Monsanto

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Mr. Herman Pancirea
NAVAIR
Engineering Support Office
Code 342
Alameda, CA 94501

Dear Mr. Pancirea:

In response to your recent request for information on PCB spill clean-up, I offer the following general suggestions.

On solid impervious substances such as metal parts, cement, tile, painted (coated) materials, etc., as first choice I recommend use of a hydrocarbon based solvent wash in which PCBs are highly soluble followed by a rinse with a strong aqueous detergent solution.

Kerosene is a good choice for the hydrocarbon solvent because of its good toxicological properties and safety due to its high flash point. Other hydrocarbons can be used such as benzene, hexane, #2 diesel fuel, etc., but careful consideration should be given to other properties such as toxicity, flammability, safety, etc., in making this choice.

The detergent solution can be any good commercial laundry detergent which will remove oily substances and functions with good surfactant properties. Commercial products like Tide, Cheer, etc., are good candidates.

The procedure I recommend is as follows:

1. "Dry" the surface of PCB fluid as much as possible using cloths, paper towels, adsorbents for puddles (as on floors), etc.

2. Wash the surface using a cloth, sponge, etc., with a minimum volume of hydrocarbon solvent. "Wring-out" sponge/cloth several times in solvent and wash surface. Wipe surface "dry" with sponge/cloth.

3. Rinse surface with detergent solution as performed in #2. Wipe surface dry.

4. Dispose of all used solutions/materials properly as used PCBs according to applicable regulations.

Obviously, many variations of this procedure are possible. Some people prefer use of a low sudsing detergent. In cases of electrical equipment where there is a reluctance to use water or leave traces of flammable hydrocarbon vapor, many people prefer to use a chlorinated hydrocarbon solvent suitable for degreasing electronic components for both the solvent and a fresh batch of solution for the rinse.

In some cases where surfaces are being cleaned that have been exposed to low levels (less than 0.5%) PCBs as a result of vapor, gases or fumes such as building fires, gas leaks, etc., and large areas were not "wetted" by liquid PCBs at high concentrations, the surfaces have merely been washed down and rinsed using aqueous detergent solutions. PCBs are only slightly water soluble (~1 ppm or less) but at low levels the aqueous detergents/ surfactants remove the PCBs and any attendant dust/dirt/soot or similar particles which have the PCBs adsorbed to them from a contaminated surface.

I hope these general recommendations are helpful.

Sincerely,

John H. Craddock
Product and Environmental
Safety Director

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