

化学品安全技术说明书

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**MSDS标题**

MALONONITRILE MSDS报告

**产品标题**

二氰甲烷;二氰基甲烷;氰化亚甲基;缩苹果腈

**CAS号**

109-77-3

**化学品及企业标识**

**PRODUCT NAME**

MALONONITRILE

**NFPA**

Flammability	1
Toxicity	3
Body Contact	3
Reactivity	1
Chronic	2

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

**PRODUCT USE**

Organic syntheses. Intermediate

## **SYNONYMS**

C3-H2-N, propanedinitrile, dicyanomethane, cyanoacetonitrile, malonodinitrile, methylenedinitrile, "malnoic acid dinitrile", "methylene cyanide", "malonic dinitrile", "malonitrile (sic)"

## **CANADIAN WHMIS SYMBOLS**

None

## **EMERGENCY OVERVIEW**

### **RISK**

Contact with acids liberates very toxic gas.

Irritating to eyes.

Toxic by inhalation, in contact with skin and if swallowed.

May cause long- term adverse effects in the environment.

Very toxic to aquatic organisms, may cause long- term adverse effects in the aquatic environment.

## **POTENTIAL HEALTH EFFECTS**

### **ACUTE HEALTH EFFECTS**

#### **SWALLOWED**

Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. Cyanide poisoning can cause increased saliva output, nausea without vomiting, anxiety, confusion, vertigo, dizziness, stiffness of the lower jaw, convulsions, spasm, paralysis, coma and irregular heartbeat, and stimulation of breathing followed by failure. Often the skin becomes cyanosed (blue-gray), and this is often delayed. Doses which are not lethal are eventually excreted in the urine. Nitrile poisoning exhibits similar symptoms to poisoning due to hydrogen cyanide. The substances irritate the eyes and skin, and are absorbed quickly and completely through the skin. The use of the term "organic nitriles" should be discouraged.

#### **EYE**

There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. There may be damage to the cornea. Unless treatment is prompt and adequate there may be permanent loss of vision. Conjunctivitis can occur following repeated exposure.

## **SKIN**

Skin contact with the material may produce toxic effects; systemic effects may result following absorption. The material is not thought to be a skin irritant (as classified using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

## **INHALED**

Inhalation of vapors, aerosols (mists, fumes) or dusts, generated by the material during the course of normal handling, may produce toxic effects. The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

## **CHRONIC HEALTH EFFECTS**

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray. Chronic exposure to cyanides and certain nitriles may result in interference to iodine uptake by thyroid gland and its consequent enlargement. This occurs following metabolic conversion of the cyanide moiety to thiocyanate. Thyroid insufficiency may also occur as a result of metabolic conversion of cyanides to the corresponding thiocyanate. Exposure to small amounts of cyanide compounds over long periods are reported to cause loss of appetite, headache, weakness, nausea, dizziness, abdominal pain, changes in taste and smell, muscle cramps, weight loss, flushing of the face, persistent runny nose and irritation of the upper respiratory tract and eyes. These symptoms are not specific to cyanide exposure and therefore the existence of a chronic cyanide toxicity remains speculative. Repeated minor contact with cyanides produce a characteristic rash with itching, papules (small, superficial raised spots on the skin) and possible sensitization. Concerns have been expressed that low-level, long term exposures may result in damage to the nerves of the eye. Rats exposed to 36 mg/m<sup>3</sup> for 2 hours per day for 35 days showed increased lung weight and a slight decrease in the blood haemoglobin accompanied by an increase in reticulocytes.