Section 1 - Product and Company Information

Product Name: NICKEL(II) CHLORIDE, 98%
Product Number: 339350
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
Technical Phone: 314 771 8765
Fax: 800 325 5052
Emergency Phone: 414 273 3850 Ext. 9996

Section 2 - Composition/Information on Ingredient

Substance Name: NICKEL(II) CHLORIDE ANHYDROUS
CAS #: 7718-54-9
SARA 313: No
Formula: C12H14
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 in the 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.

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/NMSHA-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures:
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Molecular Weight: 129.62 AMU

Property: Value
pH: N/A
BP/BP Range: N/A

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Section 10 - Stability and Reactivity

Stability
Stable.

Materials to Avoid
Peroxides.

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

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: QR647500

Toxicity Data
Oral - Rat: 681 mg/kg (LD50)
Remarks: Behavioral Somnolence (general depressed activity).
BehavioralConvulsions or effect on seizure threshold.

Intraperitoneal - Rat: 20567 UG/KG (LD50)
Intravenous - Rat: 68100 UG/KG (LD50)
Remarks: Behavioral Somnolence (general depressed activity).
Behavioral Convulsions or effect on seizure threshold.

Chronic Exposure Carcinogen
Result: Carcinogenic.

Chronic Exposure - Teratogen

<table>
<thead>
<tr>
<th>Species</th>
<th>Route of Application</th>
<th>Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>Intraperitoneal</td>
<td>(12D PREG)</td>
</tr>
<tr>
<td>4246 UG/KG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rat</td>
<td>Intraperitoneal</td>
<td>(11D PREG)</td>
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<tr>
<td>4 MG/KG</td>
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<td></td>
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<tr>
<td>Rat</td>
<td>Intramuscular</td>
<td>(8D PREG)</td>
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<tr>
<td>8 MG/KG</td>
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<tr>
<td>Mouse</td>
<td>Intraperitoneal</td>
<td>(1D PREG)</td>
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<tr>
<td>20 MG/KG</td>
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<td></td>
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<tr>
<td>Mouse</td>
<td>Intraperitoneal</td>
<td>(1D PREG)</td>
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<tr>
<td>5078 UG/KG</td>
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</table>

Chronic Exposure - Mutagen

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<thead>
<tr>
<th>Species</th>
<th>Route of Application</th>
<th>Cell Type</th>
<th>Mutation test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human</td>
<td>Hepa cell</td>
<td>DNA adduction</td>
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</tr>
<tr>
<td>Human</td>
<td>HeLa cell</td>
<td>Other mutation test systems</td>
<td></td>
</tr>
<tr>
<td>Human</td>
<td>fibroblast</td>
<td>Other mutation test systems</td>
<td></td>
</tr>
<tr>
<td>Rat</td>
<td>Other cell types</td>
<td>Morphological transformation.</td>
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<tr>
<td>Mouse</td>
<td>Micronucleus test</td>
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<td></td>
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<tr>
<td>Mouse</td>
<td>fibroblast</td>
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<tr>
<td>Mouse</td>
<td>Embryo</td>
<td>Morphological transformation.</td>
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<tr>
<td>Hamster</td>
<td>Embryo</td>
<td>Unscheduled DNA synthesis</td>
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</tr>
<tr>
<td>Hamster</td>
<td>intraperitoneal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hamster</td>
<td>ovaries</td>
<td>Cyto genetic analysis</td>
<td></td>
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<tr>
<td>Hamster</td>
<td>ovaries</td>
<td>Sisiter chromatid exchange</td>
<td></td>
</tr>
<tr>
<td>Hamster</td>
<td>lung</td>
<td>Sisiter chromatid exchange</td>
<td></td>
</tr>
<tr>
<td>Hamster</td>
<td>lung</td>
<td>Mutations in mammalian somatic cells</td>
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</table>

Chronic Exposure - Reproductive Hazard

<table>
<thead>
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<th>Species</th>
<th>Route of Application</th>
<th>Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>Oral</td>
<td>(30W PRE/1-22D PREG)</td>
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<tr>
<td>1170 UG/KG</td>
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</tbody>
</table>

Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female total number of implants per copula futa). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
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 sulfides with sodium hypochlorite. Neutralize the solution before discharging 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 No.: 3266
Class: 6.1
Packing Group: Packing Group III
Pn: 29

IATA
Proper Shipping Name: Toxic solid, inorganic, n.o.s.
IATA Number: 3268
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.

Aldrich Chemical - 339350
Page 5

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Page 6

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