



# Safety Data Sheet

4.7 ppm Anhydrous Ammonia Balance Air

## Section 1: Product and Company Identification

**Purity Cylinder Gases, Inc.**

2580 28th St SW  
Wyoming, MI 49519  
P: (616)532-2375  
www.puritygas.com

Product Code: 4.7 ppm Anhydrous Ammonia Balance Air

Part Number: SP 5P AM/A 30AL

**Synonyms:**

**Recommended Use:**

**Usage Restrictions:**

## 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
Anhydrous Ammonia	7664-41-7	4.7 ppm
Air	Not applicable	Balance

	Chemical Substance	Chemical Family	Trade Names
Anhydrous Ammonia	AMMONIA, ANHYDROUS	Inorganic gases	ANHYDROUS AMMONIA; AMMONIA GAS; AMMONIA; SPIRIT OF HARTSHORN; AMMONIA, ANHYDROUS, LIQUIFIED; UN 1005; H3N
Air	AIR, COMPRESSED	Inorganic gases	AIR; UN 1002 Nitrogen CAS: 7727-37-9 Oxygen CAS: 7782-44-7

**Section 4: First Aid Measures**

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Anhydrous Ammonia	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.
Air	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. Get medical attention.	

**Section 5: Fire Fighting Measures**

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Anhydrous Ammonia	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>
Air	Use extinguishing agents appropriate for surrounding fire.		<ul style="list-style-type: none"> <li>▪ No respirator is required under normal conditions of use.</li> </ul>

**Section 6: Accidental Release Measures**

	Personal Precautions	Environmental Precautions	Methods for Containment
--	----------------------	---------------------------	-------------------------

	Personal Precautions	Environmental Precautions	Methods for Containment
<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>Air</b>			Stop leak if possible without personal risk.

	Methods for Cleanup	Other Information
<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>Air</b>		

## Section 7: Handling and Storage

	Handling	Storage
<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>Air</b>	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	

## Section 8: Exposure Controls/Personal Protection

	Exposure Guidelines
<b>Anhydrous Ammonia</b>	AMMONIA, ANHYDROUS: 50 ppm (35 mg/m <sup>3</sup> ) OSHA TWA 35 ppm (27 mg/m <sup>3</sup> ) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 25 ppm ACGIH TWA 35 ppm ACGIH STEL 25 ppm (18 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) 35 ppm (27 mg/m <sup>3</sup> ) NIOSH recommended STEL
<b>Air</b>	AIR, COMPRESSED: No occupational exposure limits established.

### Engineering Controls

Handle only in fully enclosed systems.

	Eye Protection	Skin Protection	Respiratory Protection
<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>Air</b>	Eye protection not required under normal conditions.	Protective clothing is not required under normal conditions.	No respirator is required under normal conditions of use.

### 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

	Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
<b>Anhydrous Ammonia</b>	Gas	Colorless	Colorless	N/A	Gas, liquid	Pungent odor	N/A
<b>Air</b>	Gas	Clear	Colorless		Gas	Not available	

	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Anhydrous Ammonia	Not available			1204 F (651 C)	0.28	0.15
Air						

	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
Anhydrous Ammonia	-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)
Air	-317 F (-194 C)	Not available	760 mmHg @ -194 C	1	Not applicable	Slightly soluble	Not applicable	Not available	Not applicable	0.01853 cP @ 26.85 C

	Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
Anhydrous Ammonia	17.03	N-H3	0.7067 g/L @ 25 C	Not available	Not available	Not applicable	Soluble: Methanol, ethanol, chloroform, ether, organic solvents
Air			1.29 g/L @ 0 C			Not applicable	Slightly Soluble

## Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
Anhydrous Ammonia	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
Air	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	None known

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
Anhydrous Ammonia	Ammonia, oxides of nitrogen	Will not polymerize.
Air	No hazard expected.	Will not polymerize.

## Section 11: Toxicology Information

### Acute Effects

	Oral LD50	Dermal LD50	Inhalation
Anhydrous Ammonia	2000 ppm/4 hour(s) inhalation-rat LC50	Not established	Burns, severe irritant, pulmonary edema at concentrations over 1500 ppm
Air	Not available	Not available	

	Eye Irritation	Skin Irritation	Sensitization
Anhydrous Ammonia	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.
Air	No information is available	No information is available	No significant target effects reported.

### Chronic Effects

	Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Anhydrous Ammonia	Not listed	Available.	Not established	No data
Air	Not available	Not available	No data	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 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	Not available	Not available	Not available
<b>Air</b>	Fish 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>Air</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. (Air, Anhydrous Ammonia)
<b>UN Number</b>	UN1956
<b>Hazard Class</b>	2.2
<b>Hazard Information</b>	Non-Flammable Gas

#### Individual Component Information

	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>Anhydrous Ammonia</b>	Ammonia, anhydrous	UN1005	2.2, 2.3	Not applicable	2.3; 8	Forbidden	Forbidden	Toxic-Inhalation Hazard Zone D
<b>Air</b>	Air, compressed	UN1002	2.2	Not available	2.2	Not available	Not available	Not available

#### 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>Air</b>	Air, compressed	UN1002	2.2	Not available

## 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>Air</b>	Not regulated.	Not regulated.	Not regulated.

### SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
Anhydrous Ammonia	Yes	No	No	No	Yes
Air	No	No	No	No	Yes

### SARA 372.65

Anhydrous Ammonia	AMMONIA, ANHYDROUS
Air	Not regulated.

### OSHA Process Safety

Anhydrous Ammonia	10000 LBS TQ
Air	Not regulated.

### State Regulations

	CA Proposition 65
Anhydrous Ammonia	Not regulated.
Air	Not regulated.

### Canadian Regulations

	WHMIS Classification
Anhydrous Ammonia	A, B1, D1A, E
Air	A

### National Inventory Status

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

## Section 16: Other Information

	NFPA Rating
Anhydrous Ammonia	HEALTH=3 FIRE=1 REACTIVITY=0
Air	HEALTH=0 FIRE=0 REACTIVITY=0

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