

Safety Data Sheet

Part Number 327054

Section 1. Substance Identity and Company Contact Information

Product Name	Ammonia in Nitrogen	Product Part Number(s)	01-R717GAS and 01-R717KIT
Trade Name	Ammonia in Nitrogen	Unit Size	103 liters - 3.6 Cu. Ft. - 1,000 psig
Company	OI Analytical, P.O. Box 9010, College Station, TX 77842-9010, Phone: (979) 690-1711, Fax: (979) 690-0440		
Emergency No. 1-800-424-9300 (Chemtrec). Use only in the event of chemical emergencies involving spills, leaks, fire, exposure, or accidents involving chemicals.			

Section 2. Hazards Identification

Pictogram(s)



Signal Word

Warning

GHS Classification

Physical, Gases under Pressure, Compressed Gas

Hazard Statement(s)

Colorless gas with ammonia odor which may cause eye, skin, and respiratory irritation. High concentrations of gas may accumulate in confined or poorly ventilated areas, displacing oxygen and causing unconsciousness or death. Exposure to ammonia present in this product may cause eye, skin, and respiratory irritation and or eye damage. Inhalation of high concentrations may damage the lungs causing chemical pneumonitis and swelling fluid retention (edema). Use only with adequate ventilation. Contents under pressure. Avoid heat and flames. Protect containers from physical damage. Use and store below 125 °F (52 °C).

Precautionary Statement(s)

Use only with adequate ventilation. Contents under pressure. Avoid heat and flames. Protect containers from physical damage. Use and store below 1250F (520C).

Target Organ(s)

No data available

Potential Health Effects	Eye:	Contact may cause eye irritation with associated redness, swelling, and tears. Ammonia can cause eye damage with corneal burns if not rinsed promptly. Contact with rapidly expanding gas near the point of release may cause frostbite.
	Skin:	Contact may cause skin irritation and redness. Contact with rapidly expanding gas near the point of release may cause frostbite.
	Ingestion:	Accidental ingestion is unlikely as at ambient temperature and pressure (NTP) this product is a gas.
	Inhalation:	Products which contain small amounts of ammonia may act as simple asphyxiants. Release of sufficient quantities of these products may cause asphyxiation or suffocation by displacing oxygen content in the air. Ammonia is irritating and corrosive to the upper respiratory system and mucous membranes. Inhalation may cause chemical pneumonitis and pulmonary edema. Symptoms are dependent upon concentration inhaled and may include burning sensation, coughing, wheezing, shortness of breath, headache, nausea with eventual collapse and death.
Chronic Effects/ Carcinogenicity	IARC:	No ingredients listed in this section.
	NTP:	No ingredients listed in this section.
	OSHA:	No ingredients listed in this section.
Teratology (Birth Defects) Information	Teratology (Rat.):	Not Teratogenic at 10,000 ppm
Reproductive Information	(DOS)	no reproductive effects were seen in a two-generation reproduction study although retarded rate of weight gain and lower pup weights were noted.
NFPA Ratings	Health:	1
	Flammability:	0
	Reactivity:	0
HMIS Rating	Health:	1
	Flammability:	0
	Reactivity:	3
	Protective Equipment:	No data available

Section 3. Chemical Composition and Data on Components

Ingredient	CAS No.	Percent	Hazard Data	
			ACGIH TLV	OSHA PEL
Nitrogen	7727-37-9	95-100	Not available	Not available
Ammonia	7664-41-7	0.001 to 5.0	25 ppm TWA 35 ppm (STEL)	8 hr TWA 50 ppm

Section 4. First Aid Measures

General Advice	No data available
If Inhaled	PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek medical attention.
In Case of Skin Contact	Remove contaminated clothing and flush affected area with large quantities of water. If irritation persists, seek medical attention. If frostbite is suspected, flush with cool water for 15 minutes and obtain immediate medical attention.
In Case of Eye Contact	Immediately flush eyes with large amounts of water for at least 15 minutes opening and closing eyelids to ensure adequate rinsing. If frostbite is suspected, flush with cool water for 15 minutes and obtain immediate medical attention.
If Swallowed	Not anticipated, product is a gas at normal conditions.
Indication of Any Immediate Medical Attention and Special Treatment Needed	No data available

Section 5. Fire-fighting Measures

General Information	The majority of this product constitutes a nonflammable inert gas. Ammonia is present in concentrations below the Lower Explosive Limits (LEL). Cylinders may rupture violently from pressure when involved in a fire situation.
Suitable Extinguishing Media	Use water spray to keep cylinders cool. Use extinguishing agent appropriate for the combustible material.
Special Hazards Arising from the Substance or mixture	No data available
Advice for Firefighters	Continue to cool heat or flame exposed containers until well after the flames are extinguished. Since ammonia is soluble in water, it is the best extinguishing medium. Water will extinguish the fire and also absorb the escaped ammonia gas. Prevent entry of corrosive run-off waters into waterways and sewers. Firefighters should wear a full-facepiece, NIOSH/MSHA-approved self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear.
Flash Point	None
Autoignition Temperature	770 °C
Further Information	No data available

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures	Evacuate all personnel from affected area. Deny entry to unauthorized and unprotected individuals. Use appropriate protective equipment including respiratory protection for high or unknown concentrations. Personnel should not re-enter hazard area until ammonia is dispersed and adequate atmospheric oxygen is re-established.
Environmental Precautions	No data available
Methods and Materials for Containment and Cleaning	If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or valve, contact the appropriate emergency telephone number listed in section 1.
Reference to Other Sections	For disposal, see Section 13.

Section 7. Handling and Storage

Precautions for Safe Handling	Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous backflow into the cylinder.
Conditions for Safe Storage, Including any Incompatibilities	Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125O F (52OC). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Use a "first in, first out" inventory system to prevent full cylinders being stored for excessive period of time.
Specific End Use(s)	Apart from the uses mentioned in Section 1, no other specific uses are stipulated.

Section 8. Exposure Controls and Personal Protection

Components with Workplace Control Parameters	No data available
Appropriate Engineering Controls	Use local exhaust ventilation as necessary to maintain atmospheric oxygen levels above 19.5% and control air contaminants to below acceptable exposure guidelines.
Eye/Face Protection	Goggles should be worn.
Skin Protection	Protective gloves made of suitable material (i.e. butyl rubber) appropriate for the job.
Body Protection	Safety shoes, emergency eyewash station. IDLH: 300 ppm (ammonia)
Respiratory Protection	Positive pressure air line with full facepiece and escape bottle or SCBA should be available for emergency use.
Control of Environmental Exposure	No data available

Section 9. Physical and Chemical Properties

Appearance	Form: Gas; Color: Colorless
Odor	ammonia odor
Odor Threshold	4.68 ppm
pH	No data available
Melting Point/Freezing Point	No data available
Initial Boiling Point and Boiling Range	-195.8 °C
Flash Point	No data available
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	No data available
Water Solubility	No data available
Partition Coefficient : n-octanol/water	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No data available
Oxidizing Properties	No data available
Other Safety Information	No data available

Section 10. Stability and Reactivity

Reactivity	No data available
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	Hydrochloric and hydrofluoric acids; and carbonyl halides, such as phosgene.
Conditions to Avoid	Thermal decomposition will produce toxic fumes of NH ₃ and NO _x .
Incompatible Materials	Ammonia is corrosive to copper, zinc, and many metal surfaces. Ammonia may react with hypochlorite or other halogen sources to form explosive compounds which are pressure and temperature sensitive.

Section 11. Toxicological Information

Routes of Exposure	<i>On the skin:</i>	Concentrations of 5 to 10% ammonia rarely cause burns to the skin.
	<i>On the eye:</i>	Eye irritation was reported in 6 human volunteers exposed to 94 mg/m ³ ammonia for 5 minutes. At 700 ppm eye irritation and permanent injury may result if prompt remedial measures are not taken.
	<i>Inhalation:</i>	Irregular minute ventilation with cyclic patterns of hypernea, increases in blood pressure and pulse rate, variable lacrimation, and general complaints of upper respiratory irritation were reported during human exposures to 500 ppm ammonia for 30 minutes.
	<i>Ingestion:</i>	Deliberate suicidal ingestion of 5-10% ammonia (household ammonia) has resulted in esophageal burns.
Respiratory or Skin Sensitization	No data available	
Signs and Symptoms of Overexposure	No data available	
Toxicity Data	<i>Oral rat LD 50</i>	No data available

Section 12. Ecological Information

General Notes	Product does not contain Class I or Class II ozone depleting substances. In the environment, bacteria convert ammonia to nitrate creating an oxygen demand (BOD) for several days afterward. Ammonia combines with sulfate ion in the atmosphere or in washout by rainfall resulting in a rapid return of ammonia to the soil.
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Section 13. Disposal Considerations

Product	Do not attempt to dispose of waste or unused quantities in refillable cylinders. Return in the shipping container properly labeled with any valve outlet plugs or caps secure and valve protection cap in place to Norco for proper disposal. Non refillable cylinders may be safely vented outdoors and disposed of in accordance with State and/or local regulations.
Contaminated Packaging	No data available

Section 14. Transport Information

DOT Shipping Name	Compressed gas, N.O.S. (Nitrogen, Ammonia)
UN Proper Shipping Name	Compressed gas, N.O.S. (Nitrogen, Ammonia)
DOT Hazard Class	2.2
Packing Group	No data available
UN Number	UN1956
Hazardous Ingredients	No data available
DOT Label	Non-flammable gas
DOT Placard	No data available

IMDG Shipping Name	Compressed gas, N.O.S. (Nitrogen, Ammonia)
UN Number	UN1956
Class	2.2
Packing Group	No data available

IATA Shipping Name	Compressed gas, N.O.S. (Nitrogen, Ammonia)
Technical Shipping Name	Compressed gas, N.O.S. (Nitrogen, Ammonia)
IATA Hazard Class	2.2
UN Number	UN1956
Hazardous Ingredients	No data available
IATA Label	Non-flammable gas
IATA Placard	No data available

Section 15. Regulatory Information

OSHA Status	Ammonia is listed under the accident prevention provisions of section 112(R) of the Clean Air Act (CAA) with a threshold quantity (TQ) of 10,000 pounds.
TSCA Status	No data available
CERCLA Reportable Quantity	No data available
SARA Title III	Releases of ammonia in quantities equal to or greater than the reportable quantity (RQ) of 100 pounds are subject to reporting to the National Response Center under CERCLA, Section 304 SARA Title III.
RCRA Status	No data available
California Proposition 65	This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.
Chemical Weapons Convention	No data available
TSCA 12 (b)	No data available
SARA 311/312	Acute: Yes Chronic: No data available Fire: No data available Pressure: Sudden release of pressure Reactivity: No data available
Australian Hazchem Code	No data available
Poison Schedule	No data available
WHMIS	This product has been evaluated in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

Section 16. Other Information

Date Prepared: August 5, 2003

Revised: May 27, 2015

For R&D use only. Not for drug, household, or other uses.

Subject to U.S. Environmental Protection Agency Clean Air Act Regulations at 40 CFR Part 82. Section 611 requires the following label text on all shipments of this product. WARNING: DO NOT VENT TO THE ATMOSPHERE, TO COMPLY WITH PROVISIONS OF THE U.S.CLEAN AIR ACT, ANY RESIDUAL MUST BE RECOVERED, CONTAINS DICHLOROTRIFLUOROETHANE (HCFC-123). A SUBSTANT WITH HARMS PUBLIC HEALTH AND ENVIRONMENT BY DESTROYING OZONE IN THE UPPER ATMOSPHERE.

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