Monsanto

FROM (NAME & LOCATION) J.R. Savage - B3NH

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cc: A.E. Leisy - 1740
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SUBJECT: Decontamination Procedure

REFERENCE:

TO: J.J. Zeman
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One of my responsibilities re the PCB Emergency Plan was documentation of Manufacturing's Decontamination Plan for possible adaptation to customer needs. Here it is, in outline form:

I. For Equipment to be Scrapped:

A. Pump empty. If no use for contents, drum off for incineration.

B. Open up equipment and remove any solid accumulation with scrapers, shovels, etc.

1. Workers to wear air line masks, plastic gloves and aprons, etc., as needed.

2. Solids to be placed in drums, along with used gloves, rags, etc.

3. Drums to be disposed of in approved landfill.

C. Close up equipment and fill with hot water. Circulate or agitate as equipment design permits. Operate each valve, cock, pump, etc. Drain water to settling basin.

1. Allow water to cool before decanting to sewer.

2. Drum off any organic phase or "rag layer" for incineration. Organic layer will probably be at the bottom.

D. Fill with kerosene, circulate or agitate as equipment design permits, then drum off for incineration.

E. Repeat water wash, including cool down and drumming of any organic or "rag layer" for incineration. Organic layer will probably float on the water.

F. Dismantle, cutting or breaking each item to render it useless. Remove all gaskets and packing and place in drums for landfill. (See Item B)

G. Dispose of scrap through normal scrap dealer channels.

II. For equipment to be reused in handling dielectric fluids:

A. Pump empty. If no use for contents, drum off for incineration.

B. Open up equipment and remove any solid accumulation with scrapers, shovels, etc.

1. Workers to wear air line masks, plastic gloves and aprons, etc., as needed.

2. Solids to be placed in drums, along with used gloves, rags, etc.

3. Drums to be disposed of in approved landfill.

C. Close up equipment and fill with hot water. Circulate or agitate as equipment design permits. Operate each valve, cock, pump, etc. Drain water to settling basin.

1. Allow water to cool before decanting to sewer.

2. Drum off any organic phase or "rag layer" for incineration. Organic layer will probably be at the bottom.

D. Fill with fluid compatible with new application (e.g. electrical grade isopropyl biphenyl), circulate or agitate as equipment design permits, then drum off for incineration.

E. Repeat water wash, including cool down and drumming of any organic or "rag layer" for incineration. Organic layer will probably float on the water.

F. Apply vacuum to dry out system. (Not vital but will make it easier to clean up electrical properties.)

G. Remove and replace all gaskets from flanges, lids, etc. Remove and replace pump and agitator shaft packing. Tear down wet-end of all pumps to assure no PCB's pocketed behind impellers, etc. Similarly, tear down vacuum pumps, ejectors, valves, etc. Remove plugs from plug cocks, balls from ball valves, etc. and clean out if necessary.

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H. Open major equipment and sand blast to bright finish. (This step may not be necessary if a few ppm PCB is acceptable in the first few batches, or if willing to take some risk of having to repeat part of the procedure.) Replace any piping that is not clean. Reassemble system.

I. Fill system with a fluid compatible with new application (e.g. electrical grade isopropyl biphenyl). Circulate or agitate as system design permits. Operate each valve, cock, pump, etc. Sample and analyze for PCB's. If not acceptable, drain to drums and repeat this step.

Analysis of the waste from each step can provide a valuable check on progress, and thus help determine how much of the remaining procedure must be implemented. For instance, if the first organic fill/drain were to analyze as 1% PCB, that would indicate that the prior steps had displaced 99% of the contents, and a repeat of those steps should get to $(.01)^2$ or 100 ppm, provided that there was no source of PCB from pockets, leaching of solid deposits, or gaskets, packing, etc. Thus, if the ratio remains the same between successive organic dilutions, such sources probably do not exist. This will not be true of water washes, because any PCB present will tend to remain with the organic layer.

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