Local chemists find safeguards, replacements for contaminant

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Midland chemists have developed contamination safe - guards and replacement chemicals for polychlorinated bi - phenyls (PCB's) that Department of Natural REsources scientists say continue to show up in Michigan waters in "alarming levels."

The concern of water management bureau chief William Turney is that PCB contamination levels have remained the same - increased despite predictions the contray. PCB was known be a wide-spread contamin in 1966.

ney wants PCB banned in gan if the federal Environmental Protection Agency doesn't act.

Approximately one billion tons of the chemical have been produced in the United States from its first manufacture in 1929 to 1970. Scientists figure 780 million tons of it wound up in the environment.

The Federal Drug Administration set five parts per million (ppm) as an acceptable level in fish. Earlier this year the FDA seized Lake Michigan catches of chubs with levels as high as 20 ppm PCB contamination.

As a plasticizer, PCB showed up in commercial goods like plastic bags and bottles and carbonless duplicating paper. In industry, PCB is used in hydraulic, lubrication and insulation applications where flammability is critical.

Most of the PCB manufactured today, under FDA regulations, is used in electrical transformers and capacitors, where it provides insulation with minimal dangers of fire or explosion.

Aimed at this market is Dow Corning's "200 fluid", a silicone - based insulator with PCB's low flammability characteristics.

Dow Corning's product, on the market for about four months, is slightly more flammable but less explosive than PCB, says Dow Corning vice president of research Leslie Tyler.

A product designed for extreme heat, "200 Fluid" doesn't break down in the environment any better than PCB, but it doesn't accumulate like the chlorinated insulator, Tyler said.

PCB is deposited and remains in the fat of contaminated fish or animals. The effect on food chains in water can be concentrations of PCB in fish 30,000 times the level fourd in the water.

"Based on research today," said Tyler, "200" Fluid is more ecologically sound than (PCB)."

Dow Chemical Company Michigan division research scientists are working on a fluid that will replace PCB's dielectric, or nonconductor, applications.

The company's Dowtherm serics replaces the heat transfer applications of PCB. Where water is the most common medium of heat transfer, Dowtherm and PCB boil at higher temperatures.

Dow's Imbiber Beads provide greater safeguards for PCB's already in use. Designed to solidify oil and ease cleanup the Dow product is also used to solidify PCB in shipments to disposal sites.

Imbiber Beads are also spread under transformers to contain any leakage. The product is produced and developed in Midland.

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