# SAFETY DATA SHEET

**Creation Date** 23-December-2009 **Revision Date** 17-January-2018 **Revision Number** 4

## 1. Identification

**Product Name** **Nickel Nitrate Hexahydrate (Certified)**

**Cat No. :** **N62-500**

**CAS-No** 13478-00-7
**Synonyms** Nickelous nitrate hexahydrate

**Recommended Use** Laboratory chemicals.
**Uses advised against** Not for food, drug, pesticide or biocidal product use

**Details of the supplier of the safety data sheet**

**Company**
**Importer/Distributor**
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

**Manufacturer**
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

**Emergency Telephone Number**
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

## 2. Hazard(s) identification

**Classification**

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

| | |
|---|---|
| **Oxidizing solids** | Category 2 |
| **Acute oral toxicity** | Category 4 |
| **Acute Inhalation Toxicity** | Category 4 |
| **Skin Corrosion/irritation** | Category 2 |
| **Serious Eye Damage/Eye Irritation** | Category 1 |
| **Respiratory Sensitization** | Category 1 |
| **Skin Sensitization** | Category 1 |
| **Germ Cell Mutagenicity** | Category 2 |
| **Carcinogenicity** | Category 1A |
| **Reproductive Toxicity** | Category 1B |
| **Specific target organ toxicity (single exposure)** | Category 3 |
| Target Organs - Respiratory system. | |
| **Specific target organ toxicity - (repeated exposure)** | Category 1 |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
May intensify fire; oxidizer
Harmful if swallowed or if inhaled
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye damage
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
Suspected of causing genetic defects
May cause cancer by inhalation
May damage the unborn child
Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements**
**Prevention**
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep/Store away from clothing/combustible materials
Take any precaution to avoid mixing with combustibles
Do not breathe dust/fumes/gas/mist/vapours/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves/protective clothing/eye protection/face protection
Wear respiratory protection
**Response**
IF ON SKIN: Wash with plenty of soap and water
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER/doctor
Rinse mouth
If experiencing respiratory symptoms: Call a POISON CENTER/doctor
Take off contaminated clothing
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
**Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
**Disposal**
Dispose of contents/container to an approved waste disposal plant

**Other Hazards**
Very toxic to aquatic life with long lasting effects

## 3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|---|---|---|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | >95 |
| Nickel nitrate (2+ salt) | 13138-45-9 | - |

## 4. First-aid measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Most important symptoms/effects** Causes eye burns. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Notes to Physician** Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Use extinguishing agent suitable for type of surrounding fire.

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available
**Method -** No information available

**Autoignition Temperature**
**Explosion Limits**
**Upper** No data available
**Lower** No data available
**Oxidizing Properties** Oxidizer

**Sensitivity to Mechanical Impact** No information available
**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**
Oxidizer: Contact with combustible/organic material may cause fire. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire fighting to enter drains or water courses.

**Hazardous Combustion Products**
nitric acid
**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 3 | 1 | 2 | OX |

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional

ecological information. Avoid release to the environment. Collect spillage.

**Methods for Containment and Clean Up** Keep combustibles (wood, paper, oil, etc) away from spilled material. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

## 7. Handling and storage

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Keep away from clothing and other combustible materials. Avoid dust formation. Do not breathe vapors/dust. Do not ingest.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | Alberta | British Columbia | Ontario TWAEV | Quebec | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|---|---|---|---|
| Nickel(II) nitrate, hexahydrate (1:2:6) | TWA: 0.1 mg/m³ | TWA: 0.05 mg/m³ | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | (Vacated) TWA: 0.1 mg/m³ | IDLH: 10 mg/m³ TWA: 0.015 mg/m³ |
| Nickel nitrate (2+ salt) | TWA: 0.1 mg/m³ | TWA: 0.05 mg/m³ | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | (Vacated) TWA: 0.1 mg/m³ | IDLH: 10 mg/m³ TWA: 0.015 mg/m³ |

**Legend**

*ACGIH - American Conference of Governmental Industrial Hygienists*

*OSHA - Occupational Safety and Health Administration*

*NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health*

**Engineering Measures**

Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment**

**Eye Protection** Goggles

**Hand Protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

| Glove material | Breakthrough time | Glove thickness | Glove comments |
|---|---|---|---|
| Natural rubber<br>Nitrile rubber<br>Neoprene<br>PVC | See manufacturers recommendations | - | Splash protection only |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**
Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Solid |
| **Appearance** | Blue green |
| **Odor** | Odorless |
| **Odor Threshold** | No information available |
| **pH** | 5 50g/L (20°C) |
| **Melting Point/Range** | 56.7 °C / 134.1 °F |
| **Boiling Point/Range** | 137 °C / 278.6 °F |
| **Flash Point** | No information available |
| **Evaporation Rate** | Not applicable |
| **Flammability (solid,gas)** | No information available |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | negligible |
| **Vapor Density** | Not applicable |
| **Specific Gravity** | No information available |
| **Solubility** | Soluble in water |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | |
| **Decomposition Temperature** | 137 °C |
| **Viscosity** | Not applicable |
| **Molecular Formula** | N2 Ni O6 . 6 H2 O |
| **Molecular Weight** | 290.8 |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactive Hazard** | Yes |
| **Stability** | Oxidizer: Contact with combustible/organic material may cause fire. |
| **Conditions to Avoid** | Avoid dust formation. Incompatible products. Excess heat. Combustible material. |
| **Incompatible Materials** | Strong oxidizing agents, Organic materials, Powdered metals, Acids, Strong reducing agents, Combustible material |
| **Hazardous Decomposition Products** | nitric acid |
| **Hazardous Polymerization** | No information available. |
| **Hazardous Reactions** | None under normal processing. |

## 11. Toxicological information

**Acute Toxicity**

**Product Information**
**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Nickel(II) nitrate, hexahydrate (1:2:6) | LD50 = 1620 mg/kg ( Rat ) | Not listed | Not listed |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Severe eye irritant; Irritating to skin

**Sensitization** May cause sensitization by inhalation and skin contact

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | Group 1 | Known | Not listed | X | Not listed |
| Nickel nitrate (2+ salt) | 13138-45-9 | Not listed | Known | Not listed | Not listed | Not listed |

*IARC: (International Agency for Research on Cancer)*

*IARC: (International Agency for Research on Cancer)*
*Group 1 - Carcinogenic to Humans*
*Group 2A - Probably Carcinogenic to Humans*
*Group 2B - Possibly Carcinogenic to Humans*

**Mutagenic Effects** Possible risk of irreversible effects

**Reproductive Effects** May cause harm to the unborn child.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system
**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects,both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** See actual entry in RTECS for complete information.

## 12. Ecological information

**Ecotoxicity**
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN-No** | UN2725 |
| **Proper Shipping Name** | NICKEL NITRATE |
| **Hazard Class** | 5.1 |
| **Packing Group** | III |

**TDG**

| | |
|---|---|
| **UN-No** | UN2725 |
| **Proper Shipping Name** | NICKEL NITRATE |
| **Hazard Class** | 5.1 |
| **Packing Group** | III |

**IATA**

| | |
|---|---|
| **UN-No** | UN2725 |
| **Proper Shipping Name** | NICKEL NITRATE |
| **Hazard Class** | 5.1 |
| **Packing Group** | III |

**IMDG/IMO**

| | |
|---|---|
| **UN-No** | UN2725 |
| **Proper Shipping Name** | NICKEL NITRATE |
| **Hazard Class** | 5.1 |
| **Packing Group** | III |

## 15. Regulatory information

**International Inventories**

| Component | DSL | NDSL | TSCA | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nickel(II) nitrate, hexahydrate (1:2:6) | - | - | - | - | - | | X | - | X | X | - |
| Nickel nitrate (2+ salt) | X | - | X | 236-068-5 | - | | X | X | X | X | X |

**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

## 16. Other information

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**Creation Date** 23-December-2009
**Revision Date** 17-January-2018
**Print Date** 17-January-2018
**Revision Summary** This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

**End of SDS**