



## Safety Data Sheet

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** Ferric Ammonium Sulphate Solution R5  
EP Reagent 1037704

**Product Number:** R3058500

**Other Identifying Product Numbers:** R3058500-500B

#### 1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

#### 1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Ricca Chemical Company

**Address:** 448 West Fork Drive  
Arlington, TX 76012 USA

**Telephone:** 888-467-4222

#### 1.4. Emergency Telephone Number (24 hr)

CHEMTREC (USA) 800-424-9300  
CHEMTREC (International) 1+ 703-527-3887

## Safety Data Sheet

### SECTION 2: Hazard(s) Identification

#### 2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statement	Precautionary Statements
Acute Toxicity - Inhalation	Category 1	H330	P260, P271, P285, P304+P340, P310, P320, P403+P233, P405, P501
Skin Corrosion / Irritation	Category 1A	H314	P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501
Eye Damage / Irritation	Category 1	H318	P280, P305+P351+P338, P310
Germ Cell Mutagenicity	Category 2	H341	P201, P202, P280, P308+P313, P405, P501
Specific Target Organs/Systemic Toxicity Following Single Exposure	Category 1	H370	P260, P264, P270, P307+P311, P321, P405, P501
Specific Target Organs/Systemic Toxicity Following Repeated Exposure	Category 1	H372	P260, P264, P270, P314, P501
Aspiration Hazard	Category 1	H304	P301+P310, P331, P405, P501
Corrosive to Metals	Category 1	H290	P234, P390, P406
Hazardous to the Aquatic Environment (Chronic)	Category 3	H402	P273, P501

#### 2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H290	May be corrosive to metals.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.

## Safety Data Sheet

### Precautionary Statements:

Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original container.
P260	Do not breathe fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311	IF exposed: Call a POISON CENTER or physician.
P308+P313	IF exposed or concerned: Get medical attention.
P310	Immediately call a POISON CENTER or physician.
P314	Get medical attention if you feel unwell.
P320	Specific treatment is urgent (Wash areas of contact with water immediately).
P321	Specific treatment (Wash areas of contact with water immediately).
P331	Do NOT induce vomiting.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

### 2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

### 2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.



## Safety Data Sheet

### SECTION 3: Composition / Information on Ingredients

#### 3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H <sub>2</sub> O	18.01 g/mol	7732-18-5	42.80%
Nitric Acid	HNO <sub>3</sub>	63.01 g/mol	7697-37-2	33.39%
Ferric Ammonium Sulfate Dodecahydrate	NH <sub>4</sub> Fe(SO <sub>4</sub> ) <sub>2</sub> ·12H <sub>2</sub> O	482.19 g/mol	7783-83-7	23.81%

### SECTION 4: First-Aid Measures

#### 4.1. General First Aid Information

**Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. May cause irritation, redness, pain, and tearing.

**Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. May cause irritation, redness and pain. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.

**Ingestion:** IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Do not induce vomiting. Give large quantity of water. Call a physician immediately.

#### 4.2. Most Important Symptoms and Effects, Acute and Delayed

DANGER! Causes severe burns. Corrosive Liquid. May be fatal if swallowed. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor. If swallowed, do not induce vomiting. Dilute with water and call a physician. Wash areas of contact with plenty of water. Potential symptoms of overexposure are irritation of the eyes, mucous membranes and skin, dental erosion, bronchitis, pneumonitis, delayed pulmonary edema. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause irritation, redness and pain. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.

#### 4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment is urgent (Wash areas of contact with water immediately). Specific treatment (Wash areas of contact with water immediately).

### SECTION 5: Fire-Fighting Measures

#### 5.1. Extinguishing Media

Does not burn. Use extinguishing media appropriate for surrounding fire.

#### 5.2. Specific Hazards Arising from the Substance or Mixture

Strong oxidizer. Contact of concentrated nitric acid with combustible materials may increase the hazard from fire and may lead to an explosion. Decomposes at fire temperature with release of oxides of nitrogen. Releases hydrogen gas on contact with many metals.



## Safety Data Sheet

### 5.3. Special Protective Equipment for Firefighters

Wear special protective clothing and positive pressure self-contained breathing apparatus. Butyl rubber, natural rubber, Neoprene, nitrile rubber, or polyvinyl alcohol barrier recommended.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

### 6.2. Cleanup and Containment Methods and Materials

Releases may require isolation or evacuation. Approach release from upwind. Stop or control the leak, if this can be done without undue risk. Use water spray to cool and disperse vapors and protect personnel. Avoid solid stream on pooled liquids. Prompt cleanup and removal are necessary. Control runoff and isolate discharged material for proper disposal.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

Store in corrosive resistant container with a resistant inner liner. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials.

## SECTION 8: Exposure Controls / Personal Protection

### 8.1. Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Ferric Ammonium Sulfate Dodecahydrate (7783-83-7)	TLV-TWA	USA	1 mg/m <sup>3</sup> TWA (as Fe)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TWA	USA	2 ppm TWA 5 mg/m <sup>3</sup> TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-STEL	USA	4 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TLV-TWA	USA	2 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

### 8.2. Exposure Controls

**Engineering Controls:** Use only outdoors or in a well-ventilated area. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

**Respiratory Protection:** In case of inadequate ventilation wear respiratory protection. Normal room ventilation is adequate. If necessary, wear a respirator equipped with an acid gas cartridge.

**Skin Protection:** Wear protective gloves and eye protection. Chemical resistant gloves.

**Eye Protection:** Wear protective gloves and eye protection. Safety glasses or goggles.



## Safety Data Sheet

### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection. Normal room ventilation is adequate. If necessary, wear a respirator equipped with an acid gas cartridge. Chemical resistant gloves. Safety glasses or goggles.

## SECTION 9: Physical and Chemical Properties

### 9.1. Basic Physical and Chemical Properties

**Appearance:** Amber liquid

**Physical State:** Liquid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** Data not available.

**Melting/Freezing Point:** Data not available.

**Initial Boiling Point /Range:** Approximately 101°C - Approximately 101°C

**Flash Point:** Data not available.

**Evaporation Rate:** Data not available.

**Flammability:** Data not available.

**Flammability/Explosive Limits:** Data not available.

**Vapor Pressure:** Data not available.

**Vapor Density:** Data not available.

**Relative Density:** 1.26

**Solubility:** Miscible

**Partition Coefficient (n-Octanol/Water):** Data not available.

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

### 10.2. Possibility of Hazardous Reactions

Data not available.

### 10.3. Conditions to Avoid and Incompatible Materials

Keep only in original container. Strong bases, metallic powders, Carbides, Hydrogen Sulfide, Turpentine, wood and combustible organics.



## Safety Data Sheet

### 10.4. Hazardous Decomposition Products

Will not occur.

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

#### Acute Toxicity - Oral Exposure:

Not applicable.

#### Acute Toxicity - Dermal Exposure:

Not applicable.

#### Acute Toxicity - Inhalation Exposure:

Fatal if inhaled. Do not breathe fumes, mist, vapors, or spray. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment is urgent (Wash areas of contact with water immediately). Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Acute Toxicity - Other Information:

LDLo, Oral, Human: 430 mg/kg (Nitric Acid), details of toxic effects not reported other than lethal dose value.

#### Skin Corrosion and Irritation:

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Serious Eye Damage and Irritation:

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

#### Respiratory Sensitization:

Not applicable.

#### Skin Sensitization:

Not applicable.

#### Germ Cell Mutagenicity:

Suspected of causing genetic defects. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Carcinogenicity:

Not applicable.



## Safety Data Sheet

**Reproductive Toxicity:**

Not applicable.

**Specific Target Organ Toxicity from Single Exposure:**

Causes damage to organs. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific Target Organ Toxicity from Repeated Exposure:**

Causes damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

**Aspiration Hazard:**

May be fatal if swallowed and enters airways. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Additional Toxicology Information:**

Data not available.

### SECTION 12: Ecological Information

**12.1. Ecotoxicity**

Harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

**12.2. Persistence and Degradability**

Data not available.

**12.3. Bioaccumulative Potential**

Data not available.

**12.4. Mobility in Soil**

Data not available.

**12.5. Other Adverse Ecological Effects**

Data not available.

### SECTION 13: Disposal Considerations

**13.1. Waste Treatment Methods**

Data not available.





## Safety Data Sheet

### SECTION 14: Transportation Information

#### 14.1. Transportation by Land - Department of Transportation (DOT, United States of America)

**Sizes:** 500 mL

**UN Number:** UN3264

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid)

**Hazard Class:** 8

**Packing Group:** II

**Hazard Placard Labels:**



**Sizes:**

**UN Number:**

**Proper Shipping Name:**

**Hazard Class:**

**Packing Group:**

**Hazard Placard Labels:**

#### 14.2. Transportation by Air - International Air Transport Association (IATA)

**Sizes:** 500 mL

**UN Number:** UN3264

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid)

**Hazard Class:** 8

**Packing Group:** II

**Hazard Placard Labels:**



### SECTION 15: Regulatory Information

#### 15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.



## Safety Data Sheet

### 15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Nitric Acid (CAS # 7697-37-2): 1000 lb EPCRA RQ

Nitric Acid (CAS # 7697-37-2): 1000 lb TPQ

### 15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Nitric Acid (CAS # 7697-37-2): 1000 lb final RQ; 454 kg final RQ

### 15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Nitric Acid (CAS # 7697-37-2): 1.0 % de minimis concentration

### 15.5. Massachusetts Right-to-Know Substance List

Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous

### 15.6. Pennsylvania Right-to-Know Hazardous Substances

Nitric Acid (CAS # 7697-37-2): Environmental hazard

Nitric Acid (CAS # 7697-37-2): Present

Water (CAS # 7732-18-5): Present

Ferric Ammonium Sulfate Dodecahydrate (CAS # 7783-83-7): Environmental hazard

Ferric Ammonium Sulfate Dodecahydrate (CAS # 7783-83-7): Present

### 15.7. New Jersey Worker and Community Right-to-Know Components

Nitric Acid (CAS # 7697-37-2): corrosive; reactive - second degree

Nitric Acid (CAS # 7697-37-2): sn 1356

Nitric Acid (CAS # 7697-37-2): SN 1356 500 lb TPQ

Nitric Acid (CAS # 7697-37-2): sn 3722

Nitric Acid (CAS # 7697-37-2): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

### 15.8. California Proposition 65

Not listed.

### 15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Nitric Acid (CAS # 7697-37-2): Present (DSL)

Water (CAS # 7732-18-5): Present (DSL)

Ferric Ammonium Sulfate Dodecahydrate (CAS # 7783-83-7): Present (DSL)

### 15.10. United States of America Toxic Substances Control Act (TSCA) List

Nitric Acid (CAS # 7697-37-2): Present

Water (CAS # 7732-18-5): Present

Ferric Ammonium Sulfate Dodecahydrate (CAS # 7783-83-7): Present

### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Not listed.



## Safety Data Sheet

### SECTION 16: Other Information

#### 16.1. Full Text of Hazard Statements and Precautionary Statements

May be corrosive to metals. May be fatal if swallowed and enters airways. Causes severe skin burns and eye damage. Causes serious eye damage. Fatal if inhaled. Suspected of causing genetic defects. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. Harmful to aquatic life.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

IF SWALLOWED: Immediately call a POISON CENTER or physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed: Call a POISON CENTER or physician. Get medical attention if you feel unwell. Specific treatment is urgent (Wash areas of contact with water immediately). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Dispose of contents in accordance with local, state, federal and international regulations.

#### 16.2. Miscellaneous Hazard Classes

**Canadian Carcinogenicity Hazard Class:** Not Applicable.

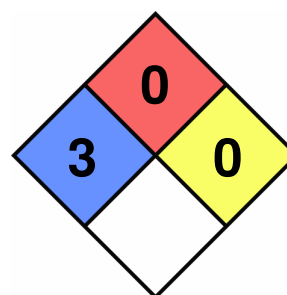
**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.

Not Applicable.

#### 16.3. National Fire Protection Association (NFPA) Rating

**Health:** 3  
**Flammability:** 0  
**Reactivity:** 0  
**Special Hazard:**





## Safety Data Sheet

### 16.4. Document Revision

**Last Revision Date:** 5/1/2015

### DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.