

43% FERRIC NITRATE SOLUTION

Section 1 – Identification

Product 43% Ferric Nitrate Solution Recommended Use:
Utilized industrial chemical applications.

Manufacturer TradeMark Nitrogen Corp.
Address 1216 Old Hopewell Road, Tampa, FL 33619
Phone (813) 626-1181 (800) 452-3107
24 Hour Chemtrec
Emergency (800) 424-9300
Contact

Section 2 – Hazard Identification



GHS07

Signal Word: WARNING

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P262 Do not get in eyes, on skin, or on clothing
P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.

P284 Wear respiratory protection.
P301 IF SWALLOWED:
P331 Do NOT induce vomiting.
P313 Get medical advice/attention.
P303 IF ON SKIN OR HAIR:
P361 P353 Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 IF INHALED
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P313 Get medical advice/attention.
P305 IF IN EYES
P351 P338 Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 P313 If eye irritation persists: Get medical advice/attention.
P370 P378 In case of fire: Use water for extinction.
P410 P403 Protect from sunlight. Store in a well-ventilated place.
P402 Store in a cool, dry place.

Hazard Statements:

H303 May be harmful if swallowed
H314 Causes severe skin burns and eye damage

H335 May cause respiratory irritation
H373 May cause damage to organs through prolonged or repeated exposure

Section 3 – Composition

Ingredients	Component	CAS. No.	Percent by Weight	Percent as Metal
	Ferric (III) Nitrate (Fe(NO ₃) ₃)	10421-48-4	43%	10.0%
	Nitric Acid (HNO ₃)	7697-37-2	0-5%	
	Water (H ₂ O)	7732-18-5	Balance	

Section 4 – First Aid Measures

Inhalation If inhaled: Remove person to fresh air and keep comfortable for breathing. Provide artificial respiration if necessary. Seek medical attention if necessary.

Skin Contact If on skin (or hair): Take off all contaminated clothing. Rinse skin with soap and water for at least 15 minutes.

Eye Contact If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion If swallowed: **Do NOT induce vomiting.** Drink large amounts of water. Never give anything by mouth to an unconscious person. Seek medical attention.

Acute Health Hazards	Harmful if swallowed or inhaled. Destructive to mucous membranes and upper respiratory tract, eyes and skin. Redness and irritation of tissue may occur.
Chronic Health Hazards	Excess iron intake can lead to cell damage, lipid peroxidation and DNA mutagenesis. In severe cases it can lead to hemochromatosis. Other chronic effects can include metabolic syndrome, type 2 diabetes, sarcopenia, non-alcoholic fatty liver disease and Alzheimer's and other neurodegenerative diseases.

Section 5 – Fire Fighting Measures

Suitable Extinguishing Techniques & Equipment	Non-combustible, but can contribute to the intensity of the fire. Wear self-contained breathing apparatus and full protective gear. Use water spray - not water jet
Chemical Hazards From Fire	Under fire conditions, this product behaves as an oxidizer. Contact with oxidizable substances may result in ignition. This material may decompose and produce acrid vapors and oxides of nitrogen and carbon.
Special Fire Fighting Procedures	Use water spray. CO2 or halon may provide limited control.
NFPA Rating	Health - 1 (Slight) Fire - 0 (Least) Reactivity - 1 (Slight) OXY - Oxidizer
Other	Do not allow run-off from fire fighting to enter drains or water courses.







Section 6 – Accidental Release Measure

Personal Precautions	Avoid splashing. Prevent exposure to spilled material with the use of proper PPE.
Protective Equipment	PPE should include gloves, goggles, face shield and level C protective suit.
Containment	Control the flow of product using dikes of soil, sand bags or other commercially available inert sorbent socks or booms.
In Case of Spill	Absorb product with inert absorbent. Avoid splashing or spraying. Contain and pick up spill in diked area. Prevent discharge to sewers or water ways. If uncontaminated, recover and re-use.

Section 7 – Safe Handling & Storage

Precautions for Safe Handling & Storage	Recommended storage above 50°F. Store in a well ventilated cool, dry place out of direct sunlight. Prevent from freezing. Containers should be kept closed and labeled properly. Liquid is an oxidizer and may cause fire with combustibles.
Incompatibility	Avoid contamination with combustible materials. Keep away from fire. Extreme heat may cause decomposing to toxic fumes of nitrogen oxides.

Section 8 – Exposure Controls / Personal Protection

Exposure Limits	Component	Permissible Exposure Limit	Threshold Limit Value	Short Term Exposure Limit	Immediately Dangerous to Life or Health
	Ferric (III) Nitrate (Fe(NO ₃) ₃)	Not Established	Not Established	Not Established	Not Established
	Nitric Acid (HNO ₃)	2 ppm	2 ppm (TWA)	4 ppm	25 ppm
	Water (H ₂ O)	Not Established	Not Established	Not Established	Not Established
Engineering Controls	Provide ventilation sufficient to maintain exposure below PEL/TWA/TLV. Washing facilities should be available.				
Personal Protective Equipment	Eyes	Chemical safety goggles and full face shield			
	Hands	Chemical resistant gloves with gauntlet.			
	Respiratory	None required under normal conditions. Self contained respiratory equipment should be used under spill situations.			
	Protective Clothing	Chemical resistant protective clothing.			
					
	Gloves	Goggles	Face Shield	Protective Clothing	

Section 9 – Physical & Chemical Properties

Appearance and Odor	A reddish to brown liquid. Slight acrid odor.	Specific Gravity	1.455 at 68°F (20°C)
Boiling Point	> 212°F (>100°C) at 1 atmosphere	Molecular Weight	241.86
Freezing Point	No Data Available	Solubility in Water	No Data Available
Vapor Pressure	No Data Available	Evaporative Rate	No Data Available
Weight per Gallon	12.13 lbs./gal	pH	< 1.0
Flash Point	No Data Available	Salt-Out Temp	< 55°F (10.0°C)
Flammability Limits	No Data Available	Auto Ignition Temp	Not Flammable
UEL	No Data Available	LEL	N/A

Section 10 – Stability & Reactivity

Reactivity	Product may act as an oxidizer	
Stability	Product is stable under normal conditions.	
Hazardous Reactions	Hazardous polymerization will not occur.	
Conditions to Avoid	Elevated temperatures may cause container to rupture. Avoid evaporation to dryness.	
Incompatible Materials	Avoid contact with organic or other oxidizable materials. Avoid contact with cyanides, sulfides, sulfites, chlorine or chlorine bleaches, strong alkalis, mild steel, strong reducing agents and finely powdered metals.	
Hazardous Decomposition Products	Extreme heat may cause decomposing to toxic fumes of nitrogen oxides.	

Section 11 – Toxicology Information

Routes of Exposure	Inhalation, ingestion or skin/eye absorption	
Symptoms and Signs of Exposure	Eyes	May cause eye damage
	Skin	Mild irritant.
	Inhalation	of gases or mist causes irritation to the upper respiratory system, including the mucous membranes of the nose, mouth and throat. Coughing, fever, nausea, irritability, spasms, possible pneumonia, apathy, headaches, weakness and chemical burns if inhaled.
	Ingestion	may cause upset stomach.
Long Term Effects	Excess iron intake can lead to cell damage, lipid peroxidation and DNA mutagenesis. In severe cases it can lead to hemochromatosis. Other chronic effects can include metabolic syndrome, type 2 diabetes, sarcopenia, nonalcoholic fatty liver disease and Alzheimer's and other neurodegenerative diseases.	
Carcinogen	The International Agency for Research on Cancer has not classified ferric nitrate for its carcinogenic potential (IARC 1987).	

Section 12 – Ecological Information

Water No Data Available

Section 13 – Disposal Considerations

Waste Disposal must be done in accordance with local, state and federal environmental regulations. Place waste in an appropriate container with correct labeling.

Section 14 – Transport Information

This material is hazardous as defined by 49 CFR 172.101 by the US Department of Transportation

UN ID Number	UN3093
Proper Shipping Name	UN3093, Corrosive Liquid, Oxidizing, N.O.S. (Ferric Nitrate Solution), 8, II
Hazard Class	8 (5.1)
Packing Group	PG II
US DOT Label	Corrosive
Marine Pollutant	No
Emergency Response Guide Number	154



This material is regulated as a Dangerous Good per the IMDG Code

UN ID Number	3093
Proper Shipping Name	Corrosive Liquid, Oxidizing, N.O.S. (Ferric Nitrate Solution)
Hazard Class	8 (5.1)
Packing Group	PG II
Label	Corrosive



This material is regulated as a Dangerous Good per the IATA Code

UN ID Number	3093
Proper Shipping Name	UN3093 Corrosive Liquid, Oxidizing, N.O.S. (Ferric Nitrate Solution)
Hazard Class	8 (5.1)
Packing Group	PG II
Packing Instructions	851 = 1 Liter Or Less 855 = More than 1 Liter (CARGO AIRCRAFT ONLY)
Label	Corrosive, Oxidizer



Section 15 – Regulatory Information

United States - SARA Hazard Category This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and is considered, under applicable definitions, to meet the following categories:

	Fire - No	Pressure - No	Reactive - Yes	Acute - Yes	Chronic - No
--	-----------	---------------	----------------	-------------	--------------

SARA Title III Information This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical	CAS No.	CERCLA RQ (lbs.)	SARA Reporting		
			302	304	313
Ferric Nitrate	10421-48-4	N/A	No	No	Yes
Nitric Acid	7697-37-2	1,000 lbs (453.6 Kg)	Yes	No	Yes

CERCLA / Superfund, 40 CFR Part 117, 302 If this product contains components subject to substances designated as CERCLA reportable Quantity (RQ) Substances, it will be designated in the above table with the RQ value in pounds. If there is a release of RQ Substance to the environment, notification to the National Response Center, Washington DC (800-424-8802) is required.

TSCA Nitric acid, iron(3+) salt (3:1) is on the Active TSCA inventory list.

Section 16 – Other Information

Issue Date 6/21/2019

Date of Revision June 2019 TSCA Statement revised to include the word 'Active'. August 2018 hazard statements and precautionary statements revised format. January 2018 SDS converted to new format and reviewed. October 2017 SDS update to meet GHS Standards. August 2014 TSCA statement revised. February 2013 revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.

Disclaimer The information contained in this SDS refers only to the specific material designated and does not relate to any process or use with any other materials. This information is furnished free of charge and is based on data believed to be accurate and reliable as of the date hereof. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Since actual use is beyond our control, no warranty, expressed or implied, and no liability is assumed by TradeMark Nitrogen Corp. in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents. TradeMark Nitrogen Corp. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.