

A NEW PRODUCT FOR SHORT-TERM FUMIGATION

Lothar BENZING

Detia Degesh GmbH, Laudenbach, Germany
Fax: 6201708402

A new product based on magnesium phosphide for phosphine fumigations targeted for the protection of stored products has several advantages when compared with the usual products.

The formulation of the metal phosphide is contained in bags made of specially impregnated paper (Tyvek), which are only permeable to water vapour. After complete decomposition of the metal phosphide, the fine dust remains in the bags and no residues can reach the fumigated stored commodities. By adding zeolith, a water-absorbing sodium-aluminium-silicate, no uncombined phosphine can be detected in the packed product when the tin is opened for use. Besides, all danger of self-ignition is precluded. Furthermore, by adding this special supplementary substance, development of phosphine at the beginning of the decomposition is delayed. For this reason there is enough time for the worker to apply the product before diffusion of the fumigant, thereby precluding risk of inhalation of the generating gas. In contrast to similar products based on aluminium phosphide, the new product DETIA GAS EX-B FORTE, under normal conditions (20°C/60 % r.h.) decomposed completely within 48 hours. The residue in the bags contain only traces of magnesium phosphide (0.1 %). Because of its prompt decomposition this product is especially suitable for short-exposure fumigations. This formulation is also remarkable in that it enables fumigations to be carried out at low temperatures (under 5°C) without considerable prolongation of the exposure time. Consequently short-term fumigations in cold weather or in chilled containers are also possible. By using this magnesium phosphide product in bags, new operational areas for fumigation with hydrogen phosphide gas (phosphine) might be made accessible. Good results have been achieved already with the quarantine-treatment of fruits such as bananas, red pepper, mangos etc.