

# Toxic Effects

## p-DCB

The main risk from p-DCB is from breathing in its vapours or swallowing it. p-DCB penetrates into the body when in contact with the skin and is therefore harmful in this respect too. Studies have also shown that babies can receive p-DCB from their mother's milk (ATSDR 1993).

- **Gastrointestinal** - Abdominal pain, nausea, vomiting and diarrhoea.
- **Respiratory** - Breathing problems
- **Mouth** - Burning in mouth
- **Skin** - Yellow skin (jaundice)
- **Nervous system** - Slurred speech, headache, weakness.

## Naphthalene

Exposure to large amounts of naphthalene may damage or destroy red blood cells so they cannot carry oxygen.

It may also cause nausea, vomiting, diarrhoea, blood in the urine, and jaundice (yellow coloration of the skin).

Other symptoms include:

- **Convulsions**
- **Shortness of breath**
- **Tachycardia (increased heart rate)**
- **Low blood pressure**
- **Headache**
- **Confusion**
- **Coma**

National Information Line

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(excluding public holidays)



# Re-Solv

*about:*  
p-DCB & naphthalene

# Re-Solv

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## 1,4-Dichlorobenzene

(para-dichlorobenzene, p-DCB, PDB) is the organic compound with the formula  $C_6H_4Cl_2$ . This colourless solid has an odour akin to that of camphor.

p-DCB is used to control moths, moulds, and mildew. It is used as a disinfectant in waste containers and restrooms and toilet deodorizers.

**Naphthalene** is a crystalline, aromatic, white, solid hydrocarbon and best known as the traditional, primary ingredient of mothballs.

Naphthalene occurs in coal tar in large quantities and is easily isolated from this source in pure condition. It also occurs naturally in the essential oils of the roots of *Radix* and *Herba ononidis*.



# Naphthalene

## Addictiveness

Since patients rarely volunteer that they abuse mothballs and other common household products and physicians rarely ask directly about the use of such substances as intoxicants, there is currently no way of determining the actual prevalence of this type of substance abuse and the frequency with which it may contribute to medical problems.

The most common product of abuse are moth balls. Moth balls are made of naphthalene or p-DCB, and toilet deodorizers predominantly consist of p-DCB. Naphthalene is also a component of model and plastic cement, which are also abused.

## Long-term Effects

This type of poisoning is usually not life threatening. Acute exposure to the vapour is associated with irritation to the nose, eyes and upper respiratory tract. Extreme exposure results in acute discomfort, painful irritation of the nose and eyes and may induce breathing difficulties.

Naphthalene causes headache, confusion, excitement, nausea, vomiting and sweating.

p-DCB is less acutely toxic than naphthalene, but long-term exposure has been linked to damage to the adipose tissue (loose, connective tissue that stores fat), liver, kidneys and lungs.

Diseases and symptoms connected to abuse include: mental impairment, loss of coordination, scaly skin, anaemia, liver failure and kidney failure.

# The LAW

p-DCB is registered with the Biocides & Pesticides Unit of the Health and Safety Executive.

Most UK Councils are now controlling the use of urinal cakes containing p-DCB within schools.

## Case Studies - p-DCB

- A 19-year-old woman ingested four to five p-DCB moth pellets per day for 2 years and had sluggishness and tremulousness when she stopped.
- A 21-year-old woman ingested two p-DCB toilet air freshener blocks a week while pregnant; anaemia developed that did not respond to iron therapy.

## Case Studies - Naphthalene

- A 10-year-old Native American boy inhaled naphthalene mothballs for 8 hours nightly for 2 months and died of liver failure after progressive portal hypertension developed.
- A 26-year-old woman "sucked on moth balls" during the last trimester of her pregnancy and developed anaemia.
- A 19-year-old woman who smelled, chewed, and sucked mothballs during pregnancy and became anaemic.
- A 15-year-old boy who sucked mothballs, had mid-epigastric pain and vomiting, and subsequently received a diagnosis of anaemia.