


**PIPERIDINE****ICSC: 0317**

**Date of Peer  
Review:  
November  
2003**

Hexahydropyridine  
Azacyclohexane  
Pentamethyleneimine

CAS # 110-89-4                      C<sub>5</sub>H<sub>11</sub>N / CH<sub>2</sub>(CH<sub>2</sub>)<sub>4</sub>NH  
RTECS # TM3500000                Molecular mass: 85.2  
UN # 2401  
EC # 613-027-00-3

<b>TYPES OF HAZARD / EXPOSURE</b>	<b>ACUTE HAZARDS / SYMPTOMS</b>	<b>PREVENTION</b>	<b>FIRST AID / FIRE FIGHTING</b>
<b>FIRE</b>	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water in large amounts, carbon dioxide.
<b>EXPLOSION</b>	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.
<b>EXPOSURE</b>		<b>STRICT HYGIENE!</b>	<b>IN ALL CASES CONSULT A DOCTOR!</b>
<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 may be needed. Refer for medical attention.
<b>Skin</b>	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.
<b>Eyes</b>	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.
<b>Ingestion</b>	Abdominal pain.	Do not eat, drink, or	Rinse mouth. Do NOT

	Burning sensation. Laboured breathing. Shock or collapse.	smoke during work.	induce vomiting. Give plenty of water to drink. Refer for medical attention.
<b>SPILLAGE DISPOSAL</b>		<b>PACKAGING &amp; LABELLING</b>	
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.)		<b>EU Classification</b> Symbol: F, T R: 11-23/24-34 S: (1/2-)-16-26-27-45 <b>UN Classification</b> UN Hazard Class: 8 UN Subsidiary Risks: 3 UN Pack Group: I	
<b>EMERGENCY RESPONSE</b>		<b>STORAGE</b>	
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.	
<b>IPCS</b> International Programme on Chemical Safety		Prepared in the context of cooperation between the International Programme on Chemical Safety and the Commission of the European Communities © IPCS, CEC 1999	
		<b>SEE IMPORTANT INFORMATION ON BACK</b>	

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### 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

Relative density of the vapour /air-mixture at 20°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	(air = 1): 1.10 Flash point: 16°C c.c. Octanol/water partition coefficient as log Pow: 0.84
<b>ENVIRONMENTAL DATA</b>	
<b>NOTES</b>	
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.	
<b>ADDITIONAL INFORMATION</b>	
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