

HYDRAZINE

0281

March 1995

CAS No: 302-01-2
RTECS No: MU7175000
UN No: 2029
EC No: 007-008-00-3

Diamide
Diamine
Nitrogen hydride
(anhydrous)
 N_2H_4 / H_2N-NH_2
Molecular mass: 32.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
EXPLOSION	Above 38/C explosive vapour/air mixtures may be formed. Risk of fire and explosion on contact with many materials.	Above 38/C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.
EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Corrosive. Burning sensation. Cough. Headache. Nausea. Shortness of breath. Sore throat. Convulsions.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Refer for medical attention.
Skin	Corrosive. MAY BE ABSORBED! Redness. Skin burns. Pain.	Protective gloves. Protective clothing.	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention. Wear protective gloves when administering first aid.
Eyes	Corrosive. Redness. Pain. Severe deep burns.	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	Corrosive. Abdominal cramps. Confusion. Convulsions. Unconsciousness. Vomiting. Weakness.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.
SPILLAGE DISPOSAL		PACKAGING & LABELLING	
Evacuate danger area! Consult an expert! Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT absorb in saw-dust or other combustible absorbents. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.		T Symbol N Symbol R: 45-10-23/24/25-34-43-50/53 S: 53-45-60-61 Note: E UN Hazard Class: 8 UN Subsidiary Risks: 3 and 6.1 UN Pack Group: I	
EMERGENCY RESPONSE		SAFE STORAGE	
Transport Emergency Card: TEC (R)-80S2029 NFPA Code: H3; F3; R2		Fireproof. Separated from food and feedstuffs. See Chemical Dangers.	

IMPORTANT DATA

Physical State; Appearance

COLOURLESS FUMING AND HYGROSCOPIC LIQUID, WITH PUNGENT ODOUR.

Chemical dangers

The substance decomposes producing ammonia fumes, hydrogen and nitrogen oxides, causing fire and explosion hazard. The substance is a strong reducing agent and reacts violently with oxidants. The substance is a medium strong base. Reacts violently with many metals, metal oxides and porous materials causing fire and explosion hazard. Air or oxygen is not required for decomposition.

Occupational exposure limits

TLV: 0.01 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).
MAK: skin absorption (H); sensitization of skin (Sh); Carcinogen category: 2; (DFG 2004).

Routes of exposure

The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

Inhalation risk

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20/C.

Effects of short-term exposure

The substance is corrosive to the eyes and the skin. The vapour of this substance is corrosive to the respiratory tract. Inhalation of the vapour may cause lung oedema (see Notes). The substance may cause effects on the liver kidneys and central nervous system. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

Effects of long-term or repeated exposure

Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the liver, kidneys and central nervous system. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 114/C
Melting point: 2/C
Relative density (water = 1): 1.01
Solubility in water: very good
Vapour pressure, kPa at 20/C: 1.4
Relative vapour density (air = 1): 1.1

Relative density of the vapour/air-mixture at 20/C (air = 1): 1.00
Flash point: 38/C c.c.
Auto-ignition temperature: see Notes
Explosive limits, vol% in air: 1.8-100
Octanol/water partition coefficient as log Pow: -3.1

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

NOTES

Auto-ignition temperature varies from 24/C on a rusty iron surface to 270/C on glass surface.
Depending on the degree of exposure, periodic medical examination is suggested.
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 are therefore essential.
Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.
The odour warning when the exposure limit value is exceeded is insufficient.
Rinse contaminated clothes (fire hazard) with plenty of water.
Other UN numbers are: UN 2030 Hydrazine hydrate or Hydrazine, aqueous solutions with 37-64% of hydrazine; UN 3293 Hydrazine, aqueous solutions with not more than 37% of hydrazine.
Card has been partly updated in October 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

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