AMMONIA (ANHYDROUS)

0414
March 1998

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

(cylinder)
NH_3
Molecular mass: 17.03

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	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!**	
Inhalation	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 may be needed. Refer for medical attention.
Skin	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.
Eyes	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.
Ingestion			

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. NEVER direct water jet on liquid. Remove gas with fine water spray. 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	SAFE STORAGE
Transport Emergency Card: TEC (R)-20S1005 or 20G2TC NFPA Code: H3; F1; R0	Fireproof. Separated from oxidants, acids, halogens. Cool. Keep in a well-ventilated room.

IPCS
International Programme on Chemical Safety

Prepared in the context of cooperation between the International Programme on Chemical Safety and the European Commission

SEE IMPORTANT INFORMATION ON THE BACK.

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 as TWA; 35 ppm as STEL; (ACGIH 2004).
MAK: 20 ppm, 14 mg/m^3; Peak limitation category: I(2); Pregnancy risk group: C; (DFG 2004).

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 inhalation therapy 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.
Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

ADDITIONAL INFORMATION