

# FERRIC NITRATE

FNT

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Ferric nitrate nonahydrate Nitric acid, iron(III) salt	Solid  Green, colorless to pale violet  Odorless
Sinks and mixes with water.	
<p>Keep people away. Avoid contact with solid and dust. Avoid inhalation. Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
<b>Fire</b>	Not flammable. Will increase the intensity of a fire. Flood discharge area with water.
<b>Exposure</b>	<p>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.</p> <p>SOLID Irritating to skin and eyes. Harmful if swallowed. 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 and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>
<b>Water Pollution</b>	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:  $Fe(NO_3)_3 \cdot 9H_2O$
- 2.3 IMO/UN Designation: 5.1/1466
- 2.4 DOT ID No.: 1466
- 2.5 CAS Registry No.: 10421-48-4
- 2.6 NAERG Guide No.: 140
- 2.7 Standard Industrial Trade Classification: 52359

### 3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Dust mask; goggles or face shield; protective gloves
- 3.2 Symptoms Following Exposure: Inhalation of dust irritates nose and throat. Ingestion causes irritation of mouth and stomach. Dust irritates eyes and can irritate skin on prolonged contact.
- 3.3 Treatment of Exposure: INHALATION: move to fresh air. INGESTION: give large amounts of water; induce vomiting if large amounts have been swallowed. EYES: flush with water; get medical attention if irritation persists. SKIN: flush with water.
- 3.4 TLV-TWA:  $1 \text{ mg/m}^3$  (as iron)
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Grade 2;  $LD_{50} = 0.5 - 5 \text{ g/kg}$
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Currently not available
- 3.10 Vapor (Gas) Irritant Characteristics: Not pertinent
- 3.11 Liquid or Solid Characteristics: Currently not available
- 3.12 Odor Threshold: Currently not available
- 3.13 IDLH Value: Not listed.
- 3.14 OSHA PEL-TWA: Not listed.
- 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
- 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 and nitric acid vapor may form in fires.
- 4.6 Behavior in Fire: In contact with combustible materials, will increase the intensity of a fire. Apply water to cool containers or spilled 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: Solutions are corrosive to most metals. Contact of solid with wood or paper may cause fire.
- 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: Currently not available
- 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: Technical, 99.0%; Analytical
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open
- 7.5 IMO Pollution Category: C
- 7.6 Ship Type: 2
- 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: Not listed
- 8.6 EPA Reportable Quantity: 1000 pounds
- 8.7 EPA Pollution Category: C
- 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: 404.02
- 9.3 Boiling Point at 1 atm: Not pertinent (decomposes)
- 9.4 Freezing Point:  $117^{\circ}F = 47^{\circ}C = 320^{\circ}K$
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.7 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:  $40 \text{ Btu/lb} = 22 \text{ cal/g} = 0.92 \times 10^5 \text{ J/kg}$
- 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
	N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T

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	67.950		N		N		N
36	68.809		O		O		O
38	69.660		T		T		T
40	70.520		P		P		P
42	71.379		E		E		E
44	72.230		R		R		R
46	73.089		T		T		T
48	73.940		I		I		I
50	74.799		N		N		N
52	75.650		E		E		E
54	76.509		N		N		N
56	77.360		T		T		T
58	78.219		E		E		E
60	79.080		N		N		N
62	79.929		T		T		T
64	80.790						
66	81.639						
68	82.500						
70	83.349						
72	84.209						
74	85.059						
76	85.919						
78	86.780						
80	87.629						
82	88.490						
84	89.339						