

Background Paper on Methyl Bromide

What is it?

At room temperature and pressure methyl bromide is a colourless gas that is heavier than air. Except at high concentrations, it is also odourless. It is commercially available as a liquefied gas (under pressure) and is stored/transported in steel cylinders.

It is toxic by inhalation and has potent insecticidal, fungicidal and herbicidal properties.

What does it do?

Products containing methyl bromide have been registered in Australia for fumigation purposes since 1945. Methyl bromide has been used as a soil fumigant in horticultural industries, as a pest control treatment on dry commodities such as stored grain and dried fruit, as well as a quarantine and pre-shipment (QPS) fumigant for imports, exports and certain commodities transported interstate, and as an industrial feedstock in the production of other chemicals. Methyl bromide products may contain 2% chloropicrin (tear gas) or amyl acetate (banana oil, pear oil) as odorants to warn of exposure.

What were our concerns?

The APVMA has a program for reconsidering (reviewing) the registration of chemicals currently available on the market. Reviews are undertaken when there is new information that raises potential concerns about a chemical's on-going use, suggesting that its registration should be reassessed.

Methyl bromide is a potent ozone-depleting substance. Therefore the registrations of methyl bromide products were reconsidered because labels contained uses that may pose an unacceptable risk to the ozone layer.

What is the international situation with respect to methyl bromide use?

It is widely recognised that the emission of certain substances (including methyl bromide) can have adverse effects on the environment by significantly depleting the ozone layer. Thus an international control agreement, the *Montreal Protocol on Substances that Deplete the Ozone Layer*, was negotiated and it came into force on 1st January 1989. The Protocol, which sets out a mandatory timetable for the phase-out of ozone-depleting compounds including methyl bromide, has been signed by over 180 countries including Australia.

The uses of methyl bromide for quarantine and pre-shipment purposes and as an industrial feedstock are currently exempt from phase-out under the *Montreal Protocol*. Otherwise, the total phase-out of methyl bromide was to have been completed by 1 January 2005. However, in recognition of the fact that some industries are having difficulty in finding alternatives to methyl bromide, signatories to the Montreal Protocol have permitted some Critical-Use Exemptions (CUEs) where no technical or economically feasible alternatives currently exist.

These are granted on a yearly basis, allowing the use of an allocated amount of methyl bromide for specified agricultural uses. The first year for CUEs was 2005. In Australia, the CUE quantity used in agriculture in 2005 was only about 20% of the total quantity used nationally in 1991 (the base-line year against which the Montreal Protocol measures national reductions in use), while for 2006 the CUE quantity granted was less than 10% of 1991 usage.

To meet the requirements of the Montreal Protocol, Australian legislation was enacted (the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 and Regulations*) to ensure that methyl bromide imported into Australia is only used for CUEs, QPS purposes and as an industrial feedstock. These regulations are administered by the Australian Government Department of the Environment and Water Resources¹ (DEW).

Why did the APVMA carry out a review of methyl bromide?

As the potential for adverse environmental effects of methyl bromide arising from its release into the atmosphere is well understood, the APVMA did not conduct a detailed scientific review of all available data. The review focussed on uses, warnings and instructions on product labels, particularly in respect of the known environmental concerns with methyl bromide, and Australia's obligations under the Montreal Protocol. No technical assessments were required in the areas of toxicology, OH&S, or residues.

Are there alternative chemicals if methyl bromide use is eventually restricted?

As noted above, CUE arrangements in place since 2005 allow some flexibility for industries that still do not have clear alternatives to methyl bromide, although this is a diminishing option. Amendments made to methyl bromide product labels will have minimal impact on the fumigation industry, since methyl bromide manufacturers, importers and users are well aware of the Montreal Protocol and its implications for use of methyl bromide products. DEW has been closely involved with these sectors since 1996, when it commenced control of methyl bromide manufacture, import and export, *via* mandatory licensing and record keeping. Most agricultural industries have largely adapted to the expected phase-out via utilisation of alternative products and/or fumigation methods.

What action has the APVMA taken?

To allow the continued registration of methyl bromide pesticide products, the following label variations have been made:

- product labels with general fumigation uses have been varied to restrict such use to QPS situations, and to currently approved Critical Use Exemptions (CUEs). For example, non-QPS fumigation of buildings for rodents would not be permitted, nor would non-QPS fumigation of commodities. Labels have also been varied to

¹ Previously known as the Department of the Environment and Heritage (DEH).

include a recommendation that methyl bromide recapture technology be used where appropriate;

- product labels that have soil fumigation uses have been varied to restrict such use to QPS situations, and to currently approved Critical Use Exemptions (CUEs). They also include a recommendation that methyl bromide recapture technology be used where appropriate; and
- product labels that have both soil fumigation and general fumigation uses have been varied in the same way as above.

How can interested stakeholders access the review findings and decisions?

The APVMA's detailed findings can be found in the **Final Review Report and Regulatory Decision** document, which is accessible via the APVMA's website.

Further information may be obtained by emailing chemrev@apvma.gov.au or by writing to the:

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KINGSTON ACT 2604

For further information please contact (02) 6210 4749 or Fax (02) 6210 4776