

A new era in commodity fumigation in South Africa

South Africa is a signatory member of the Montreal Protocol, an international treaty seeking to phase out the use of methyl bromide, among other chemicals, which have the potential to deplete the ozone layer. South Africa is now in the final year of phasing out methyl bromide for use in structural and commodity fumigation and the registration for these applications will be cancelled at the end of 2022.

A limited amount of methyl bromide will in future be allowed for critical use exemption (CUE), quarantine and pre-shipment (QPS) and international standards for phytosanitary measures (ISPM) purposes.

A new era has begun

ProFume® fumigant was developed as an alternative to methyl bromide for treatment of food commodities and structures that process, store and transport these commodities. ProFume was first registered in 2003 in the European Union (EU), in 2004 in the United States (US), and in 2007 in Australia for post-harvest uses.

ProFume was introduced into the South African fumigation industry in 2019, for the control of a wide range of stored product and wood-destroying pests. Over the past two and a half years, ProFume has successfully been tested and more than 40 fumigation companies and fumigators started using it in the commodity, structural, QPS and ISPM fumigation markets.

What is ProFume?

ProFume is a cylinderised, highly-penetrating, non-flammable, odourless and colourless inorganic gas fumigant, which penetrates enclosed spaces and commodities being treated to eliminate all life stages of stored product and wood-destroying pests.

It contains sulphuryl fluoride, which has a very high vaporising pressure – it penetrates dense substances such as flour up to ten times faster than methyl bromide. ProFume fumigation requires the use of powerful software, tools and

techniques. It can only be purchased and used by qualified fumigators who completed additional stewardship training with the supplier and purchased the required ProFume equipment.

Impact on food and human safety

Sulphuryl fluoride does not affect the characteristics, quality, taste, commercial value, or nutritional and baking qualities of food. The only residue left on commodities after fumigation is extremely low levels of fluoride, which is less than 2% of the average daily fluoride exposure for humans.

Established fluoride residue tolerances for food commodities have been set at 1 500g/m². The trained ProFume fumigator will be guided during fumigation by the ProFume software to ensure that these maximum tolerance levels are not exceeded.

Impact on the environment

A consortium of multi-national research institutions and government organisations

provide funding to the Advanced Global Atmospheric Gases Experiment (AGAGE). The AGAGE measures the atmospheric concentrations of more than 40 gases, including sulphuryl fluoride.

Sulphuryl fluoride was declared a non-ozone depleting substance by the United Nations Framework Convention on Climate Change (UNFCCC). They also declared that the global warming potential of sulphuryl fluoride is insignificant.

Precision and flexible fumigation

ProFume fumigation makes use of a unique new concept called precision fumigation. ProFume Fumiguide software is used to plan and monitor the fumigation job. The software will analyse readings from the gas monitor during the job and make recommendations to the fumigator, to ensure the target pest is controlled and the commodity is never overexposed. On completion, the Fumiguide software will generate a detailed scientific report.

ProFume also makes use of a completely new feature called flexible fumigation. The fumigant does not have a standard label rate as with other pesticides and fumigants. Flexible fumigation tools allow for short-term exposure (as low as eight hours) or long-term fumigation (up to seven days). Short-term fumigation will require high rates of fumigant, but will save operational time. If there is no time restraint, long-term fumigation will require very low levels of fumigant.



ProFume in South Africa

Henchem, a specialist supplier of pesticides to the South African pest control industry, is the country's distributor of ProFume. Contact the Henchem national sales manager in your area for more information: 021 948 7366 (Western and Northern Cape); 081 496 4325 (Eastern Cape); 061 472 7435 (KwaZulu-Natal); 067 223 3760 (Gauteng, North West, Mpumalanga and Limpopo).