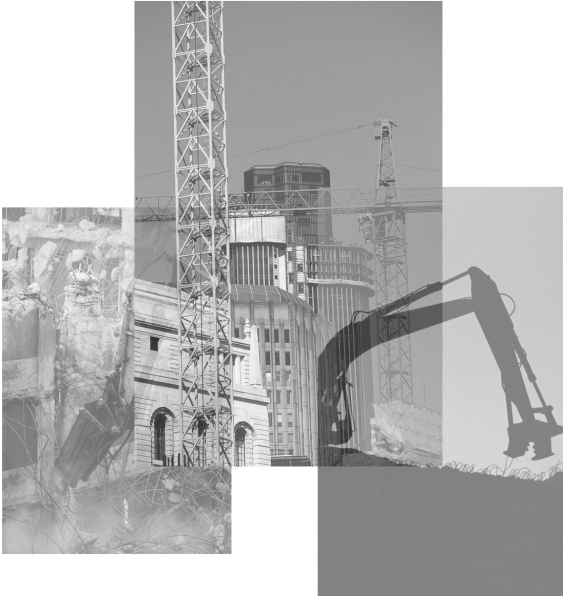


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VIII. Polychlorinated Biphenyl (PCB) Waste Requirements for Construction Activities

Before beginning any construction activities on existing buildings, you should evaluate the potential for generating PCB-laden waste. The PCB regulations and requirements apply to both PCB waste materials and PCBs still in use. Because of potential harmful effects on human health and the environment, federal law banned U.S. production of PCBs as of July 2, 1979. However, PCB-containing materials may be present at construction and demolition sites.

Definitions and Acronyms

Polychlorinated Biphenyls (PCBs)—Any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances that contain such a substance. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in

paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other applications.

PCB—Polychlorinated Biphenyl

RCRA—Resource Conservation and Recovery Act

TSCA—Toxic Substances Control Act

A. Could Your Construction Project Site Contain PCBs?

PCBs were used in hundreds of industrial and commercial applications including electrical (e.g., capacitors and transformers), heat transfer, hydraulic, and lighting equipment. Items with a PCB concentration of 50 parts per million (ppm) or greater are regulated for disposal under 40 CFR Part 761. The regulatory text

discussing this program (40 CFR Part 302 and Part 761) can be found at <http://ecfr.gpoaccess.gov> under "Title 40 - Protection of the Environment." The most likely sources of PCBs at construction sites are:

- Mineral-oil filled electrical equipment such as motors or pumps manufactured prior to July 2, 1979;
- Capacitors or transformers manufactured prior to July 2, 1979;
- Plastics, molded rubber parts, applied dried paints, coatings or sealants, caulking, adhesives, paper, Galbestos, sound-deadening materials, insulation, or felt or fabric products such as gaskets manufactured prior to July 2, 1979;
- Fluorescent light ballasts manufactured prior to July 2, 1979;
- Waste or debris from the demolition of buildings and equipment manufactured, serviced, or coated with PCBs; and
- Waste containing PCBs from spills, such as floors or walls contaminated by a leaking transformer.

For demolition activities, the building owner should have an inventory of all items containing PCBs. However, if the equipment is not marked and if no records exist, you will need to identify any PCB-containing materials. PCBs are difficult to locate and identify. PCB concentrations may vary from item to item and

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PCB Trade Names and Other Synonyms To Help You Identify PCB-Containing Equipment

Aceclor	Chorinol	Hyrol	Polychlorinated diphenyl
Adkarel	Clophen	Hyvol	Polychlorinated diphenyls
ALC	Clophenharz	Inclor	Polychlorobiphenyl
Apirolio	Cloresil	Inerteen	Polychlorodiphenyl
Apirorio	Clorinal	Inertenn	Prodelec
Arochlor	Clorphen	Kanechlor	Pydraul
Arochlors	Decachlorodiphenyl	Kaneclor	Pyraclor
Aroclor	Delor	Kennechlor	Pyralene
Aroclors	Delorene Diaclor	Kenneclor	Pyranol
Arubren	Dicolor	Leromoll	Pyroclor
Asbestol	Diconal	Magvar	Pyronol
ASK	Diphenyl, chlorinated	MCS 1489	Saf-T-Kuhl
Askael	DK	Montar	Saf-T-Kohl
Askarel	Duconal	Nepolin	Santosol
Auxol	Dykanol	No-Flamol	Santotherm
Bakola	Educarel	NoFlamol	Santothern
Biphenyl, chlorinated	EEC-18	Non-Flamol	Santovac
Chlophen	Elaol	Olex-sf-d	Solvol
Chloretol	Electrophenyl	Orophene PCB	Sorol
Chlorextol	Elemex	PCB's	Soval
Chlorinated biphenyl	Elinol	PCBs	Sovol
Chlorinated diphenyl	Eucarel	Pheaoclor	Sovtol
Chlorinol	Fenchlor	Phenochlor	Terphenychlore
Chlorobiphenyl	Fenclor	Phenoclor	Therminol
Chlorodiphenyl	Fenocloro	Plastivar	Therminol
Chlorphen	Gilotherm	Polychlorinated biphenyl	Turbinol
Chorextol	Hydol	Polychlorinated biphenyls	

within classes of items. If you cannot locate and identify PCB-containing materials yourself, you will need to contact a company that specializes in environmental engineering, remediation, or sampling and analytical services. Your state environmental agency may be able to assist in locating or recommending such companies. EPA's Home Page contains a "Where you live" link that contains links to state environmental agencies: <http://www.epa.gov/epahome/wherelive.htm>.

B. Are You Responsible for Addressing PCB Wastes?

The PCB regulations at 40 CFR Part 761 define the "generator" as being responsible for handling, storing, transporting, and disposing of PCB wastes. The "generator" is considered the party that owns the material.

For most construction projects, multiple parties will be involved; all may be liable if the PCB handling and disposal requirements are not followed.

In a typical construction project, PCB wastes are generated in one of two ways:

The PCB regulations can be found at <http://www.epa.gov/pcb/laws.html>.

- PCB-contaminated soils and materials are discovered during grading or digging (i.e., remediation wastes); or
- PCB-contaminated buildings or equipment are discovered during demolition.

In these situations, the contractor or subcontractor who first discovers the PCB-containing material typically is responsible for notifying the general contractor, developer, and/or owner. Because the PCB-containing material was present on the site prior to construction activities, the developer or owner typically is responsible for ensuring that all PCB wastes are handled and disposed of properly.

Because PCBs were banned as of 1979, it is unlikely that a contractor or subcontractor will bring PCB-bearing materials on site during a construction project. However, if this happens, that contractor or subcontractor typically would be responsible for complying with the PCB requirements.

C. What Are the Penalties?

Federal environmental laws give a range of enforcement options to EPA, state agencies, and individual citizens. Most laws authorize EPA (1) to issue an administrative order or impose an administrative penalty, (2) to file a civil action in a federal court for injunctive relief or a civil penalty, or (3) to file a criminal action in a federal court to impose criminal sanctions.

In addition to fines, you may need to pay legal fees and face project delays. If legal action is taken against your construction site, you also may be subject to increased scrutiny at all of your other construction sites by regulatory agencies and the public.

If you do not follow the PCB waste management and permitting standards listed in 40 CFR Part 761, you may be fined in civil penalties of up to \$32,500 per day per violation. You also may be fined if you release PCB waste into the environment. You can lose any existing permits for your construction site and/or need to stop work until you meet EPA requirements.

You also may face penalties or actions for past or present handling, storage, treatment, transportation, or disposal of PCB waste that may be a hazard to human health or the environment.

D. In General, What are the Storage and Disposal Requirements?

The general requirements for handling PCB materials and equipment identified on site prior to demolition or remodeling projects consist of: identifying and labeling the material, notifying EPA, properly storing the material, and properly disposing of the material. If you discover PCB wastes during grading or digging (e.g., buried transformers), the storage and handling requirements can be very complex and depend on the amounts and concentrations of the waste. Contact your EPA Regional office for guidance on how to properly handle PCB materials, equipment, and wastes.

Identification and Labeling

Before you begin any demolition or remodeling activities, identify and label all PCB-containing equipment or material that will be disturbed. You can find an example of the two approved PCB labels in 40 CFR Part 761.45. Large mark (ML) is the larger, preferred label and is square from 6 inch by 6 inch to 2 inch by 2 inch. Small mark (MS) is the smaller label that should be used only on items that will not accommodate the ML and is rectangular from 1 inch by 2 inch to 0.4 inch by 0.8 inch. The following items must be labeled:

- PCB containers;
- Large PCB transformers, PCB low- and high-voltage capacitors, and equipment containing these transformers or capacitors at the time of removal from use if not already marked;
- Large PCB high-voltage capacitors at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked;
- Electric motors using PCB coolants;
- Hydraulic systems using PCB hydraulic fluid;
- Heat transfer systems (other than PCB transformers) using PCBs;
- PCB article containers containing articles or equipment that must be marked; and
- Each storage area used to store PCBs and PCB items for disposal.

(Note - Items containing PCBs cannot be reused or recycled; there is no provision in the Toxic Substances Control Act for using, reusing, or recycling items or materials containing PCBs. However, items or materials containing less than 2 ppm PCBs may be used, reused, or recycled without restriction.)

For PCB waste disposal, there are two ways to determine regulatory status of items or materials suspected of containing PCBs: assume "worst case" (greater than or equal to 50 ppm) and remove and dispose the suspect item(s); or, analyze samples of the items for PCB concentration. The PCB rules do not require

You may find a list of EPA Regional PCB coordinators at <http://www.epa.gov/pcb/coordin.html> and a list of EPA Headquarters PCB contacts at <http://www.epa.gov/pcb/contactus.html>.

you to test, although EPA recommends it. Note that sampling and analysis may be expensive. It may be more cost-effective to assume a "worst case" scenario. EPA developed the following guidelines to assist you with your assumptions.

**PCB Concentration Assumptions
(for Equipment Manufactured Prior to July 2, 1979)**

Item	Concentration Assumption
Transformers with <3 lbs of fluid Circuit breakers Reclosers Oil-filled cable Rectifiers with unestablished PCB concentrations	<50 ppm PCB (not regulated by TSCA)
Mineral-oil filled electrical equipment without any established PCB concentration (pole-top and pad-mounted distribution transformers are considered mineral-oil filled)	>50 ppm and <500 ppm
Transformers with >3 lbs of fluid Capacitors	>500 ppm

Notification

If you are storing or disposing of PCB waste, complete a Notification of PCB Activity Form (see <http://www.epa.gov/pcb/data.html>) and mail it to the Fibers and Organics Branch of the National Program Chemicals Division in EPA's Office of Pollution Prevention and Toxics (OPPT). EPA will assign an identification number (ID number) to the construction site for handling PCBs. This ID number is for activities involving PCBs and may not be used for any other waste activities. If the construction site has already received an ID number for other regulated wastes (e.g., RCRA), EPA will verify the number and assign the same ID number for the site's PCB activities. It is not necessary to have a RCRA ID number to receive a PCB ID number.

Storage and Disposal

Storage requirements for PCB-containing materials depend on the end use of those materials. You can store approved materials for reuse for up to five years in an approved, permanent, PCB storage area. (Note - The storage-for-reuse provisions at 40 CFR Part 761.35 are meant to capture equipment such as transformers. The equipment must be manufactured for a particular use. It is not meant for any item or material containing PCBs. See the definition of "PCB Article" at 40 CFR Part 761.3.) You can store materials for disposal for up to 30 days in a temporary storage area or for up to one year in a permanent PCB storage location. In all cases, you must mark the items with the date they were removed from service and inspect the area every 30 days for any spills or leaks. A temporary storage for disposal area must meet the following requirements:

- Be marked with a PCB ML label;
- Have a roof and walls to protect the materials from rain or snow;

- Have impermeable floor with 6-inch curbing and no drains;
- Have containment volume equal to at least two times the volume of the largest PCB article or 25 percent of the total volume of all PCB articles, whichever is greater;
- Not be located in a 100-year flood plain; and
- Have all leaking equipment stored in a nonleaking PCB container with absorbents and have non-leaking equipment on pallets.

You can also store PCB material in an area permitted by RCRA to store hazardous wastes. If you operate an on-site storage area, you need to complete the Notification of PCB Activity Form as discussed above.

If at any time during site inspection or material handling you discover a spill or leak, you must clean it up within 72 hours of discovery. EPA has provided a detailed spill cleanup policy in 40 CFR Part 761, Subpart G. The requirements of this plan vary depending on the size and concentration of the spill but can include the following:

For high concentration spills (defined as 500 ppm or greater PCBs, or low concentration spills involving more than one pound PCBs by weight, or more than 270 gallons of untested material) within 24 hours of the spill or within 48 hours for spills involving PCB transformers:

- Notify the National Response Center at 1-800-424-8802 if the spill involved 10 pounds or more by weight of PCBs;
- Notify local environmental agencies;
- Notify local authorities immediately if there was a fire;
- Restrict and label the visible spill area;
- Record and document the extent of PCB contamination of the estimated spill area;
- Immediately begin cleanup of the visible spill area; once the concentration level of the PCB spill is determined, begin the appropriate cleanup depending upon the release location, exposure risk, PCB concentration, and future use of the site; and
- Test the area to confirm that the PCB concentration met EPA-specified levels.

For low concentration spills (defined as less than 500 ppm PCB, or less than one pound of PCBs by weight, or less than 270 gallons of untested material):

- Double wash/rinse all contaminated surfaces within 48 hours of the spill, properly dispose of the wash water; and
- Collect a standard wipe test sample from smooth surfaces, using hexane wipe samples to detect PCB contamination and confirm that the concentration is not more than 10 micrograms per 100 square centimeters.

For information specific to fluorescent light ballast disposal, see <http://www.epa.gov/pcb/Ballastchart.pdf>.

Note that fluorescent light ballasts containing mercury are considered universal wastes; see Section V-E of Part I of this guide for more information.

At the completion of cleanup, records and certification forms must be maintained for a period of 5 years. Your records should contain the following:

- Identification of the source of the spill (e.g., type of equipment);
- Estimated or actual date and time of the spill;
- The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather, include the nature and duration of the delay);
- A brief description of the spill location;
- Pre-cleanup sampling data used to establish the spill boundaries if required;
- A brief description of the sampling methodology used to establish the spill boundaries;
- A brief description of the solid surfaces cleaned and of the double wash/rinse method used;
- Approximate depth of soil excavation and the amount of soil removed; and
- A certification statement signed by the responsible party stating that the cleanup requirements have been met and that the information contained in the record is true to the best of his/her knowledge.

Any spills that are deemed greater than 72 hours old must be cleaned up (remediated) by the methods listed in 40 CFR Part 761.61. These methods are not allowed to clean up the following:

- Surface or ground waters;
- Sediments in marine and freshwater ecosystems;
- Sewers or sewage treatment systems;
- Any private or public drinking water sources or distribution systems;
- Grazing lands; or
- Vegetable gardens.

Remediation cleanup requirements include characterizing the cleanup site and notifying, in writing, the EPA Regional Administrator, the Director of the state or tribal environmental protection agency, and the Director of the county or local environmental protection agency where the cleanup will be conducted at least 30 days prior to the date that the cleanup of a site begins.

For PCB waste disposal, you must find an approved PCB waste disposer. (Note - transporters do not need to be approved, but the generator or whoever is offering the waste for shipment must ensure that the transporter has submitted a Notification of PCB Activity Form and received an ID number for their PCB activities. In addition to the waste going to an approved disposer, that disposer must also have notified and received an ID number for their PCB activities.) To transport the waste for either commercial storage or disposal, you must complete a hazardous waste manifest. You can get a hazardous waste manifest from either your hazardous waste transporter or from your state hazardous waste coordinator. When you complete the manifest, sign it and keep a copy for your records. Once the waste has reached its final destination, the hazardous waste storer/disposer will sign the manifest and return a copy to you.

You also must keep an annual documentation log for certain storage and disposal activities. For details on the specific requirements of the annual documentation log, see 40 CFR Part 761.180.

E. What Questions Do You Need to Answer Before Starting Your Construction Project?

You can use the questions in Section II of Part I of this guide to start a discussion among all parties involved in the construction project and to assign tasks to ensure all environmental requirements are met. Each question has a space next to it to designate who will take the lead on each task. Note that designating a responsible party does not absolve you of meeting environmental requirements or liability for failing to meet these requirements.

F. Where Can You Get Additional Information?

Many tools are available to assist you with the PCB permit requirements, including the following:

- The Polychlorinated Biphenyl (PCB) Self-Audit Checklist in Part II of this guide;
- The Construction Industry Compliance Assistance Center provides information on hazardous and toxic waste regulations that apply to the construction industry:
<http://www.cicacenter.org/hazwaste.html>;
- The National Environmental Compliance Assistance Clearinghouse contains a search engine to help in finding compliance assistance tools, contacts, and EPA-sponsored programs:
<http://www.epa.gov/clearinghouse/>;
- EPA's PCB Homepage includes links to the regulatory text (40 CFR Part 761) as well as lists of approved PCB waste handlers: <http://www.epa.gov/pcb/>;
- The Office of Pollution Prevention and Toxics (OPPT) has compiled a summary of PCB wastehandlers in the United States: <http://www.epa.gov/pcb/waste.html>;
- The Minnesota Pollution Control Agency has prepared a series of fact sheets summarizing the federal regulations:
 - Use and Servicing of Equipment Containing PCBs
http://www.pca.state.mn.us/waste/pubs/4_48a.pdf,
 - Labeling and Marking Requirements for Equipment Containing PCBs
http://www.pca.state.mn.us/waste/pubs/4_48b.pdf,
 - Storage and Disposal of PCB-Contaminated Equipment and Wastes
http://www.pca.state.mn.us/waste/pubs/4_48c.pdf,
 - Required Recordkeeping for PCB-Contaminated Equipment and Wastes
http://www.pca.state.mn.us/waste/pubs/4_48d.pdf,
 - Manifest Requirements for Shipping PCB Wastes
http://www.pca.state.mn.us/waste/pubs/4_48e.pdf,
 - Managing PCBs in Fluorescent Light Ballasts
http://www.pca.state.mn.us/waste/pubs/4_48f.pdf, and
 - PCB Spill Cleanup Policy http://www.pca.state.mn.us/waste/pubs/4_48g.pdf; and
- EPA's "Where you live" page contains links to state environmental agencies:
<http://www.epa.gov/epahome/wherelive.htm>.