

Countdown begins for phasing out most polychlorinated biphenyls

The Environmental Protection Agency (EPA) will soon propose regulations for phasing out most uses of polychlorinated biphenyls (PCBs) in preparation for a Toxic Substance Control Act ban on their manufacture after Jan 1, 1979.

In the meantime, final regulations are being issued for the labeling of PCB containers and the disposal of these toxic compounds, which have been used in insulating fluid for heavy duty electrical equipment and in adhesives, paint, sealants, duplicating machine paper, plastics, and ink. Chemically similar to the polybrominated biphenyls (PBBs) involved in Michigan's widely publicized animal feed contamination, PCBs are heat-resistant and durable and have been used commercially in the United States for nearly 50 years.

The compounds began to receive a "bad press" 12 years ago when a European scientist declared them to be pollutants. Two years later, domestic rice oil in Japan was accidentally contaminated with a PCB. The result, investigating physicians reported, was a dermal-gastrointestinal-neurological disease called "yusho."

Effects of acute PCB exposure in humans now are known to include an acne-like skin eruption, pigmentation changes in the skin and nails, tearing eyes, face and hand edema, and abdominal pain. High doses over long periods have produced hepatic carcinomas in rats, and monkeys fed these compounds have aborted or produced low birth weight offspring.

EPA officials say PCBs "are now considered suspect cancer agents. They are also persistent compounds that may damage people's reproductive capability, harm the body's immunological system, and cause skin reactions. Fishing in a number of major waterways, including the Great Lakes and Hudson River, has been jeopardized by unsafe PCB residues in fish."

Almost five years ago, the Food and Drug Administration declared that any fish found to contain 5 ppm PCB is unsafe to eat. The agency now is proposing to lower this ratio to 2 ppm.

Some persons have been reported to suffer adverse reactions from eating large amounts of PCB-contaminated fish, and last spring Indiana authorities recom-

mended against eating lake trout after high PCB levels were noted in the fish. In July 1977, Chicago health officials began advising pregnant women and breast-feeding mothers to eat Lake Michigan fish no more often than once a week and to limit children to one meal weekly of lake game fish.

An environmental group, the Lake Michigan Federation, has been urging conservation departments to attach such a fish-eating advisory to fishing licenses and post it at public landings.

PCBs tend to accumulate in body fat, and the concern about nursing mothers' milk stems from the fact that it is high in fat. Health department officials in Wisconsin, Michigan, Indiana, and the rest of Illinois followed Chicago's lead by drafting similar recommendations about eating Lake Michigan fish for breast-feeding women.

In agreement with federal authorities, the state officials did not recommend against breast-feeding when PCBs are involved, contending that benefits of nursing outweigh the risks. Commenting on the situation, biochemist Anatoly Bezukorovny, PhD, of Rush-Presbyterian-St. Luke's Medical Center, Chicago, suggested: "The answer is not to stop breast-feeding but to keep pollutants out of the mother's food."

In 1976, University of Guelph (Ontario) researchers found a greater incidence of thyroid hyperplasia in coho salmon collected from Lake Michigan, Lake Ontario, and Lake Erie than in earlier years. Noting that the Great Lakes are polluted with PCBs and other chemicals, they suggested the salmon goiters may be environmentally induced.

Water chemist David Weininger at the University of Wisconsin, Madison, says fish collect PCBs from food or from water and small particles passing through the gills. Because PCBs persist in lake bottom sediment, they could continue to be a problem for many years after their use is discontinued, Weininger and fellow water chemist David Armstrong point out.

Streams carry contamination into lakes, but much of it also comes from the air. Anders W. Andren, also a water chemist in Madison, says that, "for toxic materials like PCBs, the amount coming from the air dwarfs the river input." — by TOM GINSKY