Safety Data Sheet · OSHA HCS 2024

Ammonium Hydroxide 5% Technical Grade

Technical · 5% w/w as NH3

Standard	Revised	Emergency
OSHA HCS 2024 · GHS Rev. 7	2026-11-20	Chemtel 1-800-255-3924 (24/7)

1 Identification

Product Identifier	Ammonium Hydroxide 5% Technical Grade
Grade	Technical
Concentration	5% w/w as NH3
CAS Number	1336-21-6
Chemical Formula	NH4OH
Manufacturer	Alliance Chemical 204 South Edmond Street, Taylor, TX 76574
Emergency Phone	Chemtel 1-800-255-3924 (24/7)
Recommended Use	Industrial / laboratory chemical. See Section 7.
Restrictions on Use	No restrictions identified beyond the conditions of safe use in Sections 7 and 8.

2 Hazard Identification



Corrosive



Irritant / harmful



Environmental hazard

Classification

Skin corrosion/irritation, Category 1

Serious eye damage/eye irritation, Category 1

Specific target organ toxicity, single exposure, Category 3 (respiratory tract irritation)

Hazardous to the aquatic environment, acute hazard, Category 1 †

† GHS environmental hazard class; not adopted under OSHA HCS (29 CFR 1910.1200).

Signal Word

Danger

Hazard Statements

H314 Causes severe skin burns and eye damage

H335 May cause respiratory irritation

H400 Very toxic to aquatic life

Precautionary Statements

P234 Keep only in original packaging.

P260 Do not breathe dust, fume, gas, mist, vapors or spray.

P261 Avoid breathing dust, fume, gas, mist, vapors or spray.

P264 Wash hands and face thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, and eye/face protection.

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 or 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 or doctor.

P321 Specific treatment (see first-aid information on this label).

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Classification, hazard (H) and precautionary (P) statements and pictograms per OSHA HCS 2024 (29 CFR 1910.1200, Appendices A–C), aligned with GHS Rev. 7.

3 Composition / Information on Ingredients

Component	CAS No.	Formula	Concentration
Ammonium hydroxide (as NH3)	1336-21-6	NH_4OH	4.7-5.3% (w/w)
Water	7732-18-5	H_2O	Balance (w/w)

Concentrations are nominal; lot-specific values appear on the Certificate of Analysis. Components not contributing to classification are omitted.

4 First-Aid Measures

Eyes

Rinse with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap. Get medical attention immediately.

Inhalation

Move person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion

Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

Most Important Symptoms and Effects

Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.

Inhalation may irritate the nose, throat and respiratory tract (coughing, sore throat).

Immediate Medical Attention and Special Treatment

Immediate medical attention is required after eye or skin contact or ingestion; tissue damage may continue after exposure ends.

5 Fire-Fighting Measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical, or CO2. Use measures appropriate to local circumstances.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.
Specific Hazards Arising from the Chemical	Fire may release corrosive and toxic gases. Containers may rupture when heated.
Protective Equipment	Wear self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products	Ammonia gas when heated; above about 315 °C (600 °F) ammonia dissociates to hydrogen and nitrogen; nitrogen oxides in a fire.

6 Accidental Release Measures

Personal Precautions	Use PPE as described in Section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
Hazard-Specific Precautions	Do not touch spilled material without protective equipment. Neutralize residue only with a method suitable for the material, then collect.
Environmental Precautions	Prevent leakage or spillage from entering drains, sewers, or waterways.
Containment & Cleanup	Absorb with inert material. Collect in appropriate waste container. Dispose per applicable regulations.

7 Handling and Storage

Safe Handling	Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep container closed when not in use.
Safe Storage	Store in a cool, dry, well-ventilated area. Keep away from incompatible materials (see Section 10). Keep containers tightly closed.
Specific Storage Precautions	Store tightly closed in a cool, well-ventilated area out of sunlight; open containers slowly, as pressure may build up. Use steel or polyethylene, never copper, brass, bronze, zinc or galvanized fittings. Keep away from bleach, acids and halogens.

8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Limit	Value
OSHA PEL	50 ppm TWA
NIOSH REL	25 ppm TWA / 35 ppm STEL
IDLH	300 ppm

Engineering Controls	Use adequate ventilation. Provide eyewash stations and quick-drench showers accessible to areas of use.
Eye/Face Protection	Wear chemical safety goggles or face shield.
Skin Protection	Wear chemical-resistant gloves and protective clothing.

Respiratory Protection	Use a NIOSH-approved respirator (N95/P100 for particulate, organic vapor or acid gas cartridge as appropriate to the substance) when exposure limits may be exceeded or visible mist or dust is generated.

Exposure limits sourced from NIOSH Pocket Guide, OSHA 29 CFR 1910.1000 and ACGIH TLVs.

9 Physical & Chemical Properties

Appearance	Clear, colorless liquid with mild ammonia odor
Odor	No data available
Odor Threshold	No data available
pH	No data available
Melting Point / Freezing Point	No data available
Boiling Point	No data available
Flash Point	Not applicable
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Upper/Lower Flammability or Explosive Limits	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Relative Density	0.979 at 20/20 °C (water = 1)
Solubility	Completely miscible with water
Partition Coefficient (n-octanol/water)	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Particle Characteristics	Not applicable
Density	0.9771 g/cm^3 at 20 °C

Values shown reflect product-specific canonical data. Lot-specific ranges may vary; see the Certificate of Analysis for the shipped lot.

10 Stability and Reactivity

Reactivity	Not reactive under normal conditions of use and storage.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing conditions.
Conditions to Avoid	Heat and direct sunlight: ammonia gas is released and pressure builds in closed containers. Contact with incompatible materials.
Incompatible Materials	Bleach and other hypochlorites, chlorine, bromine and iodine (toxic chloramines and explosive compounds); mercury, silver and silver oxide, gold (explosive compounds); strong acids (violent, heat); strong oxidizers. Corrodes copper, brass, bronze, zinc, galvanized surfaces and aluminum alloys.
Hazardous Decomposition Products	Ammonia gas when heated; above about 315 °C (600 °F) ammonia dissociates to hydrogen and nitrogen; nitrogen oxides in a fire.

11 Toxicological Information

See Section 2 for GHS hazard classification.

Likely Routes of Exposure	Inhalation, skin contact, eye contact, ingestion.
Symptoms	Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach. Inhalation may irritate the nose, throat and respiratory tract (coughing, sore throat).
Delayed and Chronic Effects	No delayed or chronic effects identified beyond the classification in Section 2.
Numerical Measures of Toxicity	No data available

Carcinogen Classification

Agency	Status
IARC	Not listed as carcinogen.
NTP	Not listed as carcinogen.
OSHA	Not listed as carcinogen.

12 Ecological Information

Aquatic Hazard	H400 Very toxic to aquatic life
Ecotoxicity	Fish LC50: ~ 0.024 mg/L (48 h, Lepomis macrochirus — driven by un-ionized NH_3 (pH/temp dependent); range 0.024–0.093 mg/L)
Persistence & Degradability	Not applicable (inorganic; $NH_3 \rightleftharpoons NH_4^+$ equilibrium). Toxicity from un-ionized ammonia, rising with pH and temperature.
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available

13 Disposal Considerations

Dispose of contents/container in accordance with applicable federal, state, and local regulations. Do not dispose of into drains or waterways.

If discarded, this material may be a corrosive hazardous waste (EPA RCRA D002, 40 CFR 261.22): aqueous with pH ≤ 2 or ≥ 12.5, or a liquid that corrodes steel at more than 6.35 mm per year. The waste generator must make the final hazardous-waste determination.

14 Transport Information

Not regulated for transport under US DOT 49 CFR Subchapter C.

Environmental Hazards	Meets GHS aquatic-hazard criteria; may be a marine pollutant under the IMDG Code (vessel transport).

15 Regulatory Information

Inventory / List	Status
California Proposition 65	Not listed
US EPA TSCA Active Inventory	Listed
EPCRA SARA 313 (TRI)	Not listed
CERCLA Reportable Quantity (RQ)	Ammonium hydroxide (CAS 1336-21-6) — RQ 1,000 lb (454 kg)

SARA 311/312 hazard categories correspond to the GHS classification in Section 2. Data retrieved as of: California Proposition 65 2026-11-02; US EPA TSCA Active Inventory 2026-11-02; EPCRA SARA 313 (TRI) 2026-11-02.

16 Other Information

Revision Date	2026-11-20
Format	16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7.

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