



# Methyl Bromide

## General Information

### Key Points

- methyl bromide, also known as bromomethane, is a colourless gas at room temperature with a fruity or musty odour
- it is partially soluble in water
- in the past methyl bromide was used as a pesticide in the EU
- it is very unlikely that the general population will be exposed to a level of methyl bromide high enough to cause adverse health effects
- methyl bromide is highly irritating to the skin, eyes and airways; it may also cause coughing, nausea, vomiting and abdominal pain if it is inhaled
- methyl bromide can cause stomach upset, tiredness, behaviour changes, confusion and damage to the liver and kidneys
- methyl bromide can cause severe irritation with redness and swelling to the eyes
- very high concentrations can cause burns and blistering of the skin
- exposure to methyl bromide for a long period of time may cause depression, and vision, hearing and concentration problems

## Public Health Questions

### What is methyl bromide?

Methyl bromide is a colourless, nearly odourless gas at room temperature. At very high concentrations there may be a musty or fruity odour. Other names for methyl bromide include bromomethane.

### What is methyl bromide used for?

Methyl bromide is used as a chemical intermediate in the production of other chemicals.

The main use of methyl bromide was as a fumigant in the control of insects, weeds and rodents. It was used to fumigate buildings, soil and products such as dry foodstuffs, fruit, vegetables and tobacco during storage. In 2005 the use and sale of methyl bromide as a pesticide/fumigant in the EU was banned, apart from quarantine and shipping uses. However, in 2010 these uses were also banned because of its adverse effects on human health and the environment.

In the past, methyl bromide was also used as a refrigerant and in fire extinguishers.

### How does methyl bromide get into the environment?

Methyl bromide may be released into the environment from natural sources including certain plants and some wetland areas, but oceans are thought to be a major source.

### How might I be exposed to methyl bromide?

While the use of methyl bromide as a fumigant is banned in the EU, people in the UK working with ships, parcels or cargo originating from outside the EU may be exposed to products which have been fumigated with methyl bromide. Additionally exposure could occur in workplaces where it is produced or transported. However safe limits are enforced to protect the employees. Such levels are below those that are thought to cause harmful effects.

The general public may be exposed to methyl bromide by breathing in contaminated air although exposure is likely to be very low.

### If I am exposed to methyl bromide how might it affect my health?

Following exposure to any chemical, the adverse health effects you may encounter depend on several factors, including the amount to which you are exposed (dose), the way you are exposed, the duration of exposure, the form of the chemical and if you were exposed to any other chemicals.

Exposure to very low levels of methyl bromide in the environment would not be expected to cause adverse health effects. Please see below for information on health effects associated with higher levels of exposure.

Exposure to methyl bromide is highly irritating to the skin, eyes and airways. Irritation of the airways can cause coughing, chest tightness and burning sensation of the nose and throat. It may also cause nausea, vomiting and abdominal pain if it is inhaled.

If methyl bromide is absorbed by the body this can result in stomach upset and damage, , tiredness, behaviour changes, confusion and damage to the liver and kidneys. In severe cases methyl bromide may stop proper heart function and cause a build-up of fluid on the lungs, fitting, coma, liver damage, jaundice and death. Some effects may be delayed.

If methyl bromide comes in contact with the eyes this may result in severe irritation with redness and swelling. There may be pain and some vision problems including temporary blindness.

Very high concentrations can cause burns and blistering of the skin. Methyl bromide released under pressure onto the skin can cause frostbite.

Exposure to methyl bromide for a long period of time may cause depression and vision, hearing and concentration problems.

### Can methyl bromide cause cancer?

Due to inadequate evidence in humans and limited evidence in animals, the International Agency for Research on Cancer (IARC) have stated that methyl bromide is not classifiable as to its ability to cause cancer in humans.

### Does methyl bromide affect pregnancy or the unborn child?

There are limited data available on the effects of exposure to methyl bromide on pregnancy and the unborn child. Therefore, is not possible to draw any definitive conclusions. Effects on the unborn child are more likely to occur if the exposure to methyl bromide causes the mother to become unwell.

### What should I do if I am exposed to methyl bromide?

It is very unlikely that the general population will be exposed to a level of methyl bromide high enough to cause adverse health effects. However, if you have any health concerns regarding exposure to methyl bromide seek guidance from your GP or contact NHS 111.

### Additional sources of information

UKTIS- Best Use of Medicines in Pregnancy <http://www.medicinesinpregnancy.org/>

NHS Choices- Acid and chemical burns <http://www.nhs.uk/conditions/acid-and-chemical-burns/pages/overview.aspx>

NHS Choices- Poisoning <https://www.nhs.uk/conditions/poisoning/>

This document from the PHE Centre for Radiation, Chemical and Environmental Hazards reflects understanding and evaluation of the current scientific evidence as presented and referenced here.

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