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Monsanto to halt PCB manufacture

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Monsanto Company—the nation's only producer of the infamous chemical polychlorinated biphenyls (PCBs)—is trying to get out of the PCB business.

(Monsanto's Textile Company in Greenville has nothing to do with PCBs.)

The end of 1977 is the target date for ending production of PCBs—suspected of causing cancer and recently found in high levels in Lake Hartwell fish—but Monsanto is in a bit of a bind.

EPA Administrator Russell Train, in December of 1975, refused to ask the company to stop making PCBs, because, according to a Monsanto position statement, the electric power industry and railroads would be shut down in short order.

Monsanto, not wanting to cause major shutdown of electric power generators and railroads, kept making PCBs while beginning to search for a harmless substitute.

So far, the search (by Monsanto and many others) has been practically fruitless, and Monsanto officials say they have given up.

In its position statement, however, Monsanto said the likely substitute for PCBs is silicone compounds (in fire-resistant, liquid-cooled transformers) and solutions such as phthalate esters (in capacitors.)

Even so, Monsanto's statement said, much work remains to be done before PCBs can be replaced.

Commercial production of PCB's began in 1929 as the answer to the electrical industry's need for something better than mineral oil, which was the only known alternate material for use as a dielectric insulating fluid,.

Power surges in electrical equipment can cause arcs and a sustained, high-energy arc can vaporize mineral oil and cause the oil itself to catch fire. PCBs, on the other hand, need a lot of heat to ignite.

The PCBs, Monsanto said, are so fire resistant that a special incinerator—which maintains a firebox temperature of more than 2,000 degrees—was built at the Sauget, Ill., plant.

The incinerator is used by the company for PCB waste from its own production and from the operations of companies which buy PCB fluids from Monsanto.

Use in the electrical industry was only the beginning for PCBs, the position paper explains. They became important in hydraulic and heat-transfer fluids, carbonless copy paper, printing inks, plasticizers and special adhesives.

Then, in the late '60s, after some 40 years of use, PBCs began to cause concern.

In 1968, some 1,000 people in Japan fell ill after eating rice oil heavily contaminated with Japanese-produced PCBs. PCBs were being used as a heat-transfer fluid in equipment used to heat the rice oil when a leak developed and went undetected, spilling the PCB fluid in the rice oil.

The Monsanto position paper says news accounts which linked the incident with deaths, stillbirths and miscarriages, were wrong. But, the paper says, those who ate the PCB-contaminated rice oil did experience dizzyness, nausea, loss of appetite, weakness and dermatological side effects.

Infants, born to mothers who had been exposed during pregnancy, had darkened skin at birth but in all cases, the condition cleared within three months, the paper said.

Monsanto stressed that levels of PCB contamination in the Japanese industrial accident were extremely high concentrations—two-to-three parts-per-thousand. Levels reported in fish and wildlife, the report said, are so minute they are measured in parts-per-million or parts-per-billion.

In the recently discovered contamination of fish in Lake Hartwell, Commissioner E. Kenneth Aycock, M.D., of the State Department of Health and Environmental Control, said PCB levels ranged from three to 15 parts-per-million.

Measurable issues from Monsanto's Sauget Village (Ill.) treatment plant are one to two parts-per-trillion PCBs in the Mississippi River at average flow rates. Although there are no formal PCB discharge limits, proposals under consideration call for normal water concentrations at levels no more than one part-per-trillion.

After PCB contamination was found in the U.S. environment in 1970, Monsanto voluntarily began a program to stop selling the chemical to "open applications"—those uses which could likely result in losses to the environment.

That action (taking PCBs away from producers of carbonless paper, fire resistant hydraulic fluids, heat transfer fluids and plasticizers) cut Monsanto's PCB production in half—to some 45 million pounds per year. Now, Monsanto says, production is down to about 27 million pounds per year and fewer than 40 customers are buying PCB fluid.

Monsanto, according to the report, believes that the recent reports of widespread contamination are simply new finds of old contamination, not new contaminations. A 1975 report by state and federal agencies suggested that PCB contamination of the Mississippi River is a result of quantities of PCBs dumped into the river in past years, settled to the bottom where they locked in the sediment and are periodically stirred up by dredging operations.

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