

US EPA ARCHIVE DOCUMENT



Iodomethane is the first new active ingredient under US EPA review in the last 20 years for use in the pre-plant soil fumigation market. MIDAS™, (active ingredient: Iodomethane + chloropicrin) is the commercial product name with formulation ratios of (Iodomethane: Chloropicrin) 98:2, 50:50, 33:67 and 25:75. These end use products are necessary to cover the wide range of disease and pests problems in regions across the US having different soil conditions and growing environments.

MIDAS™ is a general biocide with activity against insects, plant parasitic nematodes, soil borne pathogens and weed seeds. Use of MIDAS™ will be for the treatment of bare ground in preparation for the growing of strawberries, fresh market tomatoes, peppers, perennial crop ornamentals, nurseries, cut flowers, turf and tree and vines. Regulation of MIDAS™ will be as a restricted use Category 1 agricultural pesticide. MIDAS™ is a liquid at room temperature and under pressure in cylinders; it quickly turns to a gas when released in the soil. This vaporization optimizes its ability to move through the soil and provide maximum efficacy within the treatment area.

Based upon scientific studies submitted to the US EPA in support of registration, MIDAS™ has been determined to pose no significant threat to ozone depletion. Current studies confirm a 0.0015 ozone depletion potential for MIDAS compared to CFC's of 1.0 and methyl bromide of 0.36. MIDAS™ is readily broken down in the atmosphere in 1.5 – 4 days under UV light. MIDAS™ application to the soil has been studied and proven to be a minimal threat to build up in the soil profile and groundwater.

The application of MIDAS™ in grower fields will be conducted using conventional tractor mounted shank applied equipment, as well as through a new technology of drip applied fumigation, (see photographs attached). Shank applied treatments use a steel shank with an attached tube that allows for the fumigant to be applied at the base of the shank at a minimum soil depth of 8 inches. Drip applied treatments use irrigation water applied in subsurface tubes to carry a known concentration of MIDAS into the plant bed. As in the case of methyl bromide and Telone®, the use of plastic tarps or films will be required with MIDAS™ applications to reduce emission concentrations in the air and aid in the overall efficacy against target pests in the soil.

MIDAS™ rate of application per treated acre will typically range from 100 – 175lbs/A with use of 98:2 formulations and up to 400 lbs with 50:50 and 33:67 formulations. Under some conditions because of the need for phytosanitary certification and / or efficacy against specific target pests in nurseries and ornamental crops the rate may be as much as 235lbs /A for 98:2. The time to planting interval from a MIDAS™ application has been determined to be 7 days with use of the 98:2 formulation and a minimum of 10 days for 50:50 and 33:67 formulations with chloropicrin. Applications of MIDAS™ to the soil should follow the same guidelines as methyl bromide to insure crop safety. These conditions include attention to soil conditions with high moisture content, temperatures below 55°F at an 8 inch depth and / or cloddy soils with high plant/weed trash content.



Flat or Broadcast Fumigation with tractor mounted shanks at a depth of 8-12" and plastic tarp covering 100% of the treated surface.



Raised Bed Shank Fumigation on wheeled tractor mounted shanks a depth of 8-12" and plastic tarps covering only the treated plant beds only.



Fumigant injection with irrigation water into subsurface drip lines at ~2" soil depth and plastic tarps covering only the treated plant beds.