



**Minnesota  
Pollution  
Control  
Agency**

# Use and Servicing of Equipment Containing PCBs

Hazardous Waste #4.48a, November 1998

*All information in this fact sheet is a summary of information found in 40 CFR (Code of Federal Regulations), Part 761. Please note that since federal rules are subject to change, these fact sheets are subject to change also.*

Polychlorinated biphenyls (PCBs) are a class of 209 man-made chemicals with varying toxicity, often used as an insulator in electrical equipment. PCB products range in consistency from thin, light-colored oils to yellow, viscous resins.

The use and servicing of equipment containing PCBs is both state and federally regulated, depending upon the concentration of PCBs present. The U.S. Environmental Protection Agency (EPA), under the Toxic Substances Control Act (TSCA), regulates the use, storage and disposal of PCBs with concentrations of 50 parts per million (ppm) or more. The Minnesota Pollution Control Agency (MPCA) regulates the storage and disposal of PCBs with concentrations of 50 ppm or more when they become wastes.

## TSCA Classifications

The Toxic Substances Control Act classifies PCBs in the following ways:

- Equipment that contains PCBs with a concentration of less than 50 ppm is considered *non-PCB*.
- Equipment that contains PCBs with a concentration equal to or greater than 50 ppm, but less than 500 ppm, is considered *PCB-contaminated*.
- Equipment that contains PCBs with a concentration equal to or greater than 500 ppm is considered *PCB*.

**PCBs may be used in electrical equipment (except in railroad transformers—see page 3) for the remainder of the useful life**

**of the equipment, but must follow the conditions outlined in this fact sheet.**

## Conditions for Use of PCB Transformers

1. PCB transformers that are being used or stored for reuse cannot be located near an area that poses a risk to human food, containers of food or animal feed (such as pastures, cornfields, etc.).
2. PCB transformers with a higher secondary voltage cannot be used in or near commercial buildings.
3. All PCB transformers, including those in storage for reuse, must be registered with the fire response personnel who have primary jurisdiction in the area. The following information must be registered:
  - Location of the PCB transformers;
  - Principal constituent of the dielectric fluid (such as PCBs); and
  - Name and telephone number of the contact person.
4. PCB transformers within 30 meters (90 feet) of commercial buildings must be registered with the building owner and include the following information:
  - Specific location of the PCB transformer;
  - Principal constituent of the dielectric fluid (such as PCBs); and
  - Type of transformer installation.

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Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194  
 (651) 296-6300. toll-free (800) 657-3864, TDD (651) 282-5332 or (800) 657-3864

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5. Combustible materials, such as paints, solvents, plastics, wood and paper, must not be stored inside or within five meters of a PCB transformer enclosure (i.e. vault); if the transformer is unenclosed, these materials also cannot be stored within five meters of the transformer itself.

6. Fires involving PCB transformers must be reported by the responsible party to the National Response Commission at (800) 424-8802. For information on reporting spill-related incidents, see MPCA fact sheet #4.068, *PCB Spill Cleanup Policy*.

### ***Inspections***

Each PCB transformer in use or stored for reuse must be inspected for leaks at least once every three months, with a *minimum of 30 days between inspections*.

a) If the PCB transformer is leaking and any quantity of PCBs have been released or are about to be released, the transformer must be repaired or replaced. All cleanup activities must be initiated within 48 hours of the discovery of the leak. Active leaks must be contained until appropriate action is completed, and inspections should be conducted daily. (See fact sheet #4.068, *PCB Spill Cleanup Policy*, for more details.)

b) Inspection records and maintenance history must be kept for three years after disposal of any transformer. Records must be available for inspection, and must contain the following information:

- location
- date of inspection
- person performing inspection
- location of any leaks
- estimated amount of dielectric leak
- date of cleanup, repair and containment
- description of cleanup, repair, etc.
- results of containment and daily inspection records

c) PCB transformers that have been tested and found to have a *PCB concentration less than 60,000 ppm and/or have impervious, undrained, secondary containment of at least 100 percent of the quantity of oil contained in the transformer* may be inspected every 12 months, with particular attention given to these conditions.

If a mineral oil transformer assumed to contain less than 500 ppm PCBs is tested and actually contains a concentration equal to or greater than 500 ppm PCBs, it is subject to all the requirements of 40 CFR Part 761. To bring the transformer into compliance, the following actions must be taken:

- Mark the PCB transformer within seven days.
- Mark the entrance to the PCB transformer within seven days. Register the PCB transformer with fire response personnel within 30 days.
- Replace, reclassify or install any necessary enhanced electrical protection.
- Report all fire-related incidents immediately.

## **Servicing Equipment Containing PCBs**

### ***PCB Transformers***

- Transformers that are classified as PCB-contaminated (that is, containing PCBs with a PCB concentration of 50 ppm or more but less than 500 ppm) may be serviced and rebuilt only with dielectric fluid with less than 500 ppm PCBs.
- The PCB transformer coil cannot be removed during any servicing or rebuilding. PCB transformers (that is, containing PCBs with a concentration of 500 ppm or more) may be filled or topped off with dielectric fluids at any concentration.
- PCBs removed from service must either be reused or disposed of according to CFR, Part 761.60. Dielectric fluids from PCB items cannot be mixed with any other concentration of PCBs with less than 500 ppm



PCBs. If they are mixed, the contents are then considered to be PCB (rather than PCB-contaminated) and must be disposed of in a TSCA-approved PCB incinerator. For additional details on PCB disposal, see 40 CFR, Part 761.70.

- A PCB transformer can be reclassified as PCB-contaminated or as non-PCB if the fluids in the transformer have been serviced (such as drained or refilled) and the equipment has been in service for a minimum of three months after the servicing date. ("In service" means the transformer must be used under loaded conditions that raise the temperature of the dielectric fluid to at least 50 degrees Celsius.)

### ***Hydraulic Systems and Heat Transfer Systems***

Hydraulic systems or heat transfer systems that contain a known concentration equal to or greater than 50 ppm PCBs must test the fluid at least annually after the equipment is serviced until the test shows the concentration to be less than 50 ppm.

If the test shows a concentration of 50 ppm PCBs or more, the system should be drained and refilled with oil less than 50 ppm within six months of the test. Addition of fluids with PCB concentrations equal to or greater than 50 ppm is prohibited.

### ***Electromagnets, Switches and Voltage Regulators***

PCBs at any concentration may be used in electromagnets, switches, sectionalizers, motor starters and voltage regulators, and can be used in servicing for the remainder of the useful life of this equipment *with the following restrictions:*

- PCB electromagnets cannot be used or stored for reuse where there is a risk of exposure to human food, food containers or animal feed.
- If the PCB concentration of the equipment is greater than 500 ppm, servicing that requires removal and rework of internal components is prohibited. Dielectric fluids used in servicing must be less than 500 ppm PCBs. Any fluid removed from service that contains a PCB concentration of 50 ppm or more must be disposed of according to CFR rules. These

items can also be reclassified, and must follow transformer reclassification requirements.

### ***Compressors and Natural Gas Pipelines***

PCBs may be used indefinitely in compressors and the liquids of natural gas pipelines at PCB concentrations of less than 50 ppm, as long as they are marked according to CFR rules.

### ***Circuit Breakers, Reclosers and Cables***

PCBs at any concentration may be used in circuit breakers, reclosers and cables, and can be used in servicing for the remainder of the useful life of the equipment *with the following restrictions:*

- Dielectric fluid used in servicing must have less than 50 ppm PCBs.
- Any circuit breaker, recloser or cable that contains a PCB concentration of 50 ppm or more must be serviced according to CFR rules.

### ***Railroad Transformers***

Since July 1, 1986, the use of railroad transformers that contain dielectric fluids with PCB concentrations greater than 1,000 ppm has been prohibited. Railroad transformers may be serviced only with dielectric fluid containing less than 1,000 ppm PCBs.

### **For More Information**

The MPCA has a series of fact sheets available on the use, maintenance and disposal of equipment using PCBs, based on state and federal guidelines. All of these fact sheets are available on the MPCA Web site at <http://www.pca.state.mn.us>. Look under Waste/Publications/for Businesses.

- *Use and Servicing of Equipment Containing PCBs* (#4.48a)
- *Labeling and Marking Requirements for Equipment Containing PCBs* (#4.48b)
- *Storage and Disposal of PCB-Contaminated Equipment and Wastes* (#4.48c)



- *Required Record Keeping for PCB-Contaminated Equipment and Wastes* (#4.48d)
- *Manifest Requirements for Shipping PCB Wastes* (#4.48e)
- *PCB Spill Cleanup Policy* (#4.48f)
- *Managing PCBs in Fluorescent Light Ballasts* (#4.48g)

If you need further information, contact the MPCA at:

- (651) 296-6300
- (651) 282-5332 (TTY)
- (800) 657-3864 (Voice/TTY)

or EPA's TSCA Hotline at:

- (202) 554-1404