

SHORECHEM, LLC

MATERIAL SAFETY DATA SHEET

Ferric Nitrate 45 %

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Ferric Nitrate Solution, 45%

OTHER/GENERIC NAMES: Ferric Nitrate Solution, Aqueous, 44-48%

PRODUCT CODES: 109-5390

PRODUCT USE: Industrial

DISTRIBUTOR: ShoreChem, LLC
12 Route 17 North, Suite 309
Paramus, NJ 07652

TELEPHONE: (201) 845-4666
(Monday-Friday, 8:30 AM – 5:00 PM)

CHEMTREC PHONE: 1800-424-9300
(24 Hours/Day, 7 Days/Week)

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME:</u>	<u>CAS NO.</u>	<u>% WT</u>
Ferric nitrate	10421-48-4	45
Water	7732-18-5	Balance

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-to-Know" compliance and for other reasons.

OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard Communication Standard*

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: An odorless brown liquid. Causes skin and eye irritation. May be harmful if swallowed. Not flammable.

POTENTIAL HEALTH HAZARDS

EYES: Liquid will cause strong irritation or corrosion. Mist will probably irritate.

SKIN: Ferric salts are regarded as skin irritants. Liquid contact may cause strong irritation or corrosion of tissue. Mist may cause irritation.

INGESTION: May cause excessive urination and diarrhea. Acid nature of this solution may cause corrosive damage to the gastrointestinal tract. Some extreme cases (e.g., large doses or unusually rapid internal reduction of the ferric ion to ferrous) may show cyanosis (blue skin), falling blood pressure, acidosis, shock, convulsions and possibly death. Dangerous dose is 30 mg/kg of iron. This solution is 11% iron. The estimated fatal dose in man for soluble ferric salts is 30 grams.

INHALATION: Mist of solution may cause local irritation.

DELAYED EFFECTS: None known.

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Ingredients found on one of the three OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
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No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

SKIN: Immediately wash with soap and water, then flush with water until all chemical is removed. Remove contaminated clothing and wash before reuse. Get medical attention for any symptoms.

EYES: Immediately flush with water and continue for 15 minutes, lifting eyelids occasionally to facilitate irrigation. Get medical attention for any symptoms.

INHALATION: Promptly remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing with difficulty, give oxygen, provided a qualified operator is available. Get medical attention.

INGESTION: If conscious and free of convulsions, immediately give 2 to 4 glasses of water or milk, and induce vomiting by touching finger to back of throat. Get medical attention immediately.

ADVICE TO PHYSICIAN: Deferoxamine is a specific antidote for iron poisoning.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT:	Not applicable
FLASH POINT METHOD:	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
UPPER FLAME LIMIT (volume % in air)	Not applicable
LOWER FLAME LIMIT (volume % in air)	Not applicable
FLAME PROPAGATION RATE (solids)	Not applicable

EXTINGUISHING MEDIA:

Dilute with water if flammable materials are present to prevent evaporation to dryness. Flood area with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

On evaporation to dryness, residue is a serious fire hazard (oxidizer).

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Firefighters should wear NIOSH-approved self-contained breathing apparatus to protect against hazardous decomposition products evolved in a fire. Proper eye and skin protection should also be provided. Use water spray to cool fire-exposed containers.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (See section 8 for recommended personal protective equipment.) Promptly wipe or mop material into clean drums; cover and label "corrosive material". Avoid splashing or prolonged skin contact, and keep spill away from flammable material. If flammable materials are present, monitor clean-up operations with CO₂ fire extinguisher. Dike up large spills with soda ash or inert material. Pump into clean drums. Attempt to keep out of sewer.

Spills and releases may have to be reported to Federal and/or local authorities. See section 15 regarding reporting requirements.

SECTION 7: HANDLING AND STORAGE

NORMAL HANDLING: (See section 8 for recommended personal protective equipment.) Avoid breathing mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Observe good housekeeping and hygiene practices.

STORAGE RECOMMENDATIONS:

Store in a cool, dry place, but protect from freezing (store above 60F). If frozen, mix thoroughly after warming to insure that all crystals are re-dissolved. Separate from combustible, organic or other oxidizable materials. Avoid storing on wooden floors. Promptly mop up any spills. Keep containers closed.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide local exhaust if misty conditions exist. Natural ventilation may be adequate in the absence of dusty or misty conditions.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:	Impervious gloves and full impervious clothing, if there is prolonged or repeated contact with liquid. Remove and wash clothing upon contamination.
EYE PROTECTION:	Under normal conditions, wear safety glasses. If there is reasonable probability of contact with liquid, wear chemical safety goggles. Do not wear contact lenses.
RESPIRATORY PROTECTION	Under normal conditions, none required. If misty conditions exist, use NIOSH approved mist respirators.
ADDITIONAL RECOMMENDATIONS	Provide eyewash stations and quick-drench shower facilities convenient to work areas.

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EXPOSURE GUIDELINES:

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Ferric Nitrate	1 mg/m ³ (as Fe)	-----	-----

- ¹ = Limit established by Industry Standard.
² = Workplace Environmental Exposure Level (AIHA).
³ = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Brown Liquid
PHYSICAL STATE:	Liquid
MOLECULAR WEIGHT:	241.87
CHEMICAL FORMULA:	Fe(NO ₃) ₃ + water
ODOR:	Odorless
SPECIFIC GRAVITY (H₂O = 1):	1.46 – 1.48 @17.5 °C
SOLUBILITY IN WATER (weight %):	Complete
pH:	Estimated 2 (for 0.1 molar aqueous solution)
BOILING POINT:	>100C
MELTING POINT:	Not applicable
VAPOR PRESSURE:	Not applicable
VAPOR DENSITY (air= 1.0):	Not applicable
EVAPORATION RATE:	Not applicable
% VOLATILES:	Not applicable
FLASH POINT:	Not applicable

(Flash point method and additional flammability data are found in Section 5.)

COMPARED TO: Not Applicable

SECTION 10: STABILITY AND REACTIVITY

NORMALLY STABLE/(CONDITIONS TO AVOID):

Stable under normal conditions. Avoid evaporation to dryness. Residue will decompose below 100C, yielding toxic nitrogen oxide gases. Prior to and during decomposition, the solid is a serious fire hazard (oxidizer).

INCOMPATIBILITIES:

Oxidizable materials, including sulfur and organic materials. Dimethyl sulfoxide. Water-reactive materials, such as oleum, react exothermically with this solution.

HAZARDOUS DECOMPOSITION PRODUCTS:

Would expect nitrogen oxide gases to be evolved in a fire.

HAZARDOUS POLYMERIZATION:

Will not occur.

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SECTION 11: TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

LD₅₀ (oral-rat): 3250 mg/kg – dry, nonahydrate form

DELAYED (SUBCHRONIC AND CHRONIC EFFECTS)

Data Not Available

OTHER DATA:

None.

SECTION 12: ECOLOGICAL INFORMATION

No Data Available.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? Yes If yes, the RCRA ID number is: D002

OTHER DISPOSAL CONSIDERATIONS:

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

SECTION 14: TRANSPORT INFORMATION

US DOT HAZARD CLASS: 8 PG II
US DOT ID NUMBER: UN 3264
PROPER SHIPPING NAME: Corrosive liquid, acidic, inorganic, n.o.s. (ferric nitrate)

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

SECTION 15: REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: All ingredients listed on the TSCA Inventory
OTHER TSCA ISSUES: None

SARA TITLE III/ CERCLA

"Reportable/ Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (LB)</u>	<u>SARA EHS TPQ(LB)</u>
Ferric Nitrate	1000 lbs.	

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Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (800) 424-8803 and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate, delayed

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements. CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME

COMMENT

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME

WEIGHT%

COMMENT

No ingredients listed in this section.

ADDITIONAL REGULATORY INFORMATION:

None listed.

WHMIS CLASSIFICATION (CANADA):

Not determined

FOREIGN CHEMICAL CONTROL INVENTORY STATUS

Listed on Canadian DSL and EU EINECS.

SECTION 16: OTHER INFORMATION

CURRENT ISSUE DATE: OCTOBER 11, 2005

PREVIOUS ISSUE DATE: JANUARY 1, 2005

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

New Format

OTHER INFORMATION: Not for Food or Drug Use.

All information, statements, data, advice and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness or a particular purpose or any other matter, including, including, without limitation, that the practice of application of any such information is free of patent infringement or other intellectual property misappropriation. ShoreChem, LLC is not engaged in the business of providing technical, operational, engineering or safety information for a fee, and therefore, any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill and experience in the chemical industry. ShoreChem, LLC shall not be responsible or liable for the use, application or implementation of the information, provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors, and agents.

Date Created	Created By	Replaces	Area	Product/ Process	Special
10/10/05	JD	01/01/05	MSDS	ShoreChem	SRE