رقيط للغازات الصناعية
Rakeeth Industrial Gases

Ammonia (NH_3, R-717)

CAS: 7664-41-7 UN: 1005

Characteristics

Colourless liquefied gas with a penetrating and suffocating odour

Combustible but hard to ignite.

Health Risks

Toxic

Irritates mucous membranes and eyes. High concentrations give rise to cramp in the windpipe and pulmonary oedema

Good odour warning.

Transport

ADR Class 2, 2TC  DOT Class 2,3 

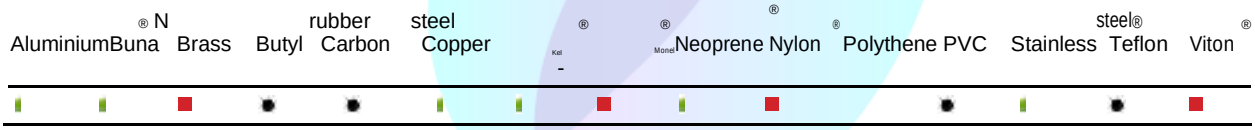
Product Description	Size (kg)	Material Number	Recommended Regulator
Ammonia N3.5	68,0	540201-LH-N	W020120
Ammonia N3.5	1 400,0	540201-TE-C	Recommendation on Request
Ammonia N3.5	Bulk	5374	Recommendation on Request
Ammonia N5.5	1 400,0	542701-TE-C	Recommendation on Request

Standard Specifications		
Ammonia RG (N3.5)	Refrigerant Grade	
Purity (%)	>99,95	
Maximum Impurities (ppm)	Moisture Oil	<100 <100
Stability Period (years)	3	
Material Code	540201-LH-N	
Valve	CGA240 modified	
Pressure @ 20ºC	8,56 bar	
Cylinder	Low pressure steel	
Mass of Gas in Cylinder	68 kg	
Volume of Gas @ 101,3 kPa (absolute)	93,4 m_3	
Flammability in Air	15 - 27%	
Applications	Refrigeration	
Precautions	Toxic corrosive gas	

Standard Specifications

Ammonia UHPG (N5.5)	Ultra-High Purity Grade	
Purity (%)	>99,9995	
Maximum Impurities (ppm)	Oxygen Moisture Nitrogen Carbon dioxide Carbon monoxide THC as CH_4 Total impurities not to exceed	<0,5 <1,5 <0,5 <0,5 <0,5 <1 <5
Material Code	542701-TE-C	
Colour Code	Silver red yellow	
Valve	1 3/4” NPT	
Pressure	8,56 bar	
Cylinder	Tank	
Mass of Gas in Cylinder	1 400 kg	
Volume of Gas @ 101,3 kPa (absolute)	2 388 m_3	
Flammability in Air	15 - 27%	
Applications	Electronics	
Precautions	Toxic corrosive gas	

Material Compatibility



Source

- Ammonia is manufactured using the Haber-Bosch process, consisting of a direct reaction between hydrogen and nitrogen, in the molar proportions 3:1.

Applications

- Anhydrous ammonia, with the ASHRAE number R-717, is one of the oldest commercial refrigerants known. It is used in both absorption and compression type systems as well as being used in soil fertilisation. In soil fertilisation, it is used in the form of ammonia, ammonia salts, nitrates and urea. It is also added to fertilisers containing superphosphates and in making nitrogen containing solutions which consist of ammonia and ammonium nitrate or urea, or both in water. Anhydrous ammonia is also used in combination with chlorine to purify municipal and industrial water supplies.
- Ammonia, or rather dissociated ammonia, is used in such metal treating operations as nitriding, carbo-nitriding, bright annealing, furnace brazing, sintering, sodium hydride descaling, atomic hydrogen welding and other applications where protective atmospheres are required. It is used in extracting such metals as copper, nickel and molybdenum from their ores. It is also used to reduce atmosphere in heat treatment of metals and for the fabrication of silicium nitride.
- Dissociated ammonia is also used as a convenient source of hydrogen for the hydrogenation of fats and oils. Through the controlled combustion of dissociated ammonia in air, a source of pure nitrogen is achieved.
- The petroleum industry utilises anhydrous ammonia
- Ammonia is a reagent in copying machines
- As a processing agent, ammonia is used in the manufacturing of alkalis, ammonium salts, dyes, pharmaceuticals, cuprammonium rayon, and nylon.
- A diluted solution of ammonia in water is used as a common household cleansing agent. More concentrated forms are used extensively as chemical reagents.
- A recent development is the substitution of ammonia for calcium in the bisulphite pulping of wood. This improves the yield and quality of the pulp. Ammonia is also used as a solvent for casein in the coating of paper.
- Ammonia is used in the rubber industry for stabilisation of raw latex to prevent coagulation during transportation and storage.

  Ammonia is used as a catalyst in the phenol-formaldehyde condensation and also in the urea-formaldehyde condensation to make synthetic resin.
- Ammonia is also used to produce proteins and can be used to improve the protein content of low-quality hay.
- Ammonia is used as a component in calibration gas mixtures for gas detection systems as well as environmental emission monitoring.
- Ammonia is widely used in the semiconductor industry.
- Ammonia is used in the production of blue and white LEDs (Light Emitting Diodes).
- Ammonia can be used to neutralise nitric oxides emitted by diesel engines by selective catalytic reduction.