

化 学 品 安 全 技 术 说 明 书

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**MSDS标题**

O-CHLOROBENZYLIDENE MALONONITRILE CS GAS MSDS报告

**产品标题**

邻氯苄叉丙二腈;2-氯苯亚甲基丙二腈;邻氯亚苄基丙二腈

**CAS号**

2698-41-1

**化学品及企业标识**

**PRODUCT NAME**

O-CHLOROBENZYLIDENE MALONONITRILE CS GAS

**NFPA**

|              |   |
|--------------|---|
| Flammability | 1 |
| Toxicity     | 4 |
| Body Contact | 2 |
| Reactivity   | 1 |
| Chronic      | 2 |

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

**PRODUCT USE**

Operators should be trained in procedures for safe use of this material. As a lachrymatory war gas, or as incapacitating agent for riot control in law enforcement. The solid is disseminated as an aerosol from burning grenades or as an aerosol from solution in acetone or methylene chloride.

## SYNONYMS

C10-H5-Cl-N2, Cl-C6H4CH=C(CN)2, "propanedinitrile, [(2-chlorophenyl)methylene]-", "CS gas", OCBM, "tear gas", "alpha-(o-chlorobenzylidene) malononitrile", "malononitrile, (o-chlorobenzylidene)-", (o-chlorobenzal)malononitrile, 2-chlorobenzalmalononitrile, 2-chlorobenzalmalononitrile, 2-chlorobenzylidenemalononitrile, 2-chlorobenzylidenemalononitrile, lacrimator, lachrymator

## CANADIAN WHMIS SYMBOLS

## EMERGENCY OVERVIEW

### RISK

Toxic if swallowed.

Contact with acids liberates very toxic gas.

Irritating to eyes.

Harmful to aquatic organisms.

## POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Overexposure is unlikely in this form. 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. 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. 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.

#### 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. Irritation of the eyes may produce a heavy secretion of tears (lachrymation).

## **SKIN**

There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering. Skin contact is not thought to produce harmful health effects (as classified using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. 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 or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severe damage to the health of the individual. Relatively small amounts absorbed through the lungs may prove fatal. Inhalation hazard is increased at higher temperatures. 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.

## **CHRONIC HEALTH EFFECTS**

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. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. There is limited evidence that, skin contact with this product is more likely to cause a sensitization reaction in some persons compared to the general population. 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. Sensitization may result in allergic dermatitis responses including rash, itching, hives or swelling of extremities. Sensitization reactions may appear suddenly after repeated symptom free exposures.

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