

# SAFETY DATA SHEET

Date Printed: 05/04/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Nickel Sulfate Solution

**Product Code:** NI-SAT-04-SOL

**CAS Number:** 10101-97-0

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1B H360 May damage fertility or the unborn child.

STOT RE 1 H372 Causes damage to the lung, the kidneys, the liver, the heart, the blood and the endocrine system through prolonged or repeated exposure.

Route of exposure: Oral, Inhalative.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Hazards not otherwise classified No data available.

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)



Hazard pictograms

GHS08

Signal word Danger

Hazard-determining components of labeling:

Nickel(II) sulfate hexahydrate

Hazard statements

H315 Causes skin irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

H372 Causes damage to the lung, the kidneys, the liver, the heart, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure:

Oral, Inhalative.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 In case of inadequate ventilation wear respiratory protection.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D2A - Very toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

2

0

1

Health (acute effects) = 2

Flammability = 0

Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment:

PBT: N/A.

vPvB: N/A.

---

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Dangerous components:

10101-97-0 Nickel(II) sulfate hexahydrate

Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350; Repr. 1B, H360; STOT RE 1, H372; Acute Tox. 4, H302; Acute Tox. 4, H332;

Skin Irrit. 2, H315; Skin Sens. 1, H317

13.1%

Additional information None known.

Non-Hazardous Ingredients

7732-18-5 Water 86.9%

---

## SECTION 4. FIRST AID MEASURES

Description of first aid measures

If inhaled:

Supply fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact: Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed: Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed No information available.

Indication of any immediate medical attention and special treatment needed No information available.

---

## SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Sulfur oxides (SO<sub>x</sub>)

Toxic metal oxide fume

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

---

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions: Do not allow material to be released to the environment without official permits.

Methods and material for containment and cleanup:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

---

## SECTION 7. HANDLING AND STORAGE

### Handling

Precautions for safe handling

Keep container tightly sealed.

Ensure adequate ventilation.

Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

Conditions for safe storage, including any incompatibilities

### Storage

Requirements to be met by storerooms and receptacles: Refrigerate

Information about storage in one common storage facility:

Protect from heat.

Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

Further information about storage conditions:

Keep container tightly sealed.

Refrigerate

Specific end use(s) No information available.

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

10101-97-0 Nickel(II) sulfate hexahydrate (13.1%)

PEL (USA) Long-term value: 1 mg/m<sup>3</sup>

as Ni

REL (USA) Long-term value: 0.015 mg/m<sup>3</sup>

as Ni; See Pocket Guide App. A

TLV (USA) Long-term value: 0.1 mg/m<sup>3</sup>

as Ni; inhalable fraction

EV (Canada) Long-term value: 0.1 mg/m<sup>3</sup>

Inhalable fraction, as Ni

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical general protective and industrial hygiene measures for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Penetration time of glove material (in minutes) No data available.

Eye protection: Safety glasses

Body protection: Protective work clothing.

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Liquid

Color: Green

Odor: Odorless

Odor threshold: No data available.

pH: No data available.

Melting point/range: No data available.

Boiling point/range: No data available.

Sublimation temperature / start: No data available.

Flammability (solid, gas): No data available.

Ignition temperature: No data available.

Decomposition temperature: No data available.

Auto igniting: Product is not selfigniting.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available.

Upper: No data available.

Vapor pressure at 20 °C (68 °F): 23 hPa (17 mm Hg)

Density: No data available.

Relative density No data available.

Vapor density No data available.

Evaporation rate No data available.

Solubility in / Miscibility with

Water: Fully miscible

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: No data available.

Kinematic: No data available.

Solvent content:

Organic solvents: 0.0 %

Solids content: 13.1 %

Other information No information available.

---

## SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available.

Chemical stability Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Water reacts violently with alkali metals.

Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

Conditions to avoid No information available.

Incompatible materials: Heat

Hazardous decomposition products:

Sulfur oxides (SO<sub>x</sub>)

Toxic metal oxide fume

---

## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity: N/A

LD/LC50 values that are relevant for classification:

10101-97-0 Nickel(II) sulfate hexahydrate

Oral LD50 264 mg/kg (rat)

Skin irritation or corrosion: May cause irritation

Eye irritation or corrosion: May cause irritation

Sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Germ cell mutagenicity: Suspected of causing genetic defects.

Carcinogenicity:

May cause cancer.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

NTP-K: Known to be carcinogenic: sufficient evidence from human studies.

Reproductive toxicity: May damage fertility or the unborn child.

Specific target organ system toxicity - repeated exposure:

Causes damage to the lung, the kidneys, the liver, the heart, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Specific target organ system toxicity - single exposure: N/A

Aspiration hazard: N/A

Subacute to chronic toxicity: N/A

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

Carcinogenic if inhaled.

May cause harm to the unborn child

---

## SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No information available.

Persistence and degradability: No information available.

Bioaccumulative potential: No information available.

Mobility in soil: No information available.

Additional ecological information:

General notes:

Do not allow material to be released to the environment without official permits.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic to aquatic life.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.  
Results of PBT and vPvB assessment:  
PBT: N/A.  
vPvB: N/A.  
Other adverse effects No information available.

---

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation: Consult state, local or national regulations to ensure proper disposal.  
Uncleaned packagings:  
Recommendation: Disposal must be made according to official regulations.  
Recommended cleansing agent: Water, if necessary with cleansing agents.

---

## **SECTION 14. TRANSPORT INFORMATION**

UN-Number  
DOT, IMDG, IATA UN3082  
UN proper shipping name  
DOT Environmentally hazardous substances, liquid, n.o.s. (Nickel(II) sulfate hexahydrate)  
IMDG ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nickel(II) sulfate hexahydrate), MARINE POLLUTANT  
IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nickel(II) sulfate hexahydrate)  
Transport hazard class(es)  
DOT  
Class 9 Miscellaneous dangerous substances and articles.  
Label 9  
Class 9 (M6) Miscellaneous dangerous substances and articles  
Label 9  
IMDG, IATA  
Class 9 Miscellaneous dangerous substances and articles.  
Label 9  
Packing group  
DOT, IMDG, IATA III  
Environmental hazards:  
Marine pollutant (IMDG): Symbol (fish and tree)  
Special marking (ADR): Symbol (fish and tree)  
Special marking (IATA): Symbol (fish and tree)  
Special precautions for user Warning: Miscellaneous dangerous substances and articles  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A.  
Transport/Additional information:  
DOT  
Marine Pollutant (DOT): No  
UN "Model Regulation": UN3082, Environmentally hazardous substances, liquid, n.o.s. (Nickel(II) sulfate hexahydrate), 9, III

---

## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture  
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

GHS08

Signal word Danger

Hazard-determining components of labeling:

Nickel(II) sulfate hexahydrate

Hazard statements

H315 Causes skin irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

H372 Causes damage to the lung, the kidneys, the liver, the heart, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure:

Oral, Inhalative.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 In case of inadequate ventilation wear respiratory protection.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

10101-97-0 Nickel(II) sulfate hexahydrate 13.1%

California Proposition 65

Prop 65 - Chemicals known to cause cancer

10101-97-0 Nickel(II) sulfate hexahydrate 13.1%

Prop 65 - Developmental toxicity

None of the ingredients are listed.

Prop 65 - Developmental toxicity, female

None of the ingredients are listed.

Prop 65 - Developmental toxicity, male

None of the ingredients are listed.

Information about limitation of use:

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

None of the ingredients are listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the

market and use must be observed.

None of the ingredients is listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)



None of the ingredients is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

---

## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.