SECTION 1: Identification

1.1. Identification
Product form: Mixtures
Product name: Ferrous Ammonium Sulfate, 0.1N (0.1M)
Product code: LC14500

1.2. Recommended use and restrictions on use
Use of the substance/mixture: For laboratory and manufacturing use only.
Recommended use: Laboratory chemicals
Restrictions on use: Not for food, drug or household use

1.3. Supplier
LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number
Emergency number: CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS-US classification
Skin corrosion/irritation Category 1B H314 Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1 H318 Causes serious eye damage

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements
GHS-US labeling
Hazard pictograms (GHS-US):

Signal word (GHS-US): Danger
Hazard statements (GHS-US): H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US):
P260 - Do not breathe mist, vapors, spray
P264 - Wash exposed skin thoroughly after handling
P280 - Wear protective gloves, eye protection
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations
If inhaled: Remove person to fresh air and keep comfortable for breathing

2.3. Other hazards which do not result in classification
Other hazards not contributing to the classification: None.

2.4. Unknown acute toxicity (GHS US)
Not applicable
**SECTION 3: Composition/Information on ingredients**

3.1. Substances

Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>94.08</td>
<td>Not classified</td>
</tr>
<tr>
<td>Ferrous Ammonium Sulfate Hexahydrate</td>
<td>(CAS-No.) 7783-85-9</td>
<td>3.92</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td>(CAS-No.) 7664-93-9</td>
<td>2</td>
<td>Skin Corr. 1A, H314 Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

**SECTION 4: First-aid measures**

4.1. Description of first aid measures

First-aid measures general
Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact
Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

First-aid measures after eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion
Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects: Causes severe skin burns and eye damage.

Symptoms/effects after inhalation: May cause respiratory irritation.

Symptoms/effects after skin contact: Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact: Causes serious eye damage.


Chronic symptoms: Affection/discolouration of the teeth. Cracking of the skin. Inflammation/damage of the eye tissue.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

**SECTION 5: Fire-fighting measures**

5.1. Suitable (and unsuitable) extinguishing media


Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard: Not flammable.

Explosion hazard: Not applicable.

Reactivity: Thermal decomposition generates: Corrosive vapors.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

**SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment: Safety glasses. Gloves.

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.
Emergency procedures: Ventilate area.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray.

Hygiene measures: Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Comply with applicable regulations.
Storage conditions: Keep only in the original container in a cool, well ventilated place away from: incompatible materials. Keep container closed when not in use.
Incompatible products: Strong bases. Strong acids.
Incompatible materials: Sources of ignition. Direct sunlight.
Special rules on packaging: Protect from light.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (mg/m³)</th>
<th>NIOSH REL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Ammonium Sulfate Hexahydrate (7783-85-9)</td>
<td>1 mg/m³ Iron salts, soluble, as Fe</td>
<td>1 mg/m³ Iron salts, soluble, as Fe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (mg/m³)</th>
<th>IDLH (mg/m³)</th>
<th>NIOSH REL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric Acid (7664-93-9)</td>
<td>0.2 mg/m³ (Sulfuric acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Thoracic fraction)</td>
<td>1 mg/m³</td>
<td>15 mg/m³</td>
<td>1 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>US IDLH (mg/m³)</th>
<th>NIOSH REL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (7732-18-5)</td>
<td>15 mg/m³</td>
<td>1 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Hand protection:
Wear protective gloves.
Ferrous Ammonium Sulfate, 0.1N (0.1M)
Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

**Eye protection:**
Chemical goggles or face shield

**Skin and body protection:**
Wear suitable protective clothing

**Respiratory protection:**
Respiratory protection not required in normal conditions

**Other information:**
Do not eat, drink or smoke during use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>light green</td>
</tr>
<tr>
<td>Color</td>
<td>Green</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None</td>
</tr>
</tbody>
</table>

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Thermal decomposition generates: Corrosive vapors.

#### 10.2. Chemical stability

Not established.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Direct sunlight. Incompatible materials.

#### 10.5. Incompatible materials

Strong oxidizers. Strong bases.
**Ferrous Ammonium Sulfate, 0.1N (0.1M)**

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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### 10.6. Hazardous decomposition products

Gaseous ammonia. Sulfur compounds. Thermal decomposition generates: Corrosive vapors.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

**Likely routes of exposure**: Skin and eye contact

**Acute toxicity**: Not classified

<table>
<thead>
<tr>
<th>Ferrous Ammonium Sulfate Hexahydrate (7783-85-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sulfuric Acid (7664-93-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**: Causes severe skin burns and eye damage.

**Serious eye damage/irritation**: Causes serious eye damage.

**Respiratory or skin sensitization**: Not classified

**Germ cell mutagenicity**: Not classified

Based on available data, the classification criteria are not met

**Carcinogenicity**: Not classified

**Additional information**

Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans

<table>
<thead>
<tr>
<th>IARC group</th>
<th>National Toxicology Program (NTP) Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Carcinogenic to humans</td>
<td>2 - Known Human Carcinogens</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**: Not classified

Based on available data, the classification criteria are not met

**Specific target organ toxicity – single exposure**: Not classified

**Specific target organ toxicity – repeated exposure**: Not classified

**Aspiration hazard**: Not classified

**Potential Adverse human health effects and symptoms**: Based on available data, the classification criteria are not met.

**Symptoms/effects after inhalation**: May cause respiratory irritation.

**Symptoms/effects after skin contact**: Caustic burns/corrosion of the skin.

**Symptoms/effects after eye contact**: Causes serious eye damage.

**Symptoms/effects after ingestion**: Nausea. Vomiting. Diarrhoea.

**Chronic symptoms**: Affection/discolouration of the teeth. Cracking of the skin. Inflammation/damage of the eye tissue.

---

### SECTION 12: Ecological information

#### 12.1. Toxicity

<table>
<thead>
<tr>
<th>Sulfuric Acid (7664-93-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish</td>
</tr>
<tr>
<td>EC50 Daphnia</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Ferrous Ammonium Sulfate, 0.1N (0.1M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
</tbody>
</table>
Ferrous Ammonium Sulfate, 0.1N (0.1M)

Safety Data Sheet

12.3. Bioaccumulative potential

Ferrous Ammonium Sulfate, 0.1N (0.1M)
Bioaccumulative potential: Not established.

Ferrous Ammonium Sulfate Hexahydrate (7783-85-9)
Bioaccumulative potential: Not established.

Sulfuric Acid (7664-93-9)
Log Pow: -2.2 (Estimated value)
Bioaccumulative potential: Bioaccumulation: not applicable.

Water (7732-18-5)
Bioaccumulative potential: Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming: No known effects from this product.

GWPmix comment: No known effects from this product.

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description: UN3264 Corrosive liquid, acidic, inorganic, n.o.s., 8, II

UN-No. (DOT): UN3264

Proper Shipping Name (DOT): Corrosive liquid, acidic, inorganic, n.o.s.

Transport hazard class(es) (DOT): 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT): II - Medium Danger

Hazard labels (DOT): 8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx): 202

DOT Packaging Bulk (49 CFR 173.xxx): 242

DOT Symbols: G - Identifies PSN requiring a technical name
Ferrous Ammonium Sulfate, 0.1N (0.1M) Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations


IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.

T11 - 6 178.274(d)(2) Normal............. 178.275(d)(3)

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

DOT Vessel Stowage Location : B - (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”

Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Sulfuric Acid, ACS CAS-No. 7664-93-9 2%

Ferrous Ammonium Sulfate Hexahydrate (7783-85-9)

RQ (Reportable quantity, section 304 of EPA's List of Lists) 1000 lb

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

Sulfuric Acid (7664-93-9)

RQ (Reportable quantity, section 304 of EPA's List of Lists) 1000 lb

SARA Section 302 Threshold Planning Quantity (TPQ) 1000 lb

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

15.2. International regulations

CANADA

Ferrous Ammonium Sulfate Hexahydrate (7783-85-9)

Not listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations
Ferrous Ammonium Sulfate, 0.1N (0.1M)
Safety Data Sheet

Ferrous Ammonium Sulfate Hexahydrate (7783-85-9)
Not listed on the Canadian IDL (Ingredient Disclosure List)

Sulfuric Acid (7664-93-9)
Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)

15.3. US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information
Revision date : 06/28/2017
Other information : None.
Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>H314</th>
<th>Causes severe skin burns and eye damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating
Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 0 Minimal Hazard - Materials that will not burn
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : B
B - Safety glasses, Gloves

SDS US LabChem
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