

Material Safety Data Sheet

Nickel (II) sulfate hexahydrate

ACC# 16410

Section 1 - Chemical Product and Company Identification

MSDS Name: Nickel (II) sulfate hexahydrate

Catalog Numbers: AC211080000, AC211081000, AC211085000, AC415610000, AC415610050, AC415615000, S76472, S76475, N72-3, N73-100, N73-500

Synonyms: Nickel monosulfate hexahydrate; Nickel sulfate hexahydrate.

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	Percent	EINECS/ELINCS
10101-97-0	Nickel (II) sulfate hexahydrate	98+	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: blue-green crystals.

Warning! Harmful if swallowed. Causes eye irritation. May cause allergic respiratory and skin reaction. Cancer hazard. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Target Organs: Respiratory system, skin.

Potential Health Effects

Eye: Causes mild eye irritation.

Skin: May be harmful if absorbed through the skin. May cause sensitization by skin contact.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract.

Inhalation: May be harmful if inhaled. May cause respiratory sensitization. May cause an asthma-like allergy. Future exposures can cause asthma attacks with shortness of breath, wheezing, cough and chest tightness.

Chronic: May cause cancer in humans. Prolonged or repeated exposure may cause sensitization in certain sensitive individuals. Repeated exposure may cause scarring of the lungs and may affect the

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid immediately. Call a poison control center.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician: Treat symptomatically and supportively.

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.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Noncombustible

Autoignition Temperature: Noncombustible

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal

protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use only in a chemical fume hood.
Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Nickel (II) sulfate hexahydrate	0.1 mg/m ³ TWA (inhalable fraction, as Ni) (listed under Nickel, inorganic compounds, soluble).	0.015 mg/m ³ TWA (as Ni, except Nickel carbonyl) (listed under Nickel compounds).10 mg/m ³ IDLH (as Ni, except Nickel carbonyl) (listed under Nickel compounds).	1 mg/m ³ TWA (as Ni) (listed under Nickel soluble compounds).
Nickel (II) sulfate	none listed	none listed	none listed

OSHA Vacated PELs: Nickel (II) sulfate hexahydrate: No OSHA Vacated PELs are listed for this chemical. Nickel (II) sulfate: No OSHA Vacated PELs are listed for this chemical.

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 EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Appearance: blue-green
Odor: odorless
pH: 4 - 6 (5% aq. sol.)
Vapor Pressure: Negligible
Vapor Density: Not available.
Evaporation Rate:Not available.
Viscosity: Not available.
Boiling Point: 103 deg C
Freezing/Melting Point:53 deg C
Decomposition Temperature:> 280 deg C
Solubility: 625 g/L (20°C)
Specific Gravity/Density:2.07 (water=1)
Molecular Formula:NiSO4.6H2O
Molecular Weight:262.85

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, dust generation.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Oxides of sulfur, nickel oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 10101-97-0: QR9600000

CAS# 7786-81-4: QR9350000

LD50/LC50:

CAS# 10101-97-0:

Oral, rat: LD50 = 264 mg/kg;

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CAS# 7786-81-4:

Draize test, rabbit, skin: 5%;

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Carcinogenicity:

CAS# 10101-97-0:

- **ACGIH:** Not listed.

- **California:** carcinogen, initial date 5/7/04 (listed as Nickel compounds).
- **NTP:** Known carcinogen (listed as Nickel compounds).
- **IARC:** Group 1 carcinogen

CAS# 7786-81-4:

- **ACGIH:** Not listed.
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Group 1 carcinogen

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: Paternal Effects: intraperitoneal-rat TDLo=403mg/kg.

Mutagenicity: Please refer to RTECS QR9600000 for mutation data and references.

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. Prawn (salt water) LC50=13.9ppm/48H Rainbow trout (fresh water) TLm=160ppm/48H

Environmental: Nickel is very mobile in aquatic environment and shows potential for bioaccumulation.

Physical: No information available.

Other: Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	TOXIC SOLIDS, ORGANIC, N.O.S.	TOXIC SOLIDS, ORGANIC, N.O.S.

	(NICKEL SULFATE)	(NICKEL SULFATE)
Hazard Class:	6.1	6.1
UN Number:	UN2811	UN2811
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 10101-97-0 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 7786-81-4 is listed on the TSCA inventory.

Health & Safety Reporting List

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

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

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

CERCLA Hazardous Substances and corresponding RQs

CAS# 7786-81-4: 100 lb final RQ; 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 10101-97-0: immediate, delayed.

Section 313

This material contains Nickel (II) sulfate hexahydrate (listed as Nickel compounds), 98+%, (CAS# 10101-97-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 10101-97-0 (listed as Nickel compounds) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 7786-81-4 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 10101-97-0 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

CAS# 10101-97-0 can be found on the following state right to know lists: California, (listed as Nickel compounds), New Jersey, (listed as Nickel compounds),

Pennsylvania, (listed as Nickel compounds), Minnesota, (listed as Nickel soluble compounds).

CAS# 7786-81-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California Prop 65

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

WARNING: This product contains Nickel (II) sulfate hexahydrate, listed as 'Nickel compounds', 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 N

Risk Phrases:

R 22 Harmful if swallowed.

R 40 Limited evidence of a carcinogenic effect.

R 42/43 May cause sensitization by inhalation and skin contact.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 22 Do not breathe dust.

S 36/37 Wear suitable protective clothing and gloves.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 10101-97-0: 2

CAS# 7786-81-4: No information available.

Canada - DSL/NDSL

CAS# 7786-81-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 10101-97-0 (listed as Nickel soluble compounds) is listed on the Canadian Ingredient Disclosure List.

CAS# 7786-81-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 8/07/1998

Revision #10 Date: 1/04/2008

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 event shall Fisher 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 Fisher has been advised of the possibility of such damages.