

化学品安全技术说明书

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**MSDS标题**

P-PHENYLENEDIAMINE HYDROCHLORIDE MSDS报告

**产品标题**

1, 4-苯二胺盐酸盐; 盐酸对苯二胺; 盐酸对二氨基苯

**CAS号**

624-18-0

**化学品及企业标识**

**PRODUCT NAME**

P-PHENYLENEDIAMINE HYDROCHLORIDE

**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**

Reagent for blood, H<sub>2</sub>S, amyl alcohol. In testing of milk. Photographic developer.  
Intermediate

## SYNONYMS

C<sub>6</sub>H<sub>8</sub>N<sub>2</sub>Cl<sub>2</sub>, C<sub>6</sub>H<sub>4</sub>(NH<sub>2</sub>)<sub>2</sub>·2HCl, "p-phenylenediamine dihydrochloride", "p-phenylenediamine dihydrochloride", "p-aminoaniline dihydrochloride", "p-aminoaniline dihydrochloride", "4-aminoaniline dihydrochloride", "4-aminoaniline dihydrochloride", "1, 4-benzenediamine hydrochloride", "1, 4-benzenediamine hydrochloride", "p-benzenediamine dihydrochloride", "p-benzenediamine dihydrochloride", "p-diaminobenzene dihydrochloride", "p-diaminobenzene dihydrochloride", "1, 4-diaminobenzene dihydrochloride", "1, 4-diaminobenzene dihydrochloride", "1, 4-phenylenediamine dihydrochloride", "1, 4-phenylenediamine dihydrochloride", "C.I. 76061", "C.I. Oxidation Base 10A", "Durafur Black RC", "Fourrine 64, DS", "Pelagol Grey CD", "PCD HCl", "PPDA HCl", "colour developer"

## CANADIAN WHMIS SYMBOLS

## EMERGENCY OVERVIEW

### RISK

Irritating to eyes.

May cause SENSITIZATION by skin contact.

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

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. Systemic effects of p-phenylenediamine include asthma, gastritis (regardless of portal of entry), rises in blood pressure, transudation in serous cavities, vertigo, tremors, convulsions, and coma. Single oral doses of p-phenylenediamine can produce kidney failure. One reported case(1) study cites the development of optic atrophy with resultant blindness which persisted in a follow-up 6 months later. The dose was estimated to be 7 gm. The patient was acutely asphyxiated with a swollen oedematous face and neck and his eyes protruded (exophthalmos). Symptoms had resolved within three days after extensive steroid treatment but optic atrophy remained. Yagi H., et al: Human and Experimental Toxicology, 1996, 15, 617-618 Single oral doses cause oedema of the head in animals (especially in rabbits) and damage muscle fibres in rats. Methaemoglobin formation has been seen only in rats. Rhabdomyolysis (muscle disintegration with excretion of myoglobin in the blood) is the principal mechanism underlying p-phenylenediamine systemic toxicity. It is particularly responsible for renal failure.

## **EYE**

This material can cause eye irritation and damage in some persons.

## **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. 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 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**

Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. There is some evidence that inhaling this product is more likely to cause a sensitization reaction in some persons compared to the general population. p-Phenylenediamine is suspected as a cause of bladder cancers in 'aniline' workers. Long term exposure to p-phenylenediamine may produce mucosal irritation, asthma, oedema and liver damage. "Ursol" asthma and persistent irritation of the upper airways of workers in the fur industry has been described. In 30% of workers employed in the dying of skins, p-phenylenediamine caused skin lesions, eczematous rashes, irritation of the upper respiratory tract and occasional asthma attacks. One skin dyer developed severe bronchial asthma after working with "Ursol" for one year; the asthma attacks always developed half an hour after work. Long term dermal exposure to p-phenylenediamine in hair dyes caused such severe damage of the kidneys and other organs that it resulted in the more or less rapid death of several persons. In vitro, after metabolic activation, p-phenylenediamine is mutagenic; in the Ames test the mutagenicity is increased by the addition of hydrogen peroxide (a chemical

commonly used by hair dressers). There is no evidence that p-phenylenediamine has embryotoxic or teratogenic potential. Present data does not dispel the suspicion that p-phenylenediamine has carcinogenic potential. Phenylenediamine derivatives can cause skin damage, which generally disappears when exposure ceases. Most arylamines are powerful poisons to the blood-making system. High chronic doses cause congestion of the spleen and tumor formation. p-Phenylenediamine dihydrochloride was evaluated against guinea pigs where weak dermal allergic responses were recorded.

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