Methyl bromide

General information

Key Points

- Toxic via inhalation
- Chemicals classification: toxic, harmful, irritant and possible mutagen
- Inhalation can cause stomach pain, headache, confusion, memory loss, dizziness, drowsiness, painful eyes and blurred or double vision
- In severe cases inhalation may cause liver and kidney damage, heart problems, fitting and coma
- Skin contact causes redness and a feeling of pins and needles. In severe cases blisters and burns can occur
- Eye contact can cause severe irritation and burns
Background

Methyl bromide is a colourless gas at room temperature with a sweetish odour at high concentrations. Other names for methyl bromide include bromomethane.

Methyl bromide may be naturally occurring: sources include certain plants and some wetland areas, but oceans are thought to be a major source, and it may also be man-made.

In the past, 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. It was also used to produce other industrial chemicals, as a refrigerant and in fire extinguishers. In 2005, the use of methyl bromide as a pesticide/fumigant was banned under the Montreal Protocol on Substances that Deplete the Ozone Layer, apart from quarantine and shipping uses. However in March, 2010 these uses were also banned because of its adverse effects on human health and the environment.

Exposure to methyl bromide would occur primarily in an occupational setting, during application as a fumigant, although safe levels of exposure are enforced to protect workers. Such levels are below those that are thought to cause harmful effects.

The general public may have been exposed to very low levels of methyl bromide by breathing in contaminated air although this is now unlikely due to the ban on its use as a fumigant.

If exposed to methyl bromide, the potential adverse health effects that may occur depend on the way people are exposed and the amount to which they are exposed. Inhalation of methyl bromide causes abdominal pain, headache, confusion, memory loss, dizziness, drowsiness, painful eyes and blurred or double vision. In severe cases, kidney and liver damage, heart problems, fits and coma may occur.

Skin contact with liquid methyl bromide can cause redness and a feeling of pins and needles. Large amounts can cause blisters and burns, which can be delayed for several hours. Methyl bromide can also be absorbed through the skin causing symptoms similar to those seen following inhalation exposure. Eye contact with methyl bromide may cause severe irritation and burns.

Long term inhalation exposure can cause depression, impaired concentration and visual problems.

Methyl bromide would not be expected to cause adverse effects on the unborn child at levels that are not dangerous to the mother.

Due to inadequate evidence in humans and limited evidence in animals regarding whether methyl bromide causes cancer, the International Agency for Research on Cancer (IARC) could not classify methyl bromide regarding its carcinogenicity to humans.
Frequently Asked Questions

What is methyl bromide?

Methyl bromide is a colourless gas that has a sweetish odour at high concentrations. In March 2010 the use of methyl bromide was banned due to its adverse effects on human health and the environment. In the past it has been used as a fumigant, chemical intermediate and refrigerant.

How does methyl bromide get into the environment?

Methyl bromide is released into the environment from natural sources including certain plants, oceans and wetlands.

How will I be exposed to methyl bromide?

Exposure to methyl bromide occurs primarily in an occupational setting, during application as a fumigant. The general public may be exposed to methyl bromide by breathing in contaminated air. However, the levels present in air would be expected to be very low.

If there is methyl bromide in the environment will I have any adverse health effects?

The presence of methyl bromide in the environment does not always lead to exposure. Clearly, in order for it to cause any adverse health effects you must come into contact with it. You may be exposed by breathing, eating, or drinking the substance or by skin contact. 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.

Inhalation of methyl bromide causes stomach pain, headache, confusion, memory loss, dizziness, drowsiness, painful eyes and blurred or double vision. In severe cases renal and liver damage, heart problems, fitting and coma can occur. Symptoms may be delayed.

Skin contact with liquid methyl bromide causes redness, a feeling of pins and needles and in severe cases blister and burns. Methyl bromide can also be absorbed into the body following skin exposure causing similar symptoms to those seen following inhalation exposure.

Can methyl bromide cause cancer?

There is inadequate or limited evidence that methyl bromide causes cancer; therefore the International Agency for Research on Cancer (IARC) could not classify methyl bromide regarding its carcinogenicity in humans.

Does methyl bromide affect children or damage the unborn child?

The evidence from reproductive toxicity studies in animals suggests that methyl bromide will not have any adverse effects on the unborn child. Exposure to methyl bromide should be avoided during pregnancy because of its general toxic effects.
**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.