

Material Safety Data Sheet

Nickel(II) nitrate hexahydrate

ACC# 16370

Section 1 - Chemical Product and Company Identification

MSDS Name: Nickel(II) nitrate hexahydrate

Catalog Numbers: AC223150000, AC223150050, AC223155000, S801051, S93311, S93312, N62-500

Synonyms: Nickelous nitrate hexahydrate; Nitric acid, nickel(2+) salt, hexahydrate; Nickel dinitrate 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
13478-00-7	Nickel dinitrate hexahydrate	99	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: emerald green solid.

Danger! Strong oxidizer. Contact with other material may cause a fire. May cause allergic respiratory and skin reaction. May cause severe eye irritation and possible injury. May cause harm to the unborn child. Causes skin and respiratory tract irritation. May be harmful if swallowed or inhaled. May cause cancer by inhalation.

Target Organs: Blood, central nervous system, eyes, skin, mucous membranes.

Potential Health Effects

Eye: May cause severe eye irritation and possible injury.

Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which

becomes evident upon re-exposure to this material.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage.

Inhalation: Dust is irritating to the respiratory tract. May cause allergic respiratory reaction. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, tachycardia, dyspnea (labored breathing), and death.

Chronic: Prolonged inhalation may cause respiratory tract inflammation and lung damage. Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. May cause respiratory tract cancer. Possible risk of harm to the unborn child.

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.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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

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. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is nonflammable. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode if exposed to fire.

Extinguishing Media: Use water spray to cool fire-exposed containers. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. For large fires flood fire with water from a distance. Do NOT use dry chemicals, CO₂, Halon or foams.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

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

Section 6 - Accidental Release Measures

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

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Remove all sources of ignition. Carefully scoop up and place into appropriate disposal container. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Wash clothing before reuse. Do not breathe dust or fumes. Use only with adequate ventilation.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from reducing agents.

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 adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Nickel dinitrate 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, excluding 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 dinitrate anhydrous	0.1 mg/m ³ TWA (inhalable fraction, as Ni) (listed under Nickel, inorganic	0.015 mg/m ³ TWA (as Ni, excluding Nickel carbonyl) (listed under Nickel compounds).10	1 mg/m ³ TWA (as Ni) (listed under Nickel soluble compounds).

	compounds, soluble).	mg/m ³ IDLH (as Ni except Nickel carbonyl) (listed under Nickel compounds).	
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OSHA Vacated PELs: Nickel dinitrate hexahydrate: No OSHA Vacated PELs are listed for this chemical. Nickel dinitrate anhydrous: 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: Solid

Appearance: emerald green

Odor: odorless

pH: 4.0 (aqueous sol.)

Vapor Pressure: Negligible

Vapor Density: 10.0

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 137 deg C

Freezing/Melting Point: 56.7 deg C

Decomposition Temperature: 200 deg C

Solubility: Soluble.

Specific Gravity/Density: 2.05

Molecular Formula: Ni(NO₃)₂·6H₂O

Molecular Weight: 290.8

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation.

Incompatibilities with Other Materials: Strong reducing agents, combustible materials, flammable liquids.

Hazardous Decomposition Products: Nitrogen oxides, irritating and toxic fumes

and gases, nickel oxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 13478-00-7: QR7300000

CAS# 13138-45-9: QR7200000

LD50/LC50:

CAS# 13478-00-7:

Oral, rat: LD50 = 1620 mg/kg;

CAS# 13138-45-9:

Carcinogenicity:

CAS# 13478-00-7:

- **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# 13138-45-9:

- **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 (listed as Nickel compounds).

Epidemiology: An increased incidence of lung and nasal cavity cancers has been noted among women in nickel smelters and refineries.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available.

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

No information available.

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:	NICKEL NITRATE	NICKEL NITRATE
Hazard Class:	5.1	5.1
UN Number:	UN2725	UN2725
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 13478-00-7 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# 13138-45-9 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

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 13478-00-7: immediate, delayed, fire.

Section 313

This material contains Nickel dinitrate hexahydrate (listed as Nickel compounds), 99%, (CAS# 13478-00-7) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Nickel dinitrate anhydrous (listed as Nickel compounds), -%, (CAS# 13138-45-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 13478-00-7 (listed as Nickel compounds) is listed as a hazardous air pollutant (HAP).

CAS# 13138-45-9 (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# 13138-45-9 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# 13478-00-7 is listed as a Toxic Pollutant under the Clean Water Act.

CAS# 13138-45-9 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# 13478-00-7 can be found on the following state right to know lists: California, (listed as Nickel compounds), New Jersey, (listed as Nickel compounds), New Jersey, (listed as Nickel, inorganic compounds), Pennsylvania, (listed as Nickel compounds), Minnesota, (listed as Nickel soluble compounds).

CAS# 13138-45-9 can be found on the following state right to know lists: California, (listed as Nickel nitrate), California, (listed as Nickel compounds), New Jersey, Pennsylvania, Minnesota, (listed as Nickel soluble compounds), 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 dinitrate hexahydrate, listed as 'Nickel compounds', a chemical known to the state of California to cause cancer. WARNING: This product contains Nickel dinitrate anhydrous, 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:

T O N

Risk Phrases:

R 20/22 Harmful by inhalation and if swallowed.

R 38 Irritating to skin.

R 41 Risk of serious damage to eyes.

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

R 8 Contact with combustible material may cause fire.

R 49 May cause cancer by inhalation.

R 48/23 Toxic : danger of serious damage to health by prolonged exposure through inhalation.
R 61 May cause harm to the unborn child.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 68 Possible risk of irreversible effects.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 53 Avoid exposure - obtain special instructions before use.
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# 13478-00-7: No information available.
CAS# 13138-45-9: 2

Canada - DSL/NDSL

CAS# 13138-45-9 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D2B.
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# 13478-00-7 (listed as Nickel soluble compounds) is listed on the Canadian Ingredient Disclosure List.
CAS# 13138-45-9 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 8/06/1998

Revision #5 Date: 12/01/2006

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.