METHYL BROMIDE EMISSION CONTROL

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BACKGROUND

The GFK Consulting Ltd. activated carbon-based Methyl Bromide Emission Control process (MBECp) has undergone intense and successful development under a Cooperative Research and Development Agreement (CRADA) with USDA-ARS and Great Lakes Chemical Corporation. The first commercial fumigation pilot tab, using a 100 cfm portable adsorber, are scheduled for the end of September 1997.

The MBECp reduces methyl bromide concentration in the exhaust gas from all commodity fumigations to less than 500 ppm (2 gm/m^3, 2 oz/ft^3) by capturing methyl bromide that would normally be discharged to the atmosphere on activated carbon. The process is simple. For the fumigator, it requires minimal additional labor and no new technical AM. For the facility operator, the basic mechanical arrangements and fumigation schedules will remain unchanged. There is no risk of damage or contamination to the fumigated commodity since all fumigations are performed with virgin methyl bromide.

The MBECp is economical and produces no secondary waste. Spent activated carbon will be regenerated for re-use in the adsorbers, and the desorbed methyl bromide will undergo thermal destruction for 100% recovery of the bromine.

The operator of the fumigation facility will provide the ducting, blower, and control s to connect the fumigation chamber with the adsorber. Adsorbers, freshly charged with activated or reactivated carbon, will be delivered to the fumigation location. Once the carbon is spent, the adsorbers will be retrieved. The spent carbon will be regenerated. at a central facility for re-use, and the bromine content of the captured methyl bromide will be recycled into a manufacturing operation.

FREQUENTLY ASKED QUESTIONS

1. What are the effects of temperature and humidity on the capture of methyl bromide?

A. Extensive research has shown that temperature and humidity do play important roles. However, within the parameters of normal fumigations, 8-16% loading of the carbon can be achieved.

2. Aren't there other ways to reduce methyl bromide emission from chamber fumigations?

A. Yes, recycling, condensation and combustion are potential alternatives, however, no other methyl bromide recovery system can compare with the following advantages of the MBECp:

a. Zero impact on the fumigation process.
b. Virgin methyl bromide used for each fumigation.
c. Any commodity fumigation at any location can use the MBECp.
d. Recycles bromine for re-use.
e. Low capital cost for the facility operator

3. Isn't the spent carbon hazardous?

A. Spent carbon, by design, contains a significant quantity of methyl bromide. The vapor concentration above the spent carbon is, however, less than 1/200 that of liquid methyl bromide. Spent carbon is not a Resource Conservation and Recovery Act (RCRA) hazardous waste.

4. What *happens if spent carbon is spilled during transport?*

A. Spent carbon is a solid and can be picked up safely and easily by properly trained and equipped personnel. In fact, activated carbon is ideal for treating hazardous liquid spills. Activated carbon covers and adsorbs the spill and minimizes pollution.

5. Doesn't combustion *of methyl* bromide *contribute to atmosphere greenhouse gases?*

A. The greenhouse gases generated from the combustion of the captured methyl bromide used to fumigate 100,000 lbs of grapes is less than that generated from the use of one gallon of gasoline in a shopper's car when he she purchases the grapes.