

# MALONONITRILE

1466  
May 2003

CAS No: 109-77-3  
RTECS No: OO3150000  
UN No: 2647  
EC No: 608-009-00-7

Propanedinitrile  
Malonic acid dinitrile  
Cyanoacetoneitrile  
Methylene dinitrile  
 $C_3H_2N_2$  /  $NCCH_2CN$   
Molecular mass: 66.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Combustible.	NO open flames.	Water spray, dry powder, foam, carbon dioxide.
<b>EXPLOSION</b>	Risk of fire and explosion: See Chemical Dangers.		

EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
<b>Inhalation</b>	Dizziness. Laboured breathing. Nausea. Vomiting. Weakness. Confusion. Convulsions. Unconsciousness.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention. Half-upright position.
<b>Skin</b>	MAY BE ABSORBED! Redness. Pain.	Protective clothing. Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
<b>Eyes</b>	Redness. Pain.	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>	Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Remove all ignition sources. Vacuum spilled material or sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Do NOT let this chemical enter the environment. (Extra personal protection: chemical protection suit including self-contained breathing apparatus.)	T Symbol N Symbol R: 23/24/25-50/53 S: (1/2-)23-27-45-60-61 UN Hazard Class: 6.1 UN Pack Group: II  Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	STORAGE
Transport Emergency Card: TEC (R)-61GT2-II	Cool. Separated from strong bases, food and feedstuffs. Well closed. Keep in a well-ventilated room.

### IMPORTANT DATA

**Physical State; Appearance**

COLOURLESS CRYSTALS OR WHITE POWDER

**Chemical dangers**

The substance will polymerize under the influence of temperatures above 130°C or under the influence of base(s) with fire or explosion hazard. The substance decomposes on heating producing toxic and corrosive gases, including hydrogen cyanide and nitrogen oxides. Attacks many metals forming flammable/explosive gas (hydrogen - see ICSC 0001).

**Occupational exposure limits**

TLV not established.

**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 rather slowly on evaporation of this substance at 20°C.

**Effects of short-term exposure**

The substance is severely irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the cellular respiration (inhibition), resulting in convulsions, cardiac disorders and respiratory failure. Exposure at high levels may result in death. Medical observation is indicated. The effects may be delayed.

### PHYSICAL PROPERTIES

Boiling point: 218-220°C

Melting point: 30-34°C

Density: 1.19 g/cm<sup>3</sup>

Solubility in water, g/100 ml at 20°C: 13.3 moderate

Vapour pressure, Pa at 25°C: 27

Relative vapour density (air = 1): 2.3

Flash point: 112°C o.c.

Octanol/water partition coefficient as log Pow: -0.6

### ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms.

### NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

### 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