

PIPERIDINE

0317

November 2003

CAS No: 110-89-4
 RTECS No: TM3500000
 UN No: 2401
 EC No: 613-027-00-3

Hexahydropyridine
 Azacyclohexane
 Pentamethyleneimine
 $C_5H_{11}N / CH_2(CH_2)_4NH$
 Molecular mass: 85.2

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Highly flammable.	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		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
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	MAY BE ABSORBED! Redness. Skin burns. Pain.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Redness. Pain. Blurred vision. 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	Abdominal pain. Burning sensation. Laboured breathing. 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
Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. (Extra personal protection: self-contained breathing apparatus.)	F Symbol T Symbol R: 11-23/24-34 S: (1/2-)16-26-27-45 UN Hazard Class: 8 UN Subsidiary Risks: 3 UN Pack Group: I

EMERGENCY RESPONSE	STORAGE
Transport Emergency Card: TEC (R)-80GCF1-I NFPA Code: H 3; F 3; R 3	Fireproof. Separated from strong oxidants, acids, and incompatible materials. See Chemical Dangers.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS LIQUID, WITH CHARACTERISTIC ODOUR.

Physical dangers

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

Chemical dangers

The substance decomposes on burning producing toxic fumes including nitrogen oxides. The substance is a medium strong base. Reacts violently with oxidants. Reacts violently with dicyanofurazan, N-nitrosoacetanilide and 1-perchloryl-piperidine, causing explosion hazard.

Occupational exposure limits

TLV not established.

Routes of exposure

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

Inhalation risk

No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20°C.

Effects of short-term exposure

The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of the vapour at high level may cause lung oedema (see Notes). The effects may be delayed. Medical observation is indicated.

PHYSICAL PROPERTIES

Boiling point: 106°C

Melting point: -7°C

Relative density (water = 1): 0.86

Solubility in water: miscible

Vapour pressure, kPa at 29.2°C: 5.3

Relative vapour density (air = 1): 3.0

Relative density of the vapour/air-mixture at 20°C (air = 1): 1.10

Flash point: 16°C c.c.

Octanol/water partition coefficient as log Pow: 0.84

ENVIRONMENTAL DATA

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.

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