

## 化 学 品 安 全 技 术 说 明 书

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### MSDS标题

M-NITROPHENOL MSDS报告

### 产品标题

间硝基酚;3-硝基酚;3-硝基苯酚

### CAS号

554-84-7

### 化学品及企业标识

## PRODUCT NAME

M-NITROPHENOL

## NFPA

Flammability	1
Toxicity	2
Body Contact	2
Reactivity	2
Chronic	2
SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4	

## PRODUCT USE

Used as indicator in 0.3% in 50% alcohol, pH : 6.8 colourless, 8.6 yellow. Intermediate

## SYNONYMS

C6-H5-N-O3, C6-H5-N-O3, O2NC6H4OH, meta-nitrophenol, m-hydroxynitrobenzene, m-hydroxynitrobenzene, meta-hydroxynitrobenzene, 3-hydroxynitrobenzene, 3-hydroxynitrobenzene

## CANADIAN WHMIS SYMBOLS

None

## EMERGENCY OVERVIEW

### RISK

Harmful if swallowed.

## POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The substance and/or its metabolites may bind to hemoglobin inhibiting normal uptake of oxygen. This condition, known as "methemoglobinemia", is a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discoloration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure. At about 15% concentration of blood methemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion. At 40-60%, symptoms include weakness, dizziness, lightheadedness, increasingly severe headache, ataxia, rapid shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. Above 60% symptoms include dyspnea, respiratory depression, tachycardia or bradycardia, and convulsions. Levels exceeding 70% may be fatal. Breathing in nitrophenols may result in irritation of the lining of the nasal passage, and mouth and poisoning of the bodies nervous system. Poisoning of the bodies central nervous system, reduces the bloods capacity to carry oxygen to the bodies tissues and organs. Flushed face, headache and a sense of elation are common. Moderate exposure may produce bluish discoloration of the lips, earlobes, and finger nails. A loss of muscle coordination may occur along with difficulty breathing, drowsiness, nausea, vomiting. High concentrations may result in rapid beating of the heart, rapid violent spasms of the bodies muscles and loss of consciousness.

## EYE

There is some evidence to suggest that this material can cause eye irritation and damage in some persons. Moderate to severe corneal cloudiness, blistered conjunctival tissue, and corneal neovascularisation were observed in rabbits after a single application of 27 mg of solid 4-nitrophenol/kg into the conjunctival sac. Only in one of six rabbits the effects appeared to be reversible during a 21-day observation period. 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 damage the health of the individual; systemic effects may result following absorption. There is some evidence to suggest that the material may cause moderate 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. Erythema and edema at the site of application were the most prevalent signs of exposure in rabbits when a saline suspension of 5,000 mg 4-nitrophenol was applied to the abraded dorsal surface for 24 hours. No adverse effects were noticed in the shaved dorsal surface of rabbits after application of 147 mg of dry solid 4-nitrophenol/kg for 4 hours. However, when the solid 4-nitrophenol was applied moistened with saline, skin erythema and oedema were observed. Skin scabbing and scarring were reported in rabbits 14 days after application of 181 mg 4-nitrophenol/kg moistened with saline for 24 hours. Partial recovery was observed by day 21. Application of 4-nitrophenol in daily doses of 50-250 mg 4-nitrophenol/kg to the skin of rats for 120 days resulted in dose-related dermal irritation consisting of erythema, scaling, scabbing, and cracking of the skin. It is possible, however, that the solvent, ethanol, may have contributed to the development of these effects. Toxic effects may result from skin absorption. 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 may produce health damage\*. Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. 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. Evidence of absorption of 4-

nitrophenol by the inhalation route may be inferred from the fact that rats exposed to dusts of 4-nitrophenol (sodium salt) for 2 weeks developed adverse systemic effects. Inhalation of nitrophenols may produce mucous membrane irritation and systemic poisoning. The nitrophenols produce central and peripheral vagus stimulation, central nervous system depression, methaemoglobinaemia, observable cyanosis with blue lips, earlobes and finger nails. Although signs may be absent, flushed face, headache and euphoria are common. Moderate exposures may produce a marked cyanosis, weakness, dizziness, lightheadedness, increasingly severe headache, ataxia and shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. High concentrations may produce tachycardia, convulsions and coma.

## **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. Exposure over a long period of time to nitrophenols may produce kidney and liver damage. Inflammation of the colon, intestine, liver, stomach, and enlargement of the spleen may occur.