

# HYDROGEN CYANIDE, LIQUEFIED

**0492**  
May 2003

**CAS No: 74-90-8**  
RTECS No: MW6825000  
UN No: 1051  
EC No: 006-006-00-X

Hydrocyanic acid  
Prussic acid  
Formonitrile  
HCN  
Molecular mass: 27.03

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Extremely flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with powder, water spray, foam, carbon dioxide.
<b>EXPLOSION</b>	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. Combat fire from a sheltered position.

EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
<b>Inhalation</b>	Confusion. Drowsiness. Headache. Nausea. Convulsions. Shortness of breath. Unconsciousness. Death.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. No mouth-to-mouth artificial respiration. Administer oxygen by trained personnel. Refer for medical attention. See Notes.
<b>Skin</b>	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Rinse skin with plenty of water or shower. Refer for medical attention. Wear protective gloves when administering first aid.
<b>Eyes</b>	VAPOUR WILL BE ABSORBED! Redness. (See Inhalation).	Safety goggles, 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>	Burning sensation. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. No mouth-to-mouth artificial respiration. Administer oxygen by trained personnel. Refer for medical attention. See Notes.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area immediately! Consult an expert! Ventilation. Remove all ignition sources. Absorb remaining liquid in sand or inert absorbent and remove to safe place. NEVER direct water jet on liquid. Do NOT let this chemical enter the environment. Gas-tight chemical protection suit including self-contained breathing apparatus.	F+ Symbol T+ Symbol N Symbol R: 12-26-50/53 S: (1/2-)7/9-16-36/37-38-45-60-61 UN Hazard Class: 6.1 UN Subsidiary Risks: 3 UN Pack Group: I Marine pollutant.

EMERGENCY RESPONSE	STORAGE
Transport Emergency Card: TEC (R)-61S1051 NFPA Code: H4; F4; R2	Fireproof. Separated from food and feedstuffs. Cool. Store only if stabilized.

## IMPORTANT DATA

**Physical State; Appearance**

COLOURLESS GAS OR LIQUID, WITH CHARACTERISTIC ODOUR.

**Physical dangers**

The gas mixes well with air, explosive mixtures are easily formed.

**Chemical dangers**

The substance may polymerize due to heating under the influence of base(s), over 2% water, or if not chemically stabilized, with fire or explosion hazard. On combustion, forms toxic and corrosive gases including nitrogen oxides. The solution in water is a weak acid. Reacts violently with oxidants, hydrogen chloride in alcoholic mixtures, causing fire and explosion hazard.

**Occupational exposure limits**

TLV: 4.7 ppm; (Ceiling value); (skin); (ACGIH 2003).  
MAK: 1.9 ppm, 2.1 mg/m<sup>3</sup>; H; Peak limitation category: II(2);  
Pregnancy risk group: C; (DFG 2002).

**Routes of exposure**

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

**Inhalation risk**

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

**Effects of short-term exposure**

The substance is irritating to the eyes and the respiratory tract. The substance may cause effects on the cellular respiration, resulting in convulsions and unconsciousness. Exposure may result in death. Medical observation is indicated. See Notes.

**Effects of long-term or repeated exposure**

The substance may have effects on the thyroid.

## PHYSICAL PROPERTIES

Boiling point: 26°C

Melting point: -13°C

Relative density (water = 1): 0.69 (liquid)

Solubility in water: miscible

Vapour pressure, kPa at 20°C: 82.6

Relative vapour density (air = 1): 0.94

Flash point: -18°C c.c.

Auto-ignition temperature: 538°C

Explosive limits, vol% in air: 5.6-40.0

Octanol/water partition coefficient as log Pow: -0.25

## ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

## NOTES

The occupational exposure limit value should not be exceeded during any part of the working exposure.

Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

The odour warning when the exposure limit value is exceeded is insufficient.

The recommendations on this Card also apply to hydrogen cyanide, stabilized, absorbed in a porous inert material.

Other UN numbers: 1613, Hydrogen cyanide, aqueous solution, not more than 20% of hydrogen cyanide; 1614, Hydrogen cyanide stabilized, absorbed in a porous inert material; 3294, Hydrogen cyanide solution in alcohol, not more than 45% of hydrogen cyanide.

Never work alone in an area if hydrogen cyanide exposure is possible.

Depending on the degree of exposure, periodic medical examination is suggested.

## 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