

Safety Data Sheet

1. IDENTIFICATION

Product Identifier:	Nickel Sulfate, 10% w/v Solution
Product Code(s):	N1009
Synonyms:	Nickel(II) Sulfate Solution
Recommended Use:	For manufacturing, industrial, and laboratory use only. Use as a solvent or as a laboratory reagent.
Uses Advised Against:	Not for household use.
Supplier:	Rocky Mountain Reagents, Inc. 4621 Technology Drive, Golden, CO 80403 Phone: (303) 762-0800 Fax: (303) 762-1240
Emergency Phone Number:	For health emergency, call poison control: (800) 222-1222.

2. HAZARDS IDENTIFICATION

Hazard Classifications:	Skin Corrosion/Irritation: Category 2 Eye Damage/Irritation: Category 2A Sensitization – Respiratory: Category 1 Sensitization – Skin: Category 1 Germ Cell Mutagenicity: Category 2 Carcinogenicity: Category 1A Toxic to Reproduction: Category 1B Specific Target Organ Toxicity (Repeated Exposure): Category 1 (Respiratory)
Signal Word:	DANGER
Hazard Statements:	Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to respiratory system through prolonged or repeated exposure.

Pictograms:



Precautionary Statements:

- Prevention:** Do not breathe fume, mist, vapors, or spray.
In case of inadequate ventilation, wear respiratory protection.
Contaminated work clothing must not be allowed to leave the workplace.
Wear protective gloves, protective clothing, eye protection, and face protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
- Response:** If exposed or concerned: Get medical attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor.
If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.
Get medical attention if you feel unwell.
- Storage:** Store locked up.
- Disposal:** Dispose of contents and container in accordance with local, regional, national, and international regulations.
- Hazards Not Otherwise Classified:** Very toxic to aquatic life with long lasting effects. Avoid release to the environment.
- Toxicity Statement:** Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Water	Water	7732-18-5	H ₂ O	90
Nickel Sulfate, Hexahydrate	Nickel(II) Sulfate, Hexahydrate	10101-97-0	NiSO ₄ • 6H ₂ O	10

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

- Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician if symptoms occur.
- Ingestion:** Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by

mouth to an unconscious person. Call a physician or poison control center if symptoms occur.

Skin Contact: Wash skin with soap and plenty of water for at least 15 minutes. If skin irritation or rash occurs: Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if symptoms occur.

Eye Contact: Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Check for and remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Call a physician if symptoms occur.

General Advice: Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that those providing first aid and medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Symptoms and Effects: Irritation, redness, itchiness. May be harmful if swallowed or inhaled. Causes skin irritation. Causes serious eye irritation. Prolonged or repeated exposure may affect the blood, lungs, kidneys, liver, skin, and heart; may cause reproductive effects, allergic reaction, and cancer. 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.

**Immediate Medical Care/
Special Treatment:** Get medical attention if feeling unwell or concerned. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water spray, dry powder, alcohol resistant foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream, as it may scatter and spread fire.

**Hazardous Combustion
Products:** Nickel oxides, sulfur oxides.

Specific Hazards: Excessive thermal conditions may yield corrosive and/or toxic fumes.

**Special Protective Equipment/
Precautions for Firefighters:** As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions and
Protective Equipment:** Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing.

Emergency Procedures: In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).

Methods for Containment: Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material, where this is possible. Product should not be released to the environment. Contain and recover liquid when possible.

Methods for Cleanup: Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer.

Clean contaminated surface thoroughly. Residues from spills can be diluted with water. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling: Wear personal protective equipment (see Section 8). Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin, eyes, and clothing. Avoid exposure to moisture. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

Storage: Store in a cool, dry, ventilated area. Store away from heat and incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Water: No information found.

Nickel sulfate, hexahydrate: ACGIH (TLV): 0.1 mg/m³
OSHA (PEL): 0.1 mg/m³
NIOSH (IDLH): 10 mg/m³
NIOSH (TWA): 0.015 mg/m³

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment: Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance: Blue-green, transparent liquid.

Odor:	Odorless.
Odor Threshold:	No information found.
Formula Weight:	262.84 as nickel sulfate, hexahydrate
pH:	4 – 6 (5% aqueous)
Melting/Freezing Point:	No information found.
Boiling Point/Range:	No information found.
Decomposition Temperature:	> 280 °C
Flash Point:	Not applicable.
Auto-ignition Temperature:	Not applicable.
Flammability:	Not flammable.
Flammability/Explosive Limits:	Not applicable.
Solubility:	Miscible with water.
Vapor Pressure:	No information found.
Vapor Density:	No information found.
Specific Gravity:	No information found.
Evaporation Rate:	No information found.
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	No information found.

10. STABILITY AND REACTIVITY

Reactivity Data:	No information found.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Excessive heat, incompatible materials.
Incompatible Materials:	Strong oxidizers.
Hazardous Decomposition Products:	Nickel oxides, sulfur oxides.
Possibility of Hazardous Reactions:	May react vigorously or violently with the incompatible materials listed above. Excessive thermal conditions may yield hazardous decomposition products listed above.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.
Acute Effects:	May be harmful if swallowed or inhaled. May cause irritation if exposed to the skin or eyes.
Chronic Effects:	Prolonged or repeated exposure may affect the blood, lungs, kidneys, liver, skin, and heart; may cause reproductive effects, allergic reaction, and cancer.
Toxicological Data:	Water: Not applicable.

Nickel sulfate, hexahydrate: LD₅₀ Oral, Rat: 361.9 mg/kg
Causes skin and respiratory sensitization based on animal data.
Causes reproductive effects based on animal data.

Symptoms of Exposure: Irritation, redness, itchiness, wheezing, nausea, vomiting, diarrhea.

Carcinogenic Effects: This product may cause cancer.

IARC: Nickel sulfate, hexahydrate: Group 1 – Carcinogenic to humans

ACGIH: Nickel sulfate, hexahydrate: Not listed.

NTP: Nickel sulfate, hexahydrate: Known human carcinogen

OSHA: Nickel sulfate, hexahydrate: Listed.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data: Water: Not applicable.

Nickel Sulfate:

EC ₅₀ , Freshwater Algae (<i>Pseudokirchneriella subcapitata</i>):	0.75 mg/L, 72 h
LC ₅₀ , Zebrafish (<i>Brachydanio rerio</i>):	> 100 mg/L, 24 h
LC ₅₀ , Rainbow Trout (<i>Oncorhynchus mykiss</i>):	1.28 mg/L, 96 h
EC ₅₀ , Water Flea (<i>Daphnia magna</i>):	1 mg/L, 48 h

Persistence and Degradability: Expected to bioaccumulate. Not expected to biodegrade.

Environmental Effects: Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Avoid exposure to the environment.

13. DISPOSAL INFORMATION

Disposal Instructions: Dispose of this material and its container to an approved waste collection point. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers. All wastes must be handled in accordance with local, state, and federal regulations.

Contaminated Packaging: Because emptied containers may retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: No information found.

14. TRANSPORT INFORMATION

DOT: Not regulated.

Environmental Hazard Regulations: Nickel Sulfate, Hexahydrate: Regulated as a marine pollutant by IMDG

Other Transport Precautions: DOT Reportable Quantity: 100 lb

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: Nickel sulfate, hexahydrate is not on U.S. TSCA Inventory. All other components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: No information found.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	Yes
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

Section 313: Nickel sulfate, hexahydrate: Threshold Value: 0.1%

CERCLA Reportable Quantities: Nickel sulfate: 100 lb

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed components of this product comply with the inventory requirements administered by the governing country or region.

16. OTHER INFORMATION

Disclaimer:

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