## SECTION 1: Identification

### 1.1. Identification
- **Product form**: Mixture
- **Product name**: Ammonium Hydroxide, 5% v/v (1+19)
- **Product code**: LC11190

### 1.2. Relevant identified uses of the substance or mixture and uses advised against
- **Use of the substance/mixture**: For laboratory and manufacturing use only

### 1.3. Details of the supplier of the safety data sheet
- **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

<table>
<thead>
<tr>
<th>GHS-US classification</th>
<th>H statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation Category 2A</td>
<td>H319</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment - Acute Hazard Category 3</td>
<td>H402</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

### 2.2. Label elements

- **GHS-US labeling**
  - **Hazard pictograms (GHS-US)**: ![Exclamation Mark](image)
  - **Signal word (GHS-US)**: Warning
  - **Hazard statements (GHS-US)**: H315 - Causes skin irritation, H319 - Causes serious eye irritation, H402 - Harmful to aquatic life
  - **Precautionary statements (GHS-US)**: P264 - Wash exposed skin thoroughly after handling, P273 - Avoid release to the environment, P280 - Wear protective gloves, eye protection, P302 + P352 - IF ON SKIN: Wash with plenty of soap and water, P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing, P332 + P313 - If skin irritation occurs: Get medical advice/attention, P337 + P313 - If eye irritation persists: Get medical advice/attention, P362 - Take off contaminated clothing and wash it before reuse, P501 - Dispose of contents/container to comply with local, state and federal regulations

### 2.3. Other hazards
- **Other hazards not contributing to the classification**: None under normal conditions.

### 2.4. Unknown acute toxicity (GHS US)
- **Not applicable**

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance
- **Not applicable**
Ammonium Hydroxide, 5% v/v (1+19)
Safety Data Sheet

3.2. Mixture

<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>98.76</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
| Ammonium Hydroxide, ACS     | (CAS No) 1336-21-6| 1.24 | Acute Tox. 4 (Oral), H302  
Acute Tox. 4 (Inhalation:vapour), H332  
Skin Corr. 1C, H314  
Eye Dam. 1, H318  
Aquatic Acute 1, H400 |

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 : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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 after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

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

Obtain medical assistance.

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

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. Avoid release to the environment.

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.
Ammonium Hydroxide, 5% v/v (1+19)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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.

Hygiene measures: Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep cool. Keep container closed when not in use.

Incompatible products: Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Ammonium Hydroxide, ACS (1336-21-6)</th>
<th>ACGIH ACGIH TWA (mg/m³)</th>
<th>17 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH ACGIH STEL (mg/m³)</td>
<td>24 mg/m³</td>
<td></td>
</tr>
<tr>
<td>OSHA OSHA PEL (TWA) (mg/m³)</td>
<td>35 mg/m³</td>
<td></td>
</tr>
<tr>
<td>OSHA OSHA PEL (TWA) (ppm)</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>IDLH US IDLH (ppm)</td>
<td>300 ppm</td>
<td></td>
</tr>
<tr>
<td>NIOSH NIOSH REL (TWA) (mg/m³)</td>
<td>18 mg/m³</td>
<td></td>
</tr>
<tr>
<td>NIOSH NIOSH REL (TWA) (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>NIOSH NIOSH REL (STEL) (mg/m³)</td>
<td>27 mg/m³</td>
<td></td>
</tr>
<tr>
<td>NIOSH NIOSH REL (STEL) (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
</tbody>
</table>

Water (7732-18-5): Not applicable

8.2. Exposure controls

Appropriate engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.

Personal protective equipment: Avoid all unnecessary exposure. Gloves. Safety glasses.

Hand protection: Wear protective gloves.

Eye protection: Chemical goggles or safety glasses.

Skin and body protection: Wear suitable protective clothing.

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

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Ammonia odour</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>
</tbody>
</table>
Ammonium Hydroxide, 5% v/v (1+19)
Safety Data Sheet

Flash point: No data available
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): Non flammable.
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: No data available
Specific gravity / density: 0.99 g/ml
Solubility: No data available
Log Pow: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity, kinematic: 1.03 cSt
Viscosity, dynamic: No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials
Strong acids.

10.6. Hazardous decomposition products
Gaseous ammonia.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure: Inhalation; Skin and eye contact
Acute toxicity: Not classified

**Ammonium Hydroxide, ACS (1336-21-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>350 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>350.000 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>10.714 mg/l/4h</td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>≥ 90000 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>90000.000 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Ammonium Hydroxide, 5% v/v (1+19)
Safety Data Sheet

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/injuries after skin contact: Causes skin irritation.
Symptoms/injuries after eye contact: Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - water: Harmful to aquatic life.

<table>
<thead>
<tr>
<th>Ammonium Hydroxide, ACS (1336-21-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>0.16 - 1.1 mg/l (LC50; 96 h)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>2.08 mg/l (LC50; 48 h)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Ammonium Hydroxide, 5% v/v (1+19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Not established.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ammonium Hydroxide, ACS (1336-21-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Readily biodegradable in water. Ozonation in water. Biodegradable in the soil. No test data on mobility of the components available. Ozonation in the air.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Not established.</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ammonium Hydroxide, 5% v/v (1+19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td>Not established.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ammonium Hydroxide, ACS (1336-21-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
</tr>
<tr>
<td>-1.3</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td>Bioaccumulation: not applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td>Not established.</td>
</tr>
</tbody>
</table>

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. Waste treatment methods
Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated
Ammonium Hydroxide, 5% v/v (1+19)
Safety Data Sheet

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.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Hydroxide, ACS</td>
<td>1336-21-6</td>
<td>1.24%</td>
</tr>
</tbody>
</table>

15.2. International regulations

CANADA

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>WHMIS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Hydroxide, 5% v/v (1+19)</td>
<td>Class D Division 2 Subdivision B - Toxic material causing other toxic effects</td>
</tr>
<tr>
<td>Ammonium Hydroxide, ACS (1336-21-6)</td>
<td>Class E - Corrosive Material</td>
</tr>
<tr>
<td>Water (7732-18-5)</td>
<td>Uncontrolled product according to WHMIS classification criteria</td>
</tr>
</tbody>
</table>

EU-Regulations
No additional information available

National regulations
No additional information available

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 : 11/16/2016
Other information : None.

Full text of H-phrases: see section 16:

- **H302** Harmful if swallowed
- **H314** Causes severe skin burns and eye damage
- **H315** Causes skin irritation
- **H318** Causes serious eye damage
- **H319** Causes serious eye irritation
- **H332** Harmful if inhaled
- **H400** Very toxic to aquatic life
- **H402** Harmful to aquatic life

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
Ammonium Hydroxide, 5% v/v (1+19)
Safety Data Sheet

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible
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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