SAFETY DATA SHEET

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

1.1 Product identifiers

Product name	Ammonium Hydroxide 28-30% Solution
CAS number	1336-21-6
Synonyms	Ammonia solution; Ammonia water; Ammonium hydrate

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

Identified uses	Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Eye Irritation	Category 1
Specific Target Organ Toxicity (single exposure)	Category 3
Target Organ(s) - Respiratory system	

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Danger
Hazard statements	Causes severe skin burns and eye damage. May cause respiratory irritation.
Precautionary statements	Prevention: Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands, and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Response: Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Very toxic to aquatic life.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Water	Aqua; H2O	7732-18-5	70-75%
Ammonium hydroxide	Ammonia solution; Ammonia water	1336-21-6	25-30%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
If swallowed	Do NOT induce vomiting. Call a physician or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

4.3 Indication of any immediate medical attention and special treatment needed

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO2, dry chemical, dry sand, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.

5.2 Specific hazards arising from the substance or mixture

Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Combustion Products: Nitrogen oxides (NOx).

5.3 Special protective equipment and precautions 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

Flash Point No information available.

Autoignition Temperature No information available.

Explosion limits

Upper No data available.

Lower No data available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	1	0	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. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Avoid contact with skin, eyes, and inhalation of vapors.

6.2 Environmental precautions

Should not be released into the environment. Keep out of waterways. Collect spillage. 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

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed, seek immediate medical assistance. Do not breathe mist/vapors/spray.

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

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep containers tightly closed in a dry, cool, and well-ventilated place. Corrosives area.

Incompatibilities
Strong oxidizing agents. Metals. Acids. Fluorine. Halogens.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Ammonia	(Vacated) STEL	35 ppm	27 mg/m3
	TWA	50 ppm	35 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Ammonia	TWA	25 ppm
	STEL	35 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value	
Ammonia	IDLH	300 ppm	
	TWA	25 ppm	18 mg/m3
	STEL	35 ppm	27 mg/m3

Biological occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

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 EN 166.

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

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.

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Clear, colorless
Odor	Ammonia odor
Odor Threshold	No information available
pH	13.8 (29% solution)
Melting Point/Range	-72°C (-98°F)
Boiling Point/Range	ca. 36°C (ca. 97°F)
Evaporation Rate	No information available
Flammability (solid)	Not applicable
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	580 @ 20°C (68°F) for 28% solution
Vapor Density	0.60 NH3
Density	0.9 g/mL at 25°C (77°F)
Solubility	Infinitely soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	NH4OH
Molecular Weight	35.05 g/mol
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information
No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No information available.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
None under normal processing.

10.4 Conditions to avoid
Incompatible products. Excess heat.

10.5 Incompatible materials
Strong oxidizing agents, Metals, Acids, Fluorine, Halogens.

10.6 Hazardous decomposition products
Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium hydroxide	> 350 mg/kg (Rat)	-	-

Skin corrosion/irritation
Causes burns by all exposure routes.

Serious eye damage/eye irritation
Causes burns by all exposure routes.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Ammonium hydroxide	1336-21-6	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure
Respiratory system.

Specific target organ toxicity - repeated exposure
None known.

Reproductive toxicity
No information available.

Chronic effects
Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

11.2 Additional Information
The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity
Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Product		Species	Test Results
Ammonium hydroxide	LC50	Fathead Minnow	8.2 mg/L 96 Hr
	LC50	Rainbow Trout	0.008 mg/L 24 Hr
	LC50	Bluegill	0.024 mg/L 48 Hr
	EC50	Water Flea	0.66 mg/L 46 Hr

12.2 Persistence and degradability
Persistence is unlikely based on information available.

12.3 Bio accumulative potential
No information available.

12.4 Mobility in soil
This product is water soluble and will move readily in soil and water.

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Endocrine disrupting properties
No information available.

12.7 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a 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 no.	UN2672
Proper Shipping Name	AMMONIA SOLUTIONS
Hazard Class	8
Packing Group	III

IMDG

UN no.	UN2672
Proper Shipping Name	AMMONIA SOLUTION
Hazard Class	8
Packing Group	III

IATA

UN no.	UN2672
Proper Shipping Name	AMMONIA SOLUTION
Hazard Class	8
Packing Group	III

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Ammonium hydroxide (CAS #1336-21-6), RQ: 1000 lb.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See Section 2 for more information.

SARA 313 (TRI reporting)

Listed, Ammonium hydroxide (CAS #1336-21-6).

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) - Hazardous Substances

Listed, Ammonium hydroxide (CAS #1336-21-6), RQ: 1000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Ammonium hydroxide (CAS #1336-21-6).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Ammonium hydroxide (CAS #1336-21-6).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Ammonium hydroxide (CAS #1336-21-6).

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 02/25/2016
Revision 1: 10/09/2023
Revision 2: 11/14/2024

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.