SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

- **Product form**: Mixture
- **Product name**: Ammonium Hydroxide Solution 29.4%
- **Product code**: M11005

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

- **JR Simplot Company**
- **Boise, ID 83707**
- **T 1-208-336-2110**

1.4. Emergency telephone number

- **Emergency number**: CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

- Acute Tox. 4 (Oral) H302
- Skin Corr. 1A H314

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

- **Signal word (GHS-US)**: Danger
- **Hazard pictograms (GHS-US)**: ![GHS05](image1.png) ![GHS07](image2.png)
- **Hazard statements (GHS-US)**: H302 - Harmful if swallowed; H314 - Causes severe skin burns and eye damage
- **Precautionary statements (GHS-US)**: P260 - Do not breathe dust/fume/gas/mist/vapors/spray; P264 - Wash... thoroughly after handling; P270 - Do not eat, drink or smoke when using this product; P280 - Wear protective gloves/protective clothing/eye protection/face protection; P301+P312 - If swallowed: Call a poison center/doctor/... if you feel unwell; 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/shower; 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; P310 - Immediately call a poison center/doctor/...; P321 - Specific treatment (see ... on this label); P330 - Rinse mouth; P363 - Wash contaminated clothing before reuse; P405 - Store locked up; P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available
**SECTION 3: Composition/information on ingredients**

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>(CAS No) 7732-18-5</td>
<td>65 - 90</td>
<td>Not classified</td>
</tr>
<tr>
<td>ammonia, 10%&lt;=conc&lt;25%, aqueous solutions</td>
<td>(CAS No) 1336-21-6</td>
<td>10 - 35</td>
<td>Skin Corr. 1B, H314 Aquatic Acute 1, H400</td>
</tr>
</tbody>
</table>

**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: Assure fresh air breathing. Allow the victim to rest.

First-aid measures after skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

**SECTION 5: Firefighting measures**

5.1. Extinguishing media


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

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

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

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.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Keep container closed when not in use.

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

**SECTION 8: Exposure controls/personal protection**

8.1. Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TWA (ppm)</th>
<th>ACGIH STEL (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia, 10%&lt;=conc&lt;25%, aqueous solutions (1336-21-6)</td>
<td>25 ppm</td>
<td>25 ppm</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

- Personal protective equipment: Avoid all unnecessary exposure.
- Hand protection: Wear protective gloves.
- Eye protection: Chemical goggles or safety glasses.
- Respiratory protection: Wear appropriate mask.
- 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

- Physical state: Liquid
- Appearance: Clear, colorless liquid.
- Color: Colourless
- Odor: Pungent odor
- Odor threshold: No data available
- pH: > 13
- Relative evaporation rate (butyl acetate=1): No data available
- Melting point: No data available
- Freezing point: No data available
- Boiling point: -77 °C Not Stated
- Flash point: No data available
- Auto-ignition temperature: No data available
- Decomposition temperature: No data available
- Flammability (solid, gas): No data available
- Vapor pressure: No data available
- Relative vapor density at 20 °C: No data available
- Relative density: No data available
- Density: 0.9 g/m³
- Solubility: Complete.
  - Water: Solubility in water of component(s) of the mixture:
- Log Pow: No data available
- Log Kow: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosive properties: No data available
Ammonium Hydroxide Solution 29.4%
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<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.2.</td>
<td>Other information</td>
</tr>
<tr>
<td>No additional information available</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity
No additional information available

#### 10.2. Chemical stability
Stable. Not established.

#### 10.3. Possibility of hazardous reactions
Not established.

#### 10.4. Conditions to avoid
Heat. Electrical equipment and fixtures which are not vapor-proof. Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials
Contact with mercury, chlorine, bromine, iodine, calcium, silver oxide, or hypochlorite can form explosive compounds. Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Toxicological Effects</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Harmful if swallowed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ammonium Hydroxide Solution 29.4%</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. pH: > 13

Serious eye damage/irritation: Not classified pH: > 13

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified Based on available data, the classification criteria are not met

Carcinogenicity: Not classified

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 Based on available data, the classification criteria are not met

Aspiration hazard: Not classified Based on available data, the classification criteria are not met

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

### SECTION 12: Ecological information

#### 12.1. Toxicity
No additional information available

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Ammonium Hydroxide Solution 29.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
</tbody>
</table>
Ammonium Hydroxide Solution 29.4%

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|-----------------------------|--------------------------------------------------|

| Water (7732-18-5) | Persistence and degradability | Not established. |

12.3. Bioaccumulative potential

| Ammonium Hydroxide Solution 29.4% | Bioaccumulative potential | Not established. |

<table>
<thead>
<tr>
<th>ammonia, 10%&lt;=conc&lt;25%, aqueous solutions (1336-21-6)</th>
<th>Log Pow</th>
<th>-1.14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Bioaccumulation: not applicable. Not established.</td>
<td></td>
</tr>
</tbody>
</table>

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

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

<table>
<thead>
<tr>
<th>Effect on ozone layer</th>
<th>No additional information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on the global warming</td>
<td>No known ecological damage caused by this product.</td>
</tr>
<tr>
<td>Other information</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

SECTION 13: Disposal considerations

13.1. Waste treatment methods

<table>
<thead>
<tr>
<th>Waste disposal recommendations</th>
<th>Dispose in a safe manner in accordance with local/national regulations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - waste materials</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

SECTION 14: Transport information

In accordance with DOT

<table>
<thead>
<tr>
<th>Transport document description</th>
<th>UN2672 Ammonia solutions, 8, III</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No.(DOT)</td>
<td>2672</td>
</tr>
<tr>
<td>DOT NA no.</td>
<td>UN2672</td>
</tr>
<tr>
<td>DOT Proper Shipping Name</td>
<td>Ammonia solutions</td>
</tr>
<tr>
<td>Department of Transportation (DOT) Hazard Classes</td>
<td>8 - Class 8 - Corrosive material 49 CFR 173.136</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
<td>8 - Corrosive</td>
</tr>
</tbody>
</table>

Packing group (DOT) | III - Minor Danger |
| DOT Special Provisions (49 CFR 172.102) | IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31H21 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). IP8 - Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31H21) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 C (131 F). T7 - 4 178.274(d)(2) Normal............... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. |
| DOT Packaging Exceptions (49 CFR 173.xxx) | 154 |
| DOT Packaging Non Bulk (49 CFR 173.xxx) | 203 |
Ammonium Hydroxide Solution 29.4%

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DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”,52 - Stow “separated from” acids,85 - Under deck stowage must be in mechanically ventilated space

Additional information

Other information : No supplementary information available.

ADR

Transport document description : 
Transport by sea
No additional information available
Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Ammonium Hydroxide Solution 29.4%
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

Water CAS No 7732-18-5 C>=65.00% ; C<=90.00%

ammonia, 10%<=conc<25%, aqueous solutions (1336-21-6)
Listed on United States SARA Section 313
RQ (Reportable quantity, section 304 of EPA's List of Lists) : 1000 lb

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Classification according to Directive 67/548/EEC or 1999/45/EC
Not classified

15.2.2. National regulations
No additional information available

15.3. US State regulations

ammonia, 10%<=conc<25%, aqueous solutions (1336-21-6)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information
Ammonium Hydroxide Solution 29.4%
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<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Other information</td>
<td>None.</td>
</tr>
</tbody>
</table>

### Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral) Category 4</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation Category 1A</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation Category 1B</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

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