aldrich Chemical - 339350  
Page 2

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MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	3.55 g/cm <sup>3</sup>
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A
Autoignition Temp	N/A
Solubility	N/A

## Section 10 - Stability and Reactivity

### Stability

#### Stable

Stable.

#### Materials to Avoid

Peroxides.

### Hazardous Decomposition Products

#### Hazardous Decomposition Products

Hydrogen chloride gas, Nickel/nickel oxides.

## Section 11 - Toxicological Information

### Route of Exposure

#### Inhalation

Material is irritating to mucous membranes and upper respiratory tract.

#### Multiple Routes

Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation.

### Sensitization

#### Sensitization

Causes dermatitis.

#### Respiratory

May cause allergic respiratory reaction.

### Target Organ(s) or System(s)

Lungs.

### Signs and Symptoms of Exposure

Exposure can cause: Gastrointestinal disturbances. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: QR6475000

### Toxicity Data

Oral - Rat: 681 mg/kg (LD50)

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

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Page 3

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Intraperitoneal - Rat: 20597 UG/KG (LD50)

Intravenous - Rat: 68100 UG/KG (LD50)

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

Oral - Mouse: 369 mg/kg (LD50)

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

Intraperitoneal - Mouse: 11 MG/KG (LD50)

Intravenous - Mouse: 20 MG/KG (LD50)

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

Intramuscular - Rabbit: 27 MG/KG (LD50)

### Chronic Exposure Carcinogen

Result: Carcinogen.

### Chronic Exposure - Teratogen

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	4426 UG/KG	Intraperitoneal	(12D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Rat	4 MG/KG	Intraperitoneal	(11D PREG)
Result: Effects on Embryo or Fetus: Other effects to embryo.			
Rat	8 MG/KG	Intramuscular	(8D PREG)
Result: Effects on Embryo or Fetus: Fetal death.			
Mouse	20 MG/KG	Intraperitoneal	(1D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Specific Developmental Abnormalities: Central nervous system.			
Specific Developmental Abnormalities: Other developmental abnormalities.			
Mouse	5078 UG/KG	Intraperitoneal	(11D PREG)
Result: Effects on Embryo or Fetus: Fetal death.			
Mouse	2649 UG/KG	Intraperitoneal	(10D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Specific Developmental Abnormalities: Musculoskeletal system.			

### Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Route</u>	<u>Cell Type</u>	<u>Mutation test</u>
Human	2 MMOL/L		HeLa cell	DNA inhibition
Human	2 MMOL/L		HeLa cell	Other mutation test systems
Human	100 UMOL/L		fibroblast	Other mutation test systems
Rat	40 UMOL/L		Other cell types	Morphological transformation.
Mouse	1700 UG/KG	Intraperitoneal		Micronucleus test
Mouse	100 UMOL/L		fibroblast	Cytogenetic analysis
Mouse	25 MG/KG	Unreported		Dominant lethal test
Hamster	10 UG/L		Embryo	Morphological transformation.
Hamster	100 UMOL/L		Embryo	Unscheduled DNA synthesis
Hamster	5 MG/KG	Intraperitoneal		Cytogenetic analysis
Hamster	10 UMOL/L		ovary	Cytogenetic analysis
Hamster	3200 NMOL/L		ovary	Sister chromatid exchange
Hamster	662 UMOL/L		lung	Sister chromatid exchange
Hamster	500 UMOL/L		lung	Mutation in mammalian somatic cells.
Hamster	10 MG/KG	Intraperitoneal		Cytogenetic analysis

### Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	1170 UG/KG	Oral	(30W PRE/1-22D PREG)

Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Aldrich Chemical - 339350

Page 4

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Rat 10 GM/KG Oral (11W MALE/11W PRE-3W POST)  
Result: Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Rat 5 MG/KG Oral (90D MALE/90D PRE-21D PREG)  
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Rat 95 MG/KG Subcutaneous (4D POST)  
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Rat 71319 UG/KG Subcutaneous (3D POST)  
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Rat 12 MG/KG Intramuscular (8D PREG)  
Result: Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).

Rat 16 MG/KG Intramuscular (8D PREG)  
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Mouse 2560 MG/KG Oral (2-17D PREG)  
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Mouse 30 MG/KG Intraperitoneal (8D PREG)  
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Mouse 20 MG/KG Intraperitoneal (1D PREG)  
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).

Mouse 875 MG/KG Unreported (35D MALE)  
Result: Effects on Fertility: Other measures of fertility

## Section 12 - Ecological Information

## Section 13 - Disposal Considerations

### Appropriate Method of Disposal of Substance or Preparation

The material should be dissolved in: 1) water, 2) acid solution, or 3) oxidized to a water-soluble state. Precipitate the material as the sulfide, adjusting the pH of the solution to 7 to complete precipitation. Filter the insolubles and dispose of them in a hazardous waste site. Destroy any excess sulfide with sodium hypochlorite. Neutralize the solution before flushing down the drain. Observe all federal, state, and local environmental regulations.

## Section 14 - Transport Information

### DOT

**Proper Shipping Name:** Toxic solid, inorganic, n.o.s.  
**UN#:** 3288  
**Class:** 6.1  
**Packing Group:** Packing Group III  
**PIH:** Not PIH

### IATA

**Proper Shipping Name:** Toxic solid, inorganic, n.o.s.  
**IATA Number:** 3288  
**Hazard Class:** 6.1  
**Packing Group:** III

## Section 15 - Regulatory Information

### US Classification and Label Text

**Indication of Danger**  
Toxic.

### Risk Statements

May cause cancer. Toxic by inhalation, in contact with skin, and if swallowed. May cause sensitization by inhalation and skin contact. Irritating to eyes, respiratory system, and skin.

### Safety Statements

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

### US Statements

Carcinogen. Target organ(s): Lungs. Target organ(s): Lungs.

### United States Regulatory Information

#### SARA 313 Listed: No

**Notes:** This product is subject to SARA section 313 reporting requirements. This product is subject to SARA section 313 reporting requirements.

**TSCA Inventory Item:** Yes

## Section 16 - Other Information

### Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 1999 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.