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# Fisheries, Aquaculture and Environment

## Knowing the Facts About PCBs

PCBs or *polychlorinated biphenyls* were first synthesized as a chemical from chlorine, carbon, and hydrogen in 1881. Few chemicals were poised to take advantage of the new age of electricity as were PCBs. Their peculiar properties of fire resistance, non- conductivity, and low volatility meant that they would have many applications in industry. By 1929, they were being manufactured on a large scale by St. Louis Missouri's Monsanto Chemical Works Company for use as coolants in industrial transformers and capacitors. Other uses soon became apparent. Soon PCBs were finding their way into caulking, synthesized or man-made resins, waxes, asphalts, and paints. They were even used as a surface coating on carbonless copy paper.

As a compound, PCBs were easily fashioned into solids (amber/black brittle gum-like substances) or yellow liquids (thick molasses-like substances). They were very stable when out in the natural environment, resisting the natural breakdown of the elements. Only extreme heat (over 1100 C) can completely destroy them.

The dangerous bioaccumulative effects (liver damage and extreme skin rashes) of longterm exposure to PCBs did not become evident until the late 1960s. Stories of Swedish birds being poisoned and 1200 deaths of people in Japan who had ingested PCB laced rice focussed world attention on the problem. Studies completed in 1972 confirmed the health risks. Almost immediately, Monsanto banned the further sale of PCBs. Canada completely banned their use in 1977. Strict handling guidelines became law in 1985.

Since they were first used, an estimated 40,000 tonnes of PCBs were imported into Canada. Today, only 24,000 tonnes has been safely identified. Nearly 61% of PCBs are currently found in electrical transformers, 12% in capacitors, while 27% are in storage awaiting incineration. The remaining 16,000 tonnes have already been dispersed into the environment over the last seventy years.

Parliament amended the national Environmental Protection Act in 1992 to detail the procedure for proper storage of PCB materials. On PEI, our provincial policy does not allow PCBs to be landfilled in any manner. If you deal with material which you suspect contains PCBs (such as electrical equipment), it must be properly stored or disposed. Contact the [Department of Fisheries, Aquaculture and Environment](#), Air Quality and Hazardous Materials Section at 368-5047 for details.

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