DIETHYLAMINE

0444
October 1997

CAS No: 109-89-7
RTECS No: HZ8750000
UN No: 1154
EC No: 612-003-00-X

N,N-Diethylamine
N-Ethylethanamine
Diethamine
$C_4H_{11}N$ / $(C_2H_5)_2NH$
Molecular mass: 73.14

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water in large amounts, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
Inhalation	Sore throat. Cough. Burning sensation. Shortness of breath. Laboured breathing. Chest pain. 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	MAY BE ABSORBED! Pain. Redness. Blisters. Skin burns. (See Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Pain. Redness. Severe deep burns. Loss of vision.	Safety goggles, 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	Burning sensation. Abdominal pain. Diarrhoea. Nausea. Vomiting. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING	
Evacuate danger area! Ventilation. Remove all ignition sources. Collect leaking liquid in sealable containers. Cautiously neutralize remainder then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: chemical protection suit including self-contained breathing apparatus.	F Symbol C Symbol R: 11-20/21/22-35 S: (1/2-)3-16-26-29-36/37/39-45 UN Hazard Class: 3 UN Subsidiary Risks: 8 UN Pack Group: II	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-30S1154 or 30GFC-II NFPA Code: H3; F3; R0	Fireproof. Separated from food and feedstuffs. See Chemical Dangers. Well closed.

IPCS
International Programme on Chemical Safety

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

IMPORTANT DATA

Physical State; Appearance
COLOURLESS LIQUID, WITH PUNGENT ODOUR.

Physical dangers
The vapour is heavier than air and may travel along the ground; distant ignition possible.

Chemical dangers
The substance decomposes on heating or on burning producing toxic fumes including nitrogen oxides. The substance is a medium strong base. Reacts with strong oxidants causing fire and explosion hazard. Contact with nitrocyanofurazan is instantaneously explosive.

Occupational exposure limits
TLV: 5 ppm as TWA, 15 ppm as STEL; (skin); A4 (not classifiable as a human carcinogen); (ACGIH 2004).
MAK: 5 ppm, 15 mg/m^3; Peak limitation category: I(2); Pregnancy risk group: IIc; (DFG 2005).

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 and the vapour are corrosive to the eyes, the skin and the respiratory tract. Inhalation of the vapour may cause lung oedema (see Notes). The effects may be delayed. Medical observation is indicated.

PHYSICAL PROPERTIES

Boiling point: 55.5/C
Melting point: -50/C
Relative density (water = 1): 0.707
Solubility in water: miscible
Vapour pressure, kPa at 20/C: 25.9
Relative vapour density (air = 1): 2.5
Flash point: <-26/C c.c.
Auto-ignition temperature: 312/C
Explosive limits, vol% in air: 1.8-10.1
Octanol/water partition coefficient as log Pow: 0.58

ENVIRONMENTAL DATA

The substance is harmful 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.
Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

ADDITIONAL INFORMATION