


Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

<p>Product Name: Ammonium hydroxide, ACS, 28-30% w/w</p> <p>CAS#: 1336-21-6</p> <p>Synonyms: Ammonia solution; Ammonium hydrate; Ammonia water</p> <p>Chemical Formula: H₅NO</p>	<p>Contact Information:</p> <p>UFC Biotechnology, Inc. 435 Creekside Drive, Suite 5 Amherst, New York 14228 Office Number: 716-777-3776</p> <p>INFOTRAC (24HR Emergency Telephone), call: 1-800-535-5053</p> <p>International INFOTRAC, call: 1- 352-323-3500</p> <p>For non-emergency assistance, call: 1-716-777-3776</p>
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Section 2: Hazards Identification

2.1	<p>Classification of the substance or mixture</p> <p>GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)</p> <p>Skin Corrosion/Irritation Category 1B</p> <p>Serious Eye Damage/Eye Irritation Category 1</p> <p>Specific target organ toxicity (single exposure) Category 3, vascular</p> <p>Target Organs - Respiratory system.</p> <p>Full text of H statements : see section 16</p>
2.2	<p>GHS Label elements, including precautionary statements</p> <p>Pictogram</p> <div style="text-align: center;">  </div> <p>Signal word Danger</p> <p>Hazard statement(s)</p> <p>H314 Causes severe skin burns and eye damage.</p> <p>H335 May cause respiratory irritation.</p> <p>H400 Very toxic to aquatic life.</p> <p>Precautionary statement(s)</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P273 Avoid release to the environment.</p> <p>P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P308+P310 IF exposed or concerned: Immediately call a POISON CENTER/doctor.</p>
2.3	<p>Hazards not otherwise classified (HNOC) or not covered by GHS</p> <p>None under normal conditions.</p>

Section 3: Composition, Information on Ingredients

3.1	Substances								
<table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">Name</th> <th style="width: 20%;">CAS</th> <th style="width: 30%;">Formula</th> <th style="width: 20%;">% by Weight</th> </tr> </thead> <tbody> <tr> <td>Ammonium hydroxide</td> <td>1336-21-6</td> <td></td> <td>100%</td> </tr> </tbody> </table>		Name	CAS	Formula	% by Weight	Ammonium hydroxide	1336-21-6		100%
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Ammonium hydroxide	1336-21-6		100%						

Section 4: First Aid Measures

- 4.1 Description of first-aid measures**
 Call a POISON CENTER or physician if you feel unwell (P312).
If inhaled: If not breathing, give artificial respiration. **IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). Immediately call a POISON CENTER or physician (P310).
If on skin or hair: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. In the case of skin irritation or allergic reactions see a physician. Remove and wash contaminated clothing and gloves, including the inside, before-use.
If swallowed: Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Get medical attention.
- 4.2 Most important symptoms and effects, both acute and delayed**
 Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.
- 4.3 Indication of any immediate medical attention and special treatment needed**
 No data available

Section 5: Firefighting Measures

- 5.1 Extinguishing media**
Suitable extinguishing media Use water spray or fog.
Unsuitable extinguishing media No information available
- 5.2 Special hazards arising from the substance or mixture**
 Do not allow run-off from fire-fighting to enter drains or water courses.
Hazardous Combustion Products Nitrogen oxides (NOx), Ammonia.
- 5.3 Advice for firefighters**
 As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
- 5.4 Further information**
NFPA Health 3 Flammability 0 Instability 0 Physical Hazards N/A

Section 6: Accidental Release Measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
 Ensure adequate ventilation. Use personal protective equipment as required. For personal protection see section 8.
- 6.2 Environmental precautions**
 Should not be released into the environment. See Section 12 for additional Ecological Information.
- 6.3 Methods and materials for containment and cleaning up**
 Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**
 For disposal see section 13.

Section 7: Handling and Storage

- 7.1 Precautions for safe handling**
Advice on safe handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation.
- 7.2 Conditions for safe storage, including any incompatibilities**
Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.
To maintain quality Keep in a dry, cool and well-ventilated place. Refer product specification and/or product label for specific storage temperature requirement. Keep container tightly closed. Keep away from acids. Keep away from oxidizing agents. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.
- 7.3 Specific end use(s)**
 Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8: Exposure Controls/Personal Protection

- 8.1 Control parameters**
 This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

8.2 Exposure controls

Appropriate engineering controls Ventilation systems. Ensure that eyewash stations and safety showers are close to the workstation location. Apply preventive skin protection.

Personal protective equipment

Eye/face protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection & Body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and Chemical Properties

Physical State	Liquid
Appearance	Colorless
Odor	Ammonia like
Odor Threshold	No information available
pH	12.0, alkaline
Melting Point/Range	-2.9 °C / 26.8 °F
Boiling Point/Range	108 °C / 226.4 °F
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid, gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	< 112.5 mmHg at 20°C
Vapor Density	0.6 (Air = 1.0)
Specific Gravity	0.98
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Viscosity	No information available

Section 10: Stability and Reactivity Data

Reactive Hazard	None known.
Stability	Stable under normal conditions.
Conditions to Avoid	Excess heat.
Incompatible Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Nitrogen oxides (NO _x), Ammonia
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity LD50 Not listed

Skin corrosion/irritation No information available

Serious eye damage/eye irritation No information available

Respiratory or skin sensitization No information available

Germ cell mutagenicity No indications of human germ cell mutagenicity exist.

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity No data available
Specific target organ toxicity - single exposure No data available
Specific target organ toxicity - repeated exposure No data available
Aspiration hazard No data available

11.2 Additional Information

Section 12: Ecological Information

12.1 Toxicity

Contains a substance that is: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not empty into drains. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate the groundwater system.

Toxicity to freshwater fish (P. promelas) LC50 – 0.53 mg/L - 96 h

Toxicity to water flea EC50 – 0.66 mg/L – 48 h

12.2 Persistence and degradability

Persistence is unlikely based on the information available. Miscible with water.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

Likely to be mobile due to water miscibility. Log Pow -1.1

Section 13: Disposal Considerations

13.1 Waste treatment methods

Chemical waste generators must determine whether a discarded chemical is classified as hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Section 14: Transport Information

DOT (US)

UN number: 2672 Class: 8 Packing group: III

Proper shipping name: Ammonia solution

IATA

UN number: 2672 Class: 8 Packing group: III

Proper shipping name: Ammonia solution

IMDG/IMO

UN number: 2672 Class: 8 Packing group: III

Proper shipping name: Ammonia solution

TDG

UN number: 2672 Class: 8 Packing group: III

Proper shipping name: Ammonia solution

Section 15: Other Regulatory Information

TSCA Components. The following components are subject to reporting levels established by the Toxic Substances Control Act (40 CFR Part 710)

Ammonium hydroxide CAS-No. 1336-21-6 TSCA Listed – Listed TSCA Inventory notification – Active

SARA 302 Components. This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components. The following components are subject to reporting levels established by SARA Title III, Section 313:

Ammonium hydroxide CAS-No. 1336-21-6

SARA 311/312 Hazards. CWA - Reportable Quantities 1000 lb

Massachusetts Right To Know Components. No components are subject to the Massachusetts Right to Know Act.

CANADA No additional information available

EU-Regulations No additional information is available

National regulations No additional information available



Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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