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What's a PCB?

CHICAGO (AP) — Polychlorinated biphenyl (PCB), a manmade chemical used generally in electrical equipment, is found today throughout the United States in the air, water, soil—and in people.

Last year, after tests determined it was a health hazard, Congress passed a law banning all production and distribution of PCBs by 1979.

Approximately 1.4 billion pounds of PCBs have been produced since Monsanto Industrial Chemical Co. of St. Louis began manufacturing the chemical in 1939. At present, government figures estimate that about 750 million pounds are in use in electrical equipment and some 450 million pounds exist in landfills, the air, water, soil or sediments.

Samples of human fat tissues have shown an average of one to three parts per million (ppm) of PCBs in the human population throughout the nation. And a recent study showed that many fish in the Great Lakes contain more than 5 ppm, which is the tolerance level for human consumption set by the federal Food and Drug Administration. The FDA is considering lowering the level to 2 ppm.

Kari Bremer, toxic substances coordinator for the U.S. Environmental Protection Agency, said the chemical is "very persistent and slow to break down, if it breaks down at all."

The first indication that PCBs constituted a health hazard occurred when workers manufacturing the substance developed small bumps, sores and lesions on the skin, Bremer said.

In 1968, about 1,000 persons in Japan consumed rice oil that accidentally had been contaminated with about 2,000 parts per million of PCBs. Reactions ranged from sores, acne lesions, blotching and skin pigmentation problems to miscarriages and stillbirths. Bremer said many of the victims still suffer from the poisoning.

Furthermore, PCBs are a suspected human carcinogen and have produced cancer in rats in studies at the Atlanta Center for Disease Control.

Bremer said that in highly industrialized areas, higher levels of PCBs generally are found in fish, animals and the environment.

He noted, though, that a national survey of PCB content in mothers' milk, conducted by the Colorado State Medical School, showed "it didn't matter much which geographical area the mother came from."

The chemical itself, depending on how much chlorine is present, can be a white, powdery solid or a liquid ranging from a clear, oily substance to a yellow, sticky material.

Its primary use is in electrial equipment, including transformers and capacitors, flourescent lighting, mercury and sodium vapor street lights, central air-conditioning units and high-efficiency refrigerators.

It also has been used extensively in carbonless copy paper, in waterproofing paint, in hydrolic oils, in road oils and in plastics.

But in nearly every instance, acceptable substitutes for the uses of PCBs have been found, Bremer said.

A typical problem resulting from use of PCBs is illustrated by what happened when about 30,000 silos in Illinois, Indiana, Michigan and Kentucky were painted with a waterproof paint containing PCBs, Bremer said.

"The PCBs were transferred from the paint to the grain stored in the silos. That was fed to cows and it came out in the milk. Repainting doesn't get rid of the PCBs. We don't know what to do with those silos. The concrete is contaminated and we're having a real disposal problem."

Disposal of PCBs may become even more difficult. In Southern Illinois, citizens of tiny Wilsonville are enraged that the chemical is being hauled from the St. Louis area and deposited in a landfill near their community. They have threatened to blockade the landfill and are fighting the issue in the courts.

The federal EPA is required this month to issue final regulations on disposal and storage requirements for PCBs, Bremer said. Ultimately, PCBs should be completely broken down, but it takes special incinerators that heat to more than 2,000 degrees Fahrenheit to do that.

"The chemical incinerators presently in operation are overloaded," Bremer said. "They're also burning pesticides and other hazardous chemicals. It's a real mess."

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