

Material Safety Data Sheet
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No. 37
 NICKEL SULFATE, HEXAHYDRATE
 (Revision A)
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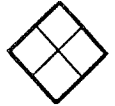
SECTION 1. MATERIAL IDENTIFICATION 19

MATERIAL NAME: NICKEL SULFATE

OTHER DESIGNATIONS: Nickelous Sulfate Hexahydrate; Sulfuric Acid; Nickel Salt, Hexahydrate; NiSO₄·6H₂O; CAS #10101-97-0.

MANUFACTURER/SUPPLIERS: Available from several suppliers, including: Alloychem, Inc., 641 Lexington Avenue, New York, NY 10022; Telephone: (212) 644-1269

HMIS	Not Found
H: 3	R 0
F: 0	I 3
R: 0	S 1
PPE: *	K 0
* See Sect. 8	



SECTION 2. INGREDIENTS AND HAZARDS **HAZARD DATA**

	%	
NICKEL (II) SULFATE HEXAHYDRATE	ca 99	ACGIH TLV* 8-hr TWA: 0.1 mg/m ³ , as Ni
* Current (1985-86) ACGIH TLV and OSHA PEL		----- OSHA PEL* 8-hr TWA: 1 mg/m ³ , as Ni
In a 1977 criteria document, NIOSH recommended a 10-hour TWA of 0.015 mg/m ³ , as Ni.		----- Dog, Subcutaneous; LDLo: 500 mg/kg
		----- Dog, Intravenous; LDLo: 72 mg/kg

SECTION 3. PHYSICAL DATA

Melting Point ... 127.94°F (53.3°C) (Transition Point) 212°F (100°C) (Dehydrate) 1558.4°F (848°C) (Decomposes)	Solubility in Water @ 0°C ... 62.52 g/100cc @ 100°C ... 340.7 g/100cc
Density ... 2.07 g/cc	pH of 5% Solution ... 3.0 - 5.0
Vapor Pressure @ 20°C ... negligible	Molecular Weight ... 262.86

Appearance and odor: Blue to blue-green tetragonal crystals. Undergoes transition to green crystals at 127.94°F (53.3°C). No odor.

SECTION 4. FIRE AND EXPLOSION DATA **LOWER** **UPPER**

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air		
NA	NA	NA		

Nickel sulfate is nonflammable. Use extinguishing agents that are appropriate for the surrounding fire. If water is used, minimize runoff to sewers and waterways. No unusual fire or explosion hazards are associated with this material.

Fire fighters should wear self-contained breathing apparatus and fully protective gear for protection against dust, mist, and fumes generated during fire-fighting activities.

SECTION 5. REACTIVITY DATA

Nickel sulfate is stable at room temperature. Nickel sulfate does not polymerize. It loses water of hydration at 212°F (100°C) and decomposes at 1558.4°F (848°C) with the evolution of oxides of sulfur (toxic).

SECTION 6. HEALTH HAZARD INFORMATION | TLV

Inhalation of dust or mist can cause irritation of the upper respiratory tract. Skin contact may be irritating and can cause allergic dermatitis ("nickel itch") characterized by itching, erythema, and skin eruptions. Eye contact with dust or solutions may cause irritation. Ingestion of nickel salts can cause giddiness, nausea, and vomiting. The IARC and NTP list "Nickel and certain nickel compounds" as suspected carcinogens. This is based in part on epidemiological evidence of excess incidences of nasal and lung cancer in populations of workers exposed to nickel or nickel compounds. The specific nickel compounds responsible have not been identified.

FIRST AID: **EYE CONTACT:** Flush well (including under the eyelids) with running water for 10 to 15 minutes. Get medical attention promptly.* **SKIN CONTACT:** Thoroughly wash contaminated area with mild soap and water. Prevent further contact. Get medical attention if irritation persists or recurs. **INHALATION:** Remove to fresh air. If discomfort persists, get medical attention.* **INGESTION:** Give victim a large quantity of water or milk to drink. Contact physician or poison control center for instructions.

* GET MEDICAL ATTENTION = In plant, paramedic, community.

SECTION 7. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety/environmental personnel of large spills. Those involved in cleanup should use protective equipment to prevent skin and eye contact and inhalation of dust or mist. Pick up material in a manner that minimizes dust generation. Place in suitable container for reclaim or disposal.

Reportable Spill Quantity: 5000 lbs (40 CFR 117.3)

DISPOSAL: Reclaim material when possible. Unsalvageable material may be disposed of in sealed containers in an approved, secured sanitary landfill. DO NOT release solutions without prior treatment to allowable levels. Contact supplier or licensed waste disposal contractor for treatment/disposal instructions. Follow Federal, state, and local regulations.

SECTION 8. SPECIAL PROTECTION INFORMATION

Use adequate local exhaust ventilation to maintain dust/mist levels below the TLV. Where dust/mist concentrations exceed the TLV, workers should wear NIOSH-approved respirators with protection factors suitable to the level of exposure. Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134).

Rubber gloves and safety glasses/goggles should be worn when handling this material. Protective clothing (coveralls, apron, etc.) should be worn as required by the work situation to prevent prolonged/repeated contact and gross contamination of skin and clothing. Launder contaminated clothing before reuse.

Eyewash stations and washing facilities should be readily accessible to workers handling this material. Contact lenses pose a special hazard; soft lenses may absorb and all lenses concentrate irritants.

SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers. Protect containers from physical damage. Handle material in a manner that minimizes generation of dust or mist. Use with adequate ventilation. Maintain good housekeeping procedures to prevent accumulation of dust. Clean up spills promptly. Workers should use good personal hygiene practice. Wash thoroughly after handling and before eating, drinking, and smoking. Wash contaminated skin promptly. DO NOT eat or smoke in areas where this material is handled. Avoid breathing dust and mist. Avoid contact with skin, eyes, and clothing. Medical surveillance of exposed workers is recommended with emphasis on the skin, lungs, and nasal cavities. Preclude from exposure those individuals who have become sensitized to nickel compounds or have other conditions that may be aggravated by exposure.

DOT Classification: ORM-E (49 CFR 172.101) NA9141

DOT Label: None

Data Source(s) Code: 2, 4, 5, 9, 12, 14, 19, 27, 58, 61, 62, 82, 84. CV

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Approvals *[Signature]* 6/86

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Medical Review *[Signature]* 86