

## Section 1: Product and Company Identification

**Absolute Accuracy**  
4591 S Wayside Dr  
Houston, TX 77087  
(832) 571-2387

Product Code: 9

**Synonyms:** NH3  
**Recommended Use:** calibration gas  
**Usage Restrictions:** industrial calibration gas only

## Section 2: Hazards Identification



### Danger

#### Hazard Classification:

Eye Effects (Category 1)  
Gases Under Pressure  
Specific target organ toxicity (Single Exposure) (Category 3)

#### Hazard Statements:

Causes serious eye damage  
Contains gas under pressure; may explode if heated  
May cause respiratory irritation;

#### Precautionary Statements

##### Prevention:

Avoid breathing dust/fume/gas/mist/ vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear eye protection/face protection.  
[In case of inadequate ventilation] wear respiratory protection.

##### Response:

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Call a poison center or doctor if you feel unwell.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.

##### Storage:

Store locked up.  
Protect from sunlight.  
Store in a well-ventilated place. Keep container tightly closed.

##### Disposal:

Dispose of contents and/or container in accordance with applicable regulations.

## Section 3: Composition/Information on Ingredients

	CAS #	Concentration
<b>Anhydrous Ammonia</b>	7664-41-7	PPM 100
<b>Nitrogen</b>	7727-37-9	balanced

	Chemical Substance	Chemical Family	Trade Names
<b>Anhydrous Ammonia</b>	AMMONIA, ANHYDROUS	Inorganic gases	ANHYDROUS AMMONIA; AMMONIA GAS; AMMONIA; SPIRIT OF HARTSHORN; AMMONIA, ANHYDROUS, LIQUIFIED; UN 1005; H3N
<b>Nitrogen</b>	NITROGEN, COMPRESSED GAS	Inorganic gases	DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2

## Section 4: First Aid Measures

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
<b>Anhydrous Ammonia</b>	Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.	Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Gas: Not a likely route of exposure	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. Wear personal protective equipment if gas still present.	For inhalation, consider oxygen.
<b>Nitrogen</b>	Wash exposed skin with soap and water.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

## Section 5: Fire Fighting Measures

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
<b>Anhydrous Ammonia</b>	Carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.	Nitrogen dioxide, ammonium nitrate	<ul style="list-style-type: none"> <li>Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply, with full-body encapsulating, chemical protective suit.</li> <li>Wear protective gear with respiratory support.</li> </ul>

	<b>Suitable Extinguishing Media</b>	<b>Products of Combustion</b>	<b>Protection of Firefighters</b>
<b>Nitrogen</b>	Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat.	Non-flammable	<ul style="list-style-type: none"> <li>Respiratory protection may be needed for frequent or heavy exposure.</li> </ul>

## Section 6: Accidental Release Measures

	<b>Personal Precautions</b>	<b>Environmental Precautions</b>	<b>Methods for Containment</b>
<b>Anhydrous Ammonia</b>	Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet.	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.	Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Do not get water inside container. Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.
<b>Nitrogen</b>	Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	No significant effects from contamination expected.	Stop leak if possible without personal risk.

	<b>Methods for Cleanup</b>	<b>Other Information</b>
<b>Anhydrous Ammonia</b>	Small spills: Flood with water. Large spills: Dike for later disposal. Collect spilled material using mechanical equipment. Dike for later disposal. Add dilute acid. Absorb with sand or other non-combustible material. Collect runoff for disposal as potential hazardous waste. Do not direct water at source of leak of liquid ammonia.	Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).
<b>Nitrogen</b>	N/A	N/A

## Section 7: Handling and Storage

	<b>Handling</b>	<b>Storage</b>
<b>Anhydrous Ammonia</b>	Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125F (52C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.	Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier.
<b>Nitrogen</b>	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Keep separated from incompatible substances.

## Section 8: Exposure Controls/Personal Protection

	<b>Exposure Guidelines</b>
<b>Anhydrous Ammonia</b>	AMMONIA, ANHYDROUS: 50 ppm (35 mg/m3) OSHA TWA 35 ppm (27 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 25 ppm ACGIH TWA 35 ppm ACGIH STEL 25 ppm (18 mg/m3) NIOSH recommended TWA 10 hour(s) 35 ppm (27 mg/m3) NIOSH recommended STEL

	<b>Exposure Guidelines</b>
<b>Nitrogen</b>	NITROGEN, COMPRESSED GAS: NITROGEN: ACGIH (simple asphyxiant)

### Engineering Controls

Handle only in fully enclosed systems.

	<b>Eye Protection</b>	<b>Skin Protection</b>	<b>Respiratory Protection</b>
<b>Anhydrous Ammonia</b>	Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	Wear appropriate chemical resistant clothing.	Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply, with full-body encapsulating, chemical protective suit.
<b>Nitrogen</b>	Eye protection not required, but recommended.	Protective clothing is not required.	Respiratory protection may be needed for frequent or heavy exposure.

### General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

## Section 9: Physical and Chemical Properties

	<b>Physical State</b>	<b>Appearance</b>	<b>Color</b>	<b>Change in Appearance</b>	<b>Physical Form</b>	<b>Odor</b>	<b>Taste</b>
<b>Anhydrous Ammonia</b>	Gas	Colorless	Colorless	N/A	Gas, liquid	Pungent odor	N/A
<b>Nitrogen</b>	Gas	Clear	Colorless	N/A	Gas	Odorless	Tasteless

	<b>Flash Point</b>	<b>Flammability</b>	<b>Partition Coefficient</b>	<b>Autoignition Temperature</b>	<b>Upper Explosive Limits</b>	<b>Lower Explosive Limits</b>
<b>Anhydrous Ammonia</b>	Not available			1204 F (651 C)	0.28	0.15
<b>Nitrogen</b>	Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable

	<b>Boiling Point</b>	<b>Freezing Point</b>	<b>Vapor Pressure</b>	<b>Vapor Density</b>	<b>Specific Gravity</b>	<b>Water Solubility</b>	<b>pH</b>	<b>Odor Threshold</b>	<b>Evaporation Rate</b>	<b>Viscosity</b>
<b>Anhydrous Ammonia</b>	-27 F (-33 C)	-108 F (-78 C)	6658 mmHg @ 21 C	0.5967 (Air=1)	Not applicable (gas); 0.682 @ -33.4 C (liquefied gas)	38% @ 20 C	11.6 (1.0 N solution)	1-5 ppm	Not applicable	0.255 mPa.s (0.255 centipoises) @ -33.5 C (liquefied gas)
<b>Nitrogen</b>	-321 F (-196 C)	-346 F (-210 C)	760 mmHg @ -196 C	0.967 (Air=1)	Not applicable	1.6% @ 20 C	Not applicable	Not available	Not applicable	0.01787 cP @ 27 C

	<b>Molecular Weight</b>	<b>Molecular Formula</b>	<b>Density</b>	<b>Weight per Gallon</b>	<b>Volatility by Volume</b>	<b>Volatility</b>	<b>Solvent Solubility</b>
<b>Anhydrous Ammonia</b>	17.03	N-H3	0.7067 g/L @ 25 C	Not available	Not available	Not applicable	Soluble: Methanol, ethanol, chloroform, ether, organic solvents
<b>Nitrogen</b>	28.0134	N2	1.2506 g/L	Not available	100%	1	Soluble: Liquid ammonia

## Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
<b>Anhydrous Ammonia</b>	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Acids, combustible materials, metals, oxidizing materials, metal salts, halo carbons, halogens, amines, reducing agents, cyanides, bases
<b>Nitrogen</b>	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Metals, oxidizing materials

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
<b>Anhydrous Ammonia</b>	Ammonia, oxides of nitrogen	Will not polymerize.
<b>Nitrogen</b>	Oxides of nitrogen	Will not polymerize.

## Section 11: Toxicology Information

### Acute Effects

	Oral LD50	Dermal LD50	Inhalation
<b>Anhydrous Ammonia</b>	2000 ppm/4 hour(s) inhalation-rat LC50	Not established	Burns, severe irritant, pulmonary edema at concentrations over 1500 ppm
<b>Nitrogen</b>	Not available	Not available	Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma

	Eye Irritation	Skin Irritation	Sensitization
<b>Anhydrous Ammonia</b>	Burns, blindness	Burns, liquefied gas can cause frostbite	Acute toxicity, Category 3, inhalation; H331: Toxic if inhaled. Skin corrosion, Category 1B; H314: Causes severe skin burns and eye damage.
<b>Nitrogen</b>	Contact with rapidly expanding gas may cause burns or frostbite	No information on significant adverse effects	Difficulty breathing

### Chronic Effects

	Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
<b>Anhydrous Ammonia</b>	Not listed	Available.	Not established	No data
<b>Nitrogen</b>	Not hazardous	Not available	Not available	No data

## Section 12: Ecological Information

### Fate and Transport

	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
<b>Anhydrous Ammonia</b>	Fish toxicity: Acute LC50 0.88 mg/L 96 hour(s) Orangethroat; 1600 ug/L 96 hour(s) LC50 (Mortality) Common jollytail (Galaxias maculatus) Invertebrate toxicity: 7700 ug/L 96 hour(s) LC50 (Immobilization) Ark shell (Anadara	Not available	Not available	Not available

	granosa) Algal toxicity: 2100-2300 ug/L NR hour(s) (Abundance) Algae, phytoplankton, algal mat (Algae) Phyto toxicity: 16500 ug/L 30 hour(s) (Abundance) Common water-nymph (Najas guadalupensis) Other toxicity: Not available			
<b>Nitrogen</b>	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

## Section 13: Disposal Considerations

<b>Anhydrous Ammonia</b>	Dispose in accordance with all applicable regulations.
<b>Nitrogen</b>	Dispose in accordance with all applicable regulations.

## Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

### DOT Information For This Mixture

<b>Shipping Name</b>	Compressed gas, n.o.s. (Nitrogen, Anhydrous Ammonia)
<b>UN Number</b>	UN1956
<b>Hazard Class</b>	2.2
<b>Hazard Information</b>	Non-Flammable Gas

### Individual Component Information

	<b>Proper Shipping Name</b>	<b>ID Number</b>	<b>Hazard Class or Division</b>	<b>Packing Group</b>	<b>Labeling Requirements</b>	<b>Passenger Aircraft or Railcar Quantity Limitations</b>	<b>Cargo Aircraft Only Quantity Limitations</b>	<b>Additional Shipping Description</b>
<b>A n h y d r o u s A m m o n i a</b>	Ammonia, anhydrous	UN1005	2.2, 2.3	Not applicable	2.3; 8	Forbidden	Forbidden	Toxic-Inhalation Hazard Zone D

	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
<b>Nitrogen</b>	Nitrogen, compressed	UN1066	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

### Canadian Transportation of Dangerous Goods

	Shipping Name	UN Number	Class	Packing Group / Risk Group
<b>Anhydrous Ammonia</b>	AMMONIA, ANHYDROUS; or ANHYDROUS AMMONIA	UN1005	2.3; 8	Not applicable
<b>Nitrogen</b>	Nitrogen, compressed	UN1066	2.2	Not applicable

## Section 15: Regulatory Information

### U.S. Regulations

	CERCLA Sections	SARA 355.30	SARA 355.40
<b>Anhydrous Ammonia</b>	100 LBS RQ	500 LBS TPQ	100 LBS RQ
<b>Nitrogen</b>	Not regulated.	Not regulated.	Not regulated.

### SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
<b>Anhydrous Ammonia</b>	Yes	No	No	No	Yes
<b>Nitrogen</b>	Yes	No	No	No	Yes

### SARA 372.65

<b>Anhydrous Ammonia</b>	AMMONIA, ANHYDROUS
<b>Nitrogen</b>	Not regulated.

### OSHA Process Safety

<b>Anhydrous Ammonia</b>	10000 LBS TQ
<b>Nitrogen</b>	Not regulated.

### State Regulations

	CA Proposition 65
<b>Anhydrous Ammonia</b>	Not regulated.
<b>Nitrogen</b>	Not regulated.

### Canadian Regulations

	WHMIS Classification
<b>Anhydrous Ammonia</b>	A, B1, D1A, E

<b>Nitrogen</b>	A
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### National Inventory Status

	<b>US Inventory (TSCA)</b>	<b>TSCA 12b Export Notification</b>	<b>Canada Inventory (DSL/NDSL)</b>
<b>Anhydrous Ammonia</b>	Listed on inventory.	Not listed.	Not determined.
<b>Nitrogen</b>	Listed on inventory.	Not listed.	Listed on inventory.

## Section 16: Other Information

	<b>NFPA Rating</b>
<b>Anhydrous Ammonia</b>	HEALTH=3 FIRE=1 REACTIVITY=0
<b>Nitrogen</b>	HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=SA

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard