

# NICKEL NITRATE

NNT

## CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid	Green	Odorless
Nickel nitrate hexahydrate			
Sinks and mixes with water.			
Keep people away. Avoid contact with solid and dust. Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.			
Fire	Not flammable. Will increase the intensity of a fire. POISONOUS GASES MAY BE PRODUCED WHEN HEATED. Flood discharge area with water.		
Exposure	CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. If inhaled will cause coughing or difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. SOLID Irritating to skin and eyes. If swallowed will cause nausea and vomiting. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.		
Water Pollution	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.		

## 1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse  
Stop discharge

## 2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula:  $\text{Ni}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$
- 2.3 IMO/UN Designation: Not listed
- 2.4 DOT ID No.: 2725
- 2.5 CAS Registry No.: 14216-75-2
- 2.6 NAERG Guide No.: 140
- 2.7 Standard Industrial Trade Classification: 52359

## 3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Bu. Mines approved respirator; rubber gloves; face shield or safety goggles; protective clothing
- 3.2 Symptoms Following Exposure: Inhalation of dust causes irritation of nose and throat. Ingestion causes vomiting. Dust irritates eyes and may cause dermatitis in contact with skin.
- 3.3 Treatment of Exposure: INHALATION: move to fresh air; get medical attention if exposure has been severe. INGESTION: give large amount of water. EYES: flush with water for at least 15 min. SKIN: wash with soap and water.
- 3.4 TLV-TWA: Notice of intended change: 1.5 mg Ni/m<sup>3</sup>
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Grade 2; LD<sub>50</sub> = 0.5-5 g/kg
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Possible lung cancer
- 3.10 Vapor (Gas) Irritant Characteristics: Currently not available
- 3.11 Liquid or Solid Characteristics: Currently not available
- 3.12 Odor Threshold: Currently not available
- 3.13 IDLH Value: 10 mg Ni/m<sup>3</sup>
- 3.14 OSHA PEL-TWA: 1 mg/m<sup>3</sup> as nickel
- 3.15 OSHA PEL-STEL: Not listed.
- 3.16 OSHA PEL-Ceiling: Not listed.
- 3.17 EPA AEGL: Not listed

## 4. FIRE HAZARDS

- 4.1 Flash Point: Not flammable, but may intensify fire
- 4.2 Flammable Limits in Air: Not flammable
- 4.3 Fire Extinguishing Agents: Not pertinent
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Toxic oxides of nitrogen may form in fire.
- 4.6 Behavior in Fire: May increase intensity of fire if in contact with combustible material
- 4.7 Auto Ignition Temperature: Not pertinent
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: Not pertinent
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: Not pertinent.
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

## 5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: No reaction
- 5.2 Reactivity with Common Materials: Contact of solid with wood or paper may cause fires.
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

## 6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 2.44 ppm/<sup>1/10</sup>stickleback/threshold conc./tap water  
0.8 ppm/10 days/stickleback/TL<sub>50</sub>/fresh water  
\*Time period not specified.
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): None
- 6.4 Food Chain Concentration Potential: None
- 6.5 GESAMP Hazard Profile: Not listed

## 7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Purified, 99.1%
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: None
- 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available
- 7.7 Barge Hull Type: Currently not available

## 8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Oxidizer

- 8.2 49 CFR Class: 5.1

- 8.3 49 CFR Package Group: III

- 8.4 Marine Pollutant: No

- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	0 1
Flammability (Red).....	0 0
Instability (Yellow).....	0 0
Special (White).....	OX OX

\* First column refers to nonfire situation.

- 8.6 EPA Reportable Quantity: 100 pounds

- 8.7 EPA Pollution Category: B

- 8.8 RCRA Waste Number: Not listed

- 8.9 EPA FWPCA List: Yes

## 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15°C and 1 atm: Solid

- 9.2 Molecular Weight: 290.8

- 9.3 Boiling Point at 1 atm: Not pertinent (decomposes)

- 9.4 Freezing Point: Not pertinent

- 9.5 Critical Temperature: Not pertinent

- 9.6 Critical Pressure: Not pertinent

- 9.7 Specific Gravity: 2.05 at 20°C (solid)

- 9.8 Liquid Surface Tension: Not pertinent

- 9.9 Liquid Water Interfacial Tension: Not pertinent

- 9.10 Vapor (Gas) Specific Gravity: Not pertinent

- 9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent

- 9.12 Latent Heat of Vaporization: Not pertinent

- 9.13 Heat of Combustion: Not pertinent

- 9.14 Heat of Decomposition: Not pertinent

- 9.15 Heat of Solution: 47 Btu/lb = 26 cal/g = 1.1  $\times 10^5$  J/kg

- 9.16 Heat of Polymerization: Not pertinent

- 9.17 Heat of Fusion: Currently not available

- 9.18 Limiting Value: Currently not available

- 9.19 Reid Vapor Pressure: Currently not available

## NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
34	80.030		NOT		NOT		NOT
36	80.870						
38	81.700						
40	82.530						
42	83.370		PERTINENT		PERTINENT		PERTINENT
44	84.200						
46	85.030						
48	85.870						
50	86.700						
52	87.530						
54	88.370						
56	89.200						
58	90.030						
60	90.870						
62	91.700						
64	92.530						
66	93.370						
68	94.200						
70	95.030						
72	95.870						
74	96.700						
76	97.530						
78	98.370						
80	99.200						
82	100.000						
84	100.900						