

# METHYL BROMIDE EMISSION CONTROL FROM COMMODITY FUMIGATION

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A proprietary process to control emissions of methyl bromide (MB) to the atmosphere following the fumigation of commodities. The process consists of trapping the MB on a appropriate adsorbent, such as activated carbon, Reactivation of the carbon for further use as an adsorbent, thermal destruction of the desorbed MB, and the recycling of its bromide content for reuse in the manufacture of new MB and/or other brominated compounds. Research was undertaken to observe the effects of 1) temperature, 2) relative humidity (RH), 3) trapping speed (i.e. MB concentration in the aeration stream) and 4) carbon type on the amount of MB that could be loaded on the activated carbon. Tests revealed that temperature seems to have the most effect on the loading of each carbon while the loading of various carbons is different, possibly due to the different source material from which each of the carbons tested was made. Temperatures on the activated carbon column rose in response to the adsorption of MB and could be followed down the carbon bed to the breakthrough point reached when the adsorption process reached the bottom of the column. Relative humidity of the in- flowing stream may not be important due to the heating of the column and the simultaneous lowering of the RH as it reaches the point of adsorption.

This process offers a procedure which does not interfere with established fumigation schedules used for quarantine purposes. No concern for the sorption of commodity volatiles is necessary because there is no recycling.