

**AMMONIA (ANHYDROUS)****0414**

October 1991

CAS No: 7664-41-7  
 RTECS No: BO0875000  
 UN No: 1005  
 EC No: 007-001-00-5

NH<sub>3</sub>  
 Molecular mass: 17.03

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Flammable.	NO open flames, NO sparks, and NO smoking.	In case of fire in the surroundings: all extinguishing agents allowed.
<b>EXPLOSION</b>	Gas/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting.	In case of fire: keep cylinder cool by spraying with water.

EXPOSURE		AVOID ALL CONTACT!	
<b>Inhalation</b>	Burning sensation. Cough. Laboured breathing. Shortness of breath. Sore throat. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration if indicated. Refer for medical attention.
<b>Skin</b>	Redness. Skin burns. Pain. Blisters. ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves. Protective clothing.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.
<b>Eyes</b>	Redness. Pain. Severe deep burns.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>Ingestion</b>			

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. NEVER direct water jet on liquid. Remove gas with fine water spray (extra personal protection: gas-tight chemical protection suit including self-contained breathing apparatus).	T Symbol N Symbol R: 10-23-34-50 S: (1/2-)9-16-26-36/37/39-45-61 UN Hazard Class: 2.3 UN Subsidiary Risks: 8

EMERGENCY RESPONSE	STORAGE
Transport Emergency Card: TEC (R)-1 NFPA Code: H3; F1; R0;	Fireproof. Separated from oxidants, acids, halogens. Cool. Keep in a well-ventilated room.

## IMPORTANT DATA

**Physical State; Appearance**

COLOURLESS, COMPRESSED LIQUEFIED GAS, WITH PUNGENT ODOUR.

**Physical Dangers**

The gas is lighter than air.

**Chemical Dangers**

Shock-sensitive compounds are formed with mercury, silver and gold oxides. The substance is a strong base, it reacts violently with acid and is corrosive. Reacts violently with strong oxidants and halogens. Attacks copper, aluminum, zinc and their alloys. Dissolves in water evolving heat.

**Occupational Exposure Limits**

TLV: 25 ppm; 17 mg/m<sup>3</sup> (as TWA);  
35 ppm; 24 mg/m<sup>3</sup> (as STEL) (ACGIH 1997).  
MAK: 20 ppm; 14 mg/m<sup>3</sup>; (1993)

**Routes of Exposure**

The substance can be absorbed into the body by inhalation.

**Inhalation Risk**

A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

**Effects of Short-term Exposure**

The substance is corrosive to the eyes, the skin, and the respiratory tract. Inhalation of high concentrations may cause lung oedema (see Notes). Rapid evaporation of the liquid may cause frostbite.

## PHYSICAL PROPERTIES

Boiling point: -33°C  
Melting point: -78°C  
Relative density (water = 1): 0.7 at -33°C  
Solubility in water, g/100 ml at 20°C: 54

Vapour pressure, kPa at 26°C: 1013  
Relative vapour density (air = 1): 0.59  
Auto-ignition temperature: 651°C  
Explosive limits, vol% in air: 15-28

## ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

## NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorized by him/her, should be considered. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state.

## ADDITIONAL INFORMATION

## LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information