Frequently Asked Questions About PCBs

In the News: NYC Pilot Study on PCBs in Schools

In January 2010, New York City (NYC) began a pilot study with the U.S. Environmental Protection Agency (EPA). The goals of the study are to measure indoor polychlorinated biphenyl (PCB) levels in NYC school buildings, identify PCB containing caulk and other potential PCB sources and determine the most effective ways to reduce exposures.

While the study is not yet complete, early results have identified lighting ballasts in older fluorescent lighting fixtures, in addition to caulk, as a source of PCBs in the pilot school buildings. Old lighting ballasts may contain PCB oil and as the ballasts age the PCB oil can leak onto nearby surfaces or produce vapors in the air. PCB air levels in the pilot schools have generally been very low and well within the margin of safety used by EPA to set guidelines for PCBs in air.

Information about the pilot study can be found on the NYC Department of Education website at http://schools.nyc.gov/Offices/SCA/Reports/EPA/default.htm. The pilot study is ongoing. Information about the air guidance levels can be found on the EPA website at: http://www.epa.gov/pcbsincaulk/maxconcentrations.pdf.

What are PCBs?

PCBs (Polychlorinated Biphenyls) are a group of manmade chemicals. PCBs were widely used in building materials and electrical products in the past. The U.S. Environmental Protection Agency banned the manufacturing and certain uses of PCBs in 1978, but buildings constructed or renovated between 1950 and 1978 may still have building materials and electrical products that contain PCBs. Examples of products that may contain PCBs include caulk, paint, glues, plastics, fluorescent lighting ballasts, transformers and capacitors.

How are people exposed to PCBs?

PCBs continue to be widespread in our soil, air, water and food because of past use and disposal. PCBs break down very slowly and can remain in the environment for a long time. Almost everyone has been exposed to PCBs because of the widespread presence of PCBs in the environment. Most people have some PCBs in their bodies. In general, however, PCB levels in people have been going down since they were banned.

- Food is the main source of PCB exposure for most people. Foods that contain small amounts of PCBs include meat, dairy products and fish (especially fish caught in polluted waters). Current health advisories on chemicals in sport fish and game can be found on the New York State Department of Health website at http://www.health.state.ny.us/environmental/outdoors/fish/fish.htm.

- Building materials and electrical products can generate PCB-containing vapors and dust when they break down or are disturbed. Building occupants may be exposed by breathing in PCB-containing dust or vapors, accidental hand to mouth contact, or by skin contact with PCB materials.

Can a medical test determine exposure to PCBs?

Laboratory tests can measure PCB levels in blood, fat tissue and breast milk. These tests are useful for research but they cannot determine when, where, or for how long a person was exposed to PCBs. Nor can they determine the likelihood of adverse health effects from PCB exposure.

What are the potential health effects from exposure to PCBs?

The potential for health effects from PCBs, as with other chemicals, depend on how much, how often, and how long someone is exposed. Existing scientific studies have not shown PCB exposures from building materials to cause health effects in building occupants. While these studies are limited, they included buildings that generally have much higher levels than those seen in the pilot schools.

- Studies have shown behavioral and developmental problems among children whose mothers were either exposed to large amounts of PCBs or regularly ate fish from contaminated waters during pregnancy.

- Evidence is limited on PCBs and cancer in humans, but PCBs are classified as probable human carcinogens. Some studies of workers suggest that high-level exposure increases the risk of liver cancer. PCBs have been found to cause cancer and other health effects in laboratory animals.

- Scientists have looked at PCB exposure as a risk factor for developing disorders of the liver, thyroid, reproductive and immune systems. These studies have shown inconsistent results and do not provide a clear link between PCB exposure and these health effects.

Although high-dose exposure to PCBs may cause chloracne, a rash-like condition, nausea, vomiting, abdominal pain, headaches and dizziness, severe symptoms like these have only been seen among people with exposure to large amounts of PCBs in the workplace or following accidental consumption.

What are the potential health effects from exposure to PCBs in NYC schools?

There is no immediate health concern and health effects from long term exposure to the air in school buildings are unlikely to occur at the PCB levels seen in the NYC schools. To better understand air levels in schools, EPA has developed air guidance levels that are very protective of human health. These levels contain a wide margin of safety and include consideration of sensitive subpopulations and a lifetime of exposure. Air results from the NYC pilot study in schools have been within the margin of safety. (Information about the air guidance levels can be found on the EPA website at: http://www.epa.gov/pcbsincaulk/maxconcentrations.pdf).

What can be done to reduce PCB exposures in buildings?

Potential exposures to PCBs should be minimized. Proper cleaning and building maintenance can minimize exposure to PCBs from building materials. Below are some practical tips.

Building managers and maintenance staff should:

- **Reduce the potential for PCB exposure:** Maintain building materials and electrical products in good condition. Conduct visual inspections routinely to identify and remedy deteriorating caulk and leaking lighting ballasts.

- **Maintain good air flow in buildings:** Conduct routine inspections and maintenance of HVAC and ventilation systems to ensure these are functioning properly. HVAC and general ventilation supply and exhaust fans should be operated while schools are occupied to optimize ventilation and air circulation.

- **Clean buildings thoroughly and frequently:** Use a wet mop or damp cloth to clean all accessible horizontal and vertical surfaces regularly. Use vacuums with high-efficiency filters to avoid spreading fine particles.

General precautions for teachers, students, parents and caregivers:

- Wash hands with soap and water after performing cleaning activities and before eating or drinking
- Wash children's toys regularly
- Keep children from touching caulk or surfaces near caulk
- Report damaged caulking or leaking ballasts to building manager

Are special procedures required for repair work that may disturb PCB-containing caulk or lighting ballasts?

To prevent PCB exposure, all repairs and renovations should be conducted by trained maintenance workers or an experienced contractor using safe work practices. Proper cleaning methods should be used to minimize potential exposure to PCBs after repairs are completed.

PCB-containing caulk can contaminate surrounding surfaces if it is removed and discarded improperly. Any repair that will disturb old caulk (e.g. removing or replacing a window) should be done by trained workers. Schools should follow The New York State Education Department's Protocol for Addressing Polychlorinated Biphenyls (PCBs) in Caulking Materials in School Buildings. The protocol offers guidance on testing caulk and soil, as well as best practices for abatement. This guidance may also be useful for non-school buildings. [http://www.p12.nysed.gov/facplan/HealthSafety/PCBinCaulkProtocol-070615.html]

PCB-containing lighting ballasts that are damaged can leak onto surrounding surfaces or produce vapors in the air. For more information on the handling and disposal of lighting ballasts, see the US Environmental Protection Agency's guide for the proper maintenance, removal, and disposal of PCB-containing fluorescent lighting ballasts at http://www.epa.gov/wastes/hazard/tsd/pcbs/pubs/ballasts.htm.

Additional Information

EPA Factsheet: http://www.epa.gov/pcbsincaulk/index.htm
NYC Department of Education website: http://schools.nyc.gov/Offices/SCA/Reports/EPA/default.htm

Call 311 *for more information. Translation services are available.*

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