



Options for PCB Disposal



Regulations have prevented new PCB uses, limited existing uses and strictly controlled handling since 1977. The Canadian Council of Ministers of the Environment (CCME), at its October 1989 annual meeting, indicated that Canadian governments would phase out PCBs in use in sensitive locations such as schools and hospitals. At this meeting, the CCME agreed to shift the emphasis of the federal-provincial program from storage to destruction.

All PCBs in Canada were imported, not manufactured here. They were widely used and as a result most communities have PCBs in use or in storage.

Information on PCBs not dispersed into the environment has been compiled into a national inventory. Changes in status from in-use to storage or destruction are now carefully monitored.

What PCB disposal options exist?

A number of options currently exist to dispose of PCBs once they are taken out of use. One option is to store them, the other options are to destroy them by chemical treatment or incineration.

What PCB storage options are there?

PCB storage is a management option until disposal/treatment facilities are made available. The accumulation of waste PCBs in Canada, together with the current shortage of destruction facilities, dictates that storage be regarded as an important interim management option.

Storage requires the construction and maintenance of secure storage facilities. As PCBs are phased out of use, they are taken to storage facilities to await destruction. There are now more than 3,000 PCB waste storage sites across Canada.

All storage sites today must meet stringent criteria for fire prevention, emergency situations, site access and design to ensure protection of the environment and human health.

How can PCBs be destroyed?

Two types of technology have been developed and approved since the 1960s. They are chemical treatment and thermal destruction or incineration.

- Chemical treatment is used to treat low concentrations of PCBs in oils. This type of process uses chemical reactions to destroy PCBs and is in widespread use across Canada. The treated oil from the process can generally be reused or recycled.
- Incineration can destroy liquid or solid PCB wastes. It is the most widely used technology for destroying highly concentrated PCBs. High temperature incineration is required to destroy PCBs at a destruction and removal efficiency of 99.9999 percent.

Federal regulations dictate performance standards for mobile incinerators and chemical treatment systems, as well as standards for air emissions and the release of solids and liquids from these systems.

What kind of facilities are able to dispose of PCBs?

Facilities capable of destroying PCB wastes include:

- Stationary destruction facilities.

The Alberta Special Waste Treatment Centre near Swan Hills is currently the only stationary Canadian facility licenced to incinerate PCB wastes, but this Centre only accepts Alberta wastes. Another destruction facility is in the public hearing/consultation stage: the Ontario Waste Management Corporation's (OWMC) facility proposed to be sited southeast of Hamilton, in the late 1990s.

PPM Canada Inc. has established a fixed chemical treatment facility in Saskatchewan to remove PCBs from contaminated mineral oil. B. C. Hydro also operates a fixed facility in British Columbia.

- Mobile destruction units.

The technology used in fixed incineration facilities has also been applied to smaller transportable units. Large transportable incineration units are available for commercial use in Canada.

Mobile chemical treatment units for treating PCB-contaminated mineral oil have been operating commercially in Canada since 1983.

- Cement kilns.

The cement manufacturing process uses high- temperature rotary kilns which are capable of destroying PCB-contaminated oil at an efficiency greater than 99.9999 percent. This approach also reduces the fuel needs of the cement kiln.

A test burn conducted in a Mississauga, Ontario cement kiln in the mid-1970s resulted in no detectable amounts of PCB or other hazardous emissions. However, public opposition led the company to withdraw its proposal to burn hazardous wastes in the plant.

Cement kilns have been used successfully in Europe to destroy wastes containing PCBs. No facilities are currently authorized in Canada for this purpose.

This factsheet is part of the Office of Waste Management's "Rainbow Series". Each colour in the rainbow represents one waste management activity as follows:

- 1) Pink - Classification
- 2) Orange - 4Rs (Reduction, Reuse, Recycling, Recovery)
- 3) Yellow - Transportation
- 4) Light Green - Storage
- 5) Dark Green - Treatment
- 6) Blue - Disposal
- 7) Purple - Waste Types

Further information can be obtained from:

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