

**** MATERIAL SAFETY DATA SHEET ****
Nickel (II) Chloride Hexahydrate
16310

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Nickel (II) Chloride Hexahydrate
Catalog Numbers: N53 500, N53 500, N53500, N54 10, N54 250, N54 3, N54 500
N54 104, N54104-1, N54 500, N54 500, N54 500, N54 500, N54 500, N54 500, N54 500
N54 500, N54 500, N54 500, N54 500, N54 500, N54 500, N54 500, N54 500
Synonyms: Nickel Chloride, Nickel Dichloride
Company Identification: Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7791-20-0	NICKEL(II) CHLORIDE HEXAHYDRATE	97%	unlisted
Hazard Symbols: XN			
Risk Phrases: 20/22			

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: green.
Warning! May cause allergic skin reaction. Toxic. May be harmful if swallowed. Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May cause severe skin irritation and possible burns. May cause respiratory and digestive tract irritation. May cause cancer based on animal studies.
Target Organs: Respiratory system.

Potential Health Effects

Eye: May cause eye irritation and possible burns.

Skin: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May cause severe irritation and possible burns. May cause dermatitis.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: Inhalation of a mist of this material may cause respiratory tract irritation.

Chronic: Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. May cause respiratory tract cancer.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. If victim is conscious and alert, give 2-4 cups of milk or water.

Ingestion: Get medical aid immediately. Remove from exposure to fresh air. Get medical aid immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire.
Extinguishers: Use dry chemical, carbon dioxide, or water. Extinguishers should be used on noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Noncombustible.
Flash Point: Noncombustible.
NFPA Rating:
Explosion Limits: Upper: Not available.
Lower: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Reduce airborne dust and prevent scattering by moistening with water. Carefully scoop up and place into appropriate disposal container.

**** SECTION 7 - HANDLING AND STORAGE ****

Handling: Thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
NICKEL(II) CHLORIDE hexahydrate	metal: (1) mg/m ³ as Ni: 0.015 mg/m ³ TWA (listed under NICKEL).	metal and compounds, as Ni: 1 mg/m ³ TWA, soluble compounds, as Ni: 1 mg/m ³ TWA (listed under NICKEL).	metal and compounds, as Ni: 1 mg/m ³ TWA, soluble compounds, as Ni: 1 mg/m ³ TWA (listed under NICKEL).

OSHA Vacated PELs:

NICKEL(II) CHLORIDE HEXAHYDRATE: 1 mg/m³ TWA (listed under NICKEL) as Ni: 0.1 mg/m³ TWA (listed under NICKEL SOLUBLE COMPOUNDS)

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN186.

Skin:

Wear appropriate gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Solid
Appearance: green
Odor: odorless
pH: 4.0 (aqueous sol)
Vapor Pressure: 1 mm Hg @1140F
Vapor Density: Not available
Evaporation Rate: Negligible
Viscosity: Not available
Boiling Point: 1783 deg F
Freezing/Melting Point: Not available
Decomposition Temperature: Not available
Solubility: Soluble (water=1)
Specific Gravity/Density: NICKEL 6.87
Molecular Formula: NICKEL 6H2O
Molecular Weight: 237.6/64

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid:
Incompatible materials, dust generation.
Incompatibilities with Other Materials:
Strong oxidizers, peroxides, potassium.
Hazardous Decomposition Products:
Hydrogen chloride, nickel oxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 7791-20-0: OR6480000
LD50/LC50:
CAS# 7791-20-0: Oral, rat: LD50 = 157 mg/kg.
Carcinogenicity:
NICKEL(II) CHLORIDE HEXAHYDRATE - Initial date 10/1/89 (listed as NICKEL).
California: carcinogen - Initial date 10/1/89 (listed as NICKEL).
NIOSH: occupational carcinogen (listed as NICKEL).
OSHA: Suspect carcinogen (listed as NICKEL).
IARC: Group 2B carcinogen (listed as NICKEL).
Epidemiology:
No information available.
Teratogenicity:
No information available.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
Cytogenetic Analysis: mouse mammary gland 800umol/L. Sister Chromatid Exchange: hamster fibroblast 32mg/L.
Other Studies:
None.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
No information available.
Environmental Fate:
No information reported.
Physical/Chemical:
No information available.
Other:
None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA T-Series: None listed.
RCRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: TOXIC SOLID, INORGANIC, N.O.S.
(NICKELOUS CHLORIDE)
Hazard Class: 6.1
UN Number: UN3288
Packing Group: III

IMO

Not regulated as a hazardous material.

IATA

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.

Canada: TSC

Shipping Name: NICKEL CHLORIDE

UN Number: UN9139

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL

TSCA

CAS# 7791-20-0 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA inventory requirements (40CFR720.3(u)(2)).

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
Section 12B
None of the chemicals in this product are under a Chemical Test Rule.

TSCA Significant New Use Rule

SARA
None of the chemicals in this material have a SNUR under TSCA.

Section 302 (RQ)
None of the chemicals in this material have an RQ.

Section 302 (TPQ)
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 7791-20-0: acute, chronic.

Section 313

This material contains NICKEL(II) CHLORIDE HEXAHYDRATE (listed as NICKEL, 97%) (CAS# 7791-20-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act

CAS# 7791-20-0 listed as NICKEL COMPOUNDS is listed as a hazardous air pollutant (HAP).

Clean Water Act:
This material does not contain any Class 1 Ozone depleters.

Clean Water Act:
This material does not contain any Class 2 Ozone depleters.

Substances under the CWA:
None of the chemicals in this product are listed as Hazardous

Water Act:
CAS# 7791-20-0 is listed as a Priority Pollutant under the Clean

Water Act:
CAS# 7791-20-0 is listed as a Toxic Pollutant under the Clean Water

Act:
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
NICKEL(II) CHLORIDE HEXAHYDRATE can be found on the following state right to know lists: California (listed as NICKEL, Chloride),

(listed as NICKEL COMPOUNDS), New Jersey (listed as NICKEL, Chloride),

Florida (listed as NICKEL, Chloride), Minnesota (listed as NICKEL, Chloride),

Massachusetts (listed as NICKEL, Chloride),

The following statement(s) is/are made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains NICKEL(II) CHLORIDE HEXAHYDRATE, listed as fNICKEL, a chemical known to the state of California to cause cancer.

California No Significant Risk Level:

None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases: R 20/22 Harmful by inhalation and if swallowed.

Safety Phrases: S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)
CAS# 7791-20-0: No information available.

Canada
None of the chemicals in this product are listed on the DSL/NDSL list.

This product has a WHMIS classification of D1B, D2A.

CAS# 7791-20-0 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits
CAS# 7791-20-0: OEL-ARAB Republic of Egypt: TWA 0.1 mg(NI)/m3

OEL-AUSTRIA: TWA 1 mg(NI)/m3 (insoluble compounds)

OEL-BELGIUM: TWA 1 mg(NI)/m3 (insoluble compounds)

OEL-BELGIUM: TWA 1 mg(NI)/m3 (insoluble compounds)

OEL-DEUTSCHLAND: TWA 0.05 mg(NI)/m3 (insoluble compounds)

OEL-DENMARK: TWA 0.05 mg(NI)/m3 (insoluble compounds)

OEL-FINLAND: TWA 0.1 mg(NI)/m3 (insoluble compounds)

OEL-FINLAND: TWA 0.1 mg(NI)/m3 (insoluble compounds)

OEL-FRANCE: TWA 1 mg(NI)/m3 (insoluble compounds)

OEL-GERMANY: Carcinogen

OEL-HUNGARY: STEL 0.005 mg(NI)/m3 (insoluble compounds)

OEL-HUNGARY: STEL 0.005 mg(NI)/m3 (insoluble compounds)

OEL-JAPAN: TWA 1 mg(NI)/m3 (insoluble compounds)

OEL-NETHERLANDS: TWA 0.1 mg(NI)/m3 (insoluble compounds)

OEL-NETHERLANDS: TWA 0.1 mg(NI)/m3 (insoluble compounds)

OEL-PHILIPPINES: TWA 1 mg(NI)/m3 (insoluble compounds)

OEL-RUSSIA: STEL 0.05 mg(NI)/m3 (insoluble compounds)

OEL-SWITZERLAND: TWA 0.5 mg(NI)/m3 (insoluble compounds)

OEL-SWITZERLAND: TWA 0.5 mg(NI)/m3 (insoluble compounds)

OEL-TAIWAN: TWA 0.5 mg(NI)/m3 (insoluble compounds)

OEL-UNITED KINGDOM: TWA 0.5 mg(NI)/m3 (insoluble compounds)

OEL-UNITED KINGDOM: TWA 0.5 mg(NI)/m3 (insoluble compounds)

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 2/28/1995 Revision #8 Date: 12/12/1997

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to

such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

R 35 Causes severe burns.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 30 Never add water to this product.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7664-93-9: 2

Canada CAS# 7664-93-9 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of C, D1A, E.

CAS# 7664-93-9 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 7664-93-9: OEL-ARAB Republic of Egypt: TWA 1 mg/m³
OEL-AUSTRALIA: TWA 1 mg/m³
OEL-BELGIUM: TWA 1 mg/m³; STEL 3 mg/m³
OEL-CZECHOSLOVAKIA: TWA 1 mg/m³; STEL 2 mg/m³
OEL-DENMARK: TWA 1 mg/m³
OEL-FINLAND: TWA 1 mg/m³; STEL 3 mg/m³; Skin
OEL-FRANCE: TWA 1 mg/m³; STEL 3 mg/m³
OEL-GERMANY: TWA 1 mg/m³
OEL-HUNGARY: STEL 1 mg/m³
OEL-JAPAN: TWA 1 mg/m³
OEL-THE NETHERLANDS: TWA 1 mg/m³
OEL-THE PHILIPPINES: TWA 1 mg/m³
OEL-PO AND-TWA 1 mg/m³
OEL-RUSSIA: STEL 1 mg/m³; Skin
OEL-SWEDEN: TWA 1 mg/m³; STEL 3 mg/m³
OEL-SWITZERLAND: TWA 1 mg/m³; STEL 2 mg/m³
OEL-THAILAND: TWA 1 mg/m³
OEL-TURKEY: TWA 1 mg/m³
OEL-UNITED KINGDOM: TWA 1 mg/m³
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 12/28/1994 Revision #23 Date: 12/12/1997

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability for any loss or damage resulting from the use of this information. Users are advised to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.