

SAFETY DATA SHEET

Creation Date 23-Dec-2009

Revision Date 22-Dec-2025

Revision Number 4

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name Nickel(II) nitrate hexahydrate

Cat No. : A15540

CAS No 13478-00-7
Synonyms Nickelous nitrate hexahydrate

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

| | |
|--|-------------|
| Oxidizing solids | Category 2 |
| Acute oral toxicity | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists | 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 |
| Target Organs - Lungs. | |

Label Elements**Signal Word**

Danger

Hazard Statements

May intensify fire; oxidizer
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
Harmful if swallowed or if inhaled

**Precautionary Statements****Prevention**

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
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
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep away from clothing and other combustible materials
Take any precaution to avoid mixing with combustibles
Wear protective gloves/protective clothing/eye protection/face protection

Response

IF exposed or concerned: Get medical attention/advice

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing

If experiencing respiratory symptoms: Call a POISON CENTER or doctor

Skin

IF ON SKIN: Wash with plenty of soap and water

Take off contaminated clothing

If skin irritation or rash occurs: Get medical advice/attention

Eyes

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 or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

FireIn case of fire: Use CO₂, dry chemical, or 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

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

WARNING. Cancer and Reproductive Harm - <https://www.p65warnings.ca.gov/>.

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. Get medical attention. |
| Inhalation | Remove 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 and 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 | No information available |
| 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
3

Flammability
1

Instability
2

Physical hazards
OX

6. Accidental release measures

Personal Precautions

Use personal protective equipment as required. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or 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 and shovel into suitable containers 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/face protection. Do not get in eyes, on skin, or on clothing. Keep away from clothing and other combustible materials. Avoid dust formation. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

Storage.

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Incompatible Materials. Strong oxidizing agents. Organic materials. Finely powdered metals. Acids. Strong reducing agents. Combustible material.

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH | Mexico OEL (TWA) |
|---|----------------------------|--------------------------------------|---|----------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | TWA: 0.1 mg/m ³ | (Vacated) TWA: 0.1 mg/m ³ | IDLH: 10 mg/m ³ REL = 0.015 mg/m ³ (TWA) | TWA: 0.1 mg/m ³ |
| Nickel nitrate (2+ salt) | TWA: 0.1 mg/m ³ | (Vacated) TWA: 0.1 mg/m ³ | IDLH: 10 mg/m ³ REL = 0.015 mg/m ³ (TWA) | TWA: 0.1 mg/m ³ |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and 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.

Personal Protective Equipment

| | |
|---------------------------------|---|
| Eye/face Protection | 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 and body protection | Wear appropriate protective gloves and clothing to prevent skin exposure. |
| Respiratory Protection | 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. |
| Recommended Filter type: | Particulates filter conforming to EN 143. |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |

9. Physical and chemical properties

| | | | |
|--|--------------------------|----------------|-----------------|
| Appearance | | | |
| Physical State | Solid | | |
| Color | Blue green | | |
| Odor | Odorless | | |
| Odor Threshold | No information available | | |
| Property | Values | Remarks | • Method |
| Melting Point/Range | 56.7 °C / 134.1 °F | | |
| Softening Point | No data available | | |
| Boiling Point/Range | 137 °C / 278.6 °F | | |
| Flash Point | No information available | | |
| Flammability (liquid) | Not applicable | | |
| Flammability (solid,gas) | No information available | | |
| Explosion Limits | No data available | | |
| Autoignition Temperature | No data available | | |
| Decomposition Temperature | 137 °C | | |
| pH | 5 | 50g/L (20°C) | |
| Viscosity | Not applicable | Solid | |
| Water Solubility | 940 g/L (20°C) | | |
| Solubility in other solvents | No information available | | |
| Partition Coefficient (n-octanol/water) | | | |
| Vapor Pressure | negligible | | |
| Density / Specific Gravity | No data available | | |
| Bulk Density | No data available | | |
| Vapor Density | Not applicable | Solid | |
| Particle characteristics | No data available | | |
| Other Information | | | |
| Molecular Formula | N2 Ni O6 . 6 H2 O | | |
| Molecular Weight | 290.8 | | |
| Oxidizing Properties | Oxidizer | | |
| Evaporation Rate | Not applicable - Solid | | |

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, Finely 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

Information on expected route of exposure

Inhalation Not an expected route of exposure.
Ingestion May be harmful if swallowed.
Eyes Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. May cause irritation.
Skin Avoid contact with skin. Skin Corrosion/Irritation. May cause irritation.

Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---------------------------|-------------|-----------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | LD50 = 1620 mg/kg (Rat) | - | - |

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory Category 1
Skin Category 1

May cause sensitization by skin contact

(e) germ cell mutagenicity; Category 2

Possible risk of irreversible effects

(f) carcinogenicity; Category 1A

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

(g) reproductive toxicity; Category 1B

Reproductive Effects May cause harm to the unborn child.

(h) STOT-single exposure; Based on available data, the classification criteria are not met

| | |
|--|--|
| (i) STOT-repeated exposure; | Category 1 |
| Target Organs | Lungs. |
| (j) aspiration hazard; | Not applicable Solid |
| Other Adverse Effects | See actual entry in RTECS for complete information |
| 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. |
| Other Adverse Effects | See actual entry in RTECS for complete information. |
| Endocrine Disrupting Properties | This product does not contain any known or suspected endocrine disruptors. |

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

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|---|------------|------|---|-----------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | - | - | - |
| Nickel nitrate (2+ salt) | 13138-45-9 | X | ACTIVE | - |

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)

Not applicable

TSCA 12(b) - Notices of Export

Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|---|------------|-----|------|-----------|-------|------|------|------|-------|----------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | - | - | - | X | - | | X | X | - |
| Nickel nitrate (2+ salt) | 13138-45-9 | X | - | 236-068-5 | X | X | X | X | X | KE-25844 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Component | CAS No | Weight % | SARA 313 - Threshold Values % | SARA 313 - Reporting thresholds |
|---|------------|----------|-------------------------------|---------------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | >95 | 0.1 % 1.0 % | - |
| Nickel nitrate (2+ salt) | 13138-45-9 | - | 0.1 % | - |

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|---|----------------------------|-----------------------------|------------------------|---------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | - | - | X | - |
| Nickel nitrate (2+ salt) | - | - | X | - |

Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|---|-----------|-------------------------|-------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | X | | - |
| Nickel nitrate (2+ salt) | X | | - |

OSHA - Occupational Safety and Health Administration

Not applicable

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product contains the following Proposition 65 chemicals.

| Component | CAS No | California Prop. 65 | Prop 65 NSRL | Category |
|---|------------|--|--------------|-----------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | Carcinogen Developmental Male Reproductive | - | Developmental Carcinogen |
| Nickel nitrate (2+ salt) | 13138-45-9 | Carcinogen Developmental Male Reproductive | - | Developmental Carcinogen |

U.S. State Right-to-Know Regulations

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---------------|------------|--------------|----------|--------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | - | X | X | X | X |
| Nickel nitrate (2+ salt) | X | X | X | X | X |

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations**Mexico - Grade**

No information available

Authorisation/Restrictions according to EU REACH

| Component | CAS No | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---|------------|---|---|---|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | - | Use restricted. See entry 27. (see link for restriction details) | - |
| Nickel nitrate (2+ salt) | 13138-45-9 | - | Use restricted. See entry 28. (see link for restriction details) Use restricted. See entry 30. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details) Use restricted. See entry 27. | - |

| | | | | |
|--|--|--|------------------------------------|--|
| | | | (see link for restriction details) | |
|--|--|--|------------------------------------|--|

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---|------------|----------------|------------------------------|---------------------------|--|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | Not applicable | Not applicable | Not applicable | Not applicable |
| Nickel nitrate (2+ salt) | 13138-45-9 | Listed | Not applicable | Not applicable | Not applicable |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|------------|---|--|----------------------------|------------------------------------|
| Nickel(II) nitrate, hexahydrate (1:2:6) | 13478-00-7 | Not applicable | 1 tonne | Not applicable | Not applicable |
| Nickel nitrate (2+ salt) | 13138-45-9 | Not applicable | 1 tonne | Not applicable | Not applicable |

16. Other Information

Prepared By

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22-Dec-2025

Revision Summary

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

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