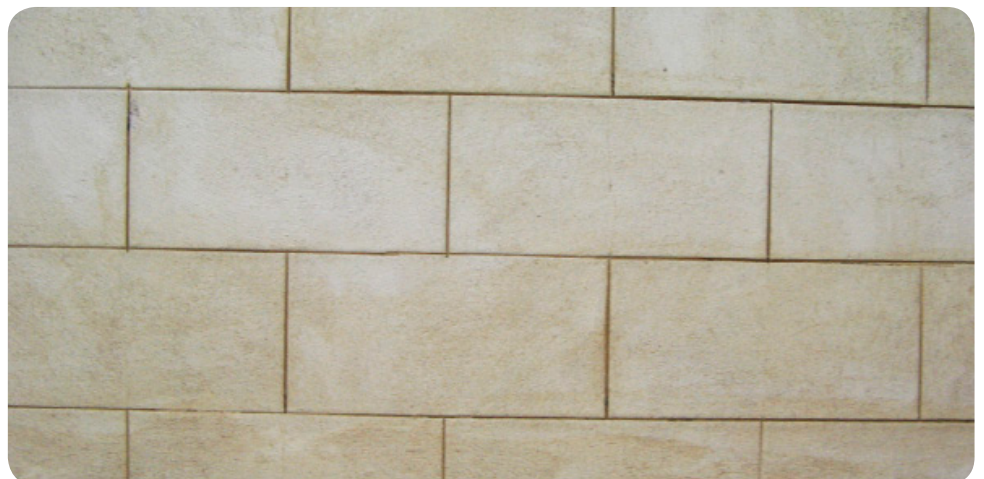




Preventing Exposure to PCBs in Caulking Material



PCBs are found in high levels in building caulk

Caulk containing high levels of PCBs (polychlorinated biphenyls) has been found in many schools and other buildings built or remodeled before 1979. Because PCBs can migrate from the caulk into air, dust, surrounding building materials, and soil, EPA is concerned about potential PCB exposure to building occupants.

Health impacts of PCB exposure

PCBs are man-made toxic chemicals that persist in the environment and bioaccumulate in animals and humans. PCBs were manufactured in the United States between 1950 and 1979, before their manufacture was banned by Congress due to concerns about their potential for adverse effects on human health and the environment. Exposure to PCBs can affect the immune system, reproductive system, nervous system, and endocrine system. In humans, PCBs are potentially cancer-causing.

Protect children and other building occupants

An important step to protect children and other building occupants is to minimize the potential for PCBs to be present in the indoor air. Indoor air levels of PCBs within a school can be reduced by ensuring that the ventilation system is operating as designed, and to repair or improve the system if it is not.

The following additional steps described below can help reduce exposure to PCBs in caulk until it can be removed.

- Clean frequently to reduce dust and residue inside buildings.
- Use a wet or damp cloth or mop to clean surfaces.
- Use vacuums with high-efficiency particulate air (HEPA) filters.
- Do not sweep with dry brooms and minimize the use of dusters.
- Wash hands with soap and water after cleaning and before eating or drinking.

Test for PCBs in buildings built between 1950 and 1979

If school administrators and building owners are concerned about exposure to PCBs and wish to supplement these steps, EPA recommends testing to determine if PCB levels in the air exceed EPA's suggested public health levels. If testing reveals PCB levels above these levels, schools should attempt to identify any potential sources of PCBs that may be present in the building, including testing samples of caulk and other building materials (e.g., paints, floor and ceiling tiles) and looking for other potential PCB sources (e.g., old transformers, capacitors, or fluorescent light ballasts that might still be present at the school).

If elevated air levels of PCBs are found, schools should also have the ventilation system evaluated to determine if it is contaminated with PCBs. Although the ventilation system is unlikely to be an original source of PCB contamination, it may have been contaminated before other sources of PCBs were removed from the school and may be contributing to elevated air levels. Contaminated ventilation systems should be carefully cleaned. Ideally, such cleaning should be planned in concert with removal of any sources of PCBs that are found to avoid re-contamination of the system.

During the search for potential sources, schools should be especially vigilant in implementing practices to minimize exposures and should retest to determine whether those practices are reducing PCB air levels. EPA will assist in developing a plan to reduce exposure and manage the caulk. Your EPA regional PCB coordinator can direct you to a PCB testing lab; see the back cover for more information.

PCBs were not added to caulk after 1979. Therefore, in general, schools built after 1979 do not contain PCBs in caulk.

Avoid exposure to PCBs in building caulk

PCBs may be released to air from intact, undisturbed caulk through off-gassing, and people may inhale the released PCBs. The condition of the caulk is not an indicator of the presence of PCBs. The only way to be sure that caulk has PCBs is to have a professional test the caulk. In addition to inhalation from PCBs in the air or dust, exposure may occur when a person comes in contact with the caulk and any surrounding materials into which the PCBs may have been released (e.g., brick, concrete, wood). Exposure may also occur through contact with PCB-contaminated soil adjacent to buildings. Soil may become contaminated with PCBs when caulk weathers.

Protections during removals, renovations

Schools, building owners, and day-care providers in public and commercial buildings need to follow PCB-safe renovation practices to minimize potential exposures resulting from renovations to workers, teachers, and children.

It is important to manage the removal in a way that minimizes workers' exposure to the PCBs (e.g., use protective clothing such as facemasks, gloves, etc.) and prevents the release of PCBs into the environment. The work practices described below can help reduce exposure to PCBs in caulk until it can be removed.

In addition to the safeguards mentioned above:

- Wear appropriate protective clothing when conducting cleanup activities.
- Dispose of all cleanup materials (mops, rags, filters, water, etc.) in accordance with all federal, state, and county regulations.
- For caulk used on windows, walls, columns, and other vertical structures that people may come into contact with, use heavy-duty plastic and tape to contain the area so that caulk or dust and debris from the surrounding masonry do not escape. The plastic should cover the caulk and surrounding areas of masonry.

EPA is helping to address the issue of PCBs in caulk

EPA has conducted research on how the public is exposed to PCBs in caulk and on the best approaches for reducing exposure and potential risks associated with PCBs in caulk. Based on EPA's Office of Research and Development's laboratory research, encapsulation was found to be most effective for interior surfaces that contain low levels of PCBs (i.e. several hundred parts per million). Depending on the PCB reduction goal, the performance of the encapsulant, and the conditions of the building, the upper limit of the PCB concentration for successful encapsulation may vary. Therefore, post-encapsulation monitoring is an essential part of the encapsulation process. Building owners should consult EPA's research on this issue for more specifics (see ORD report). Encapsulation may be useful for the reduction of emissions from secondary sources such as contaminated building materials under and around PCB-containing caulk or paint that has been removed. Encapsulation was not found to be effective in reducing emissions from sources that have a high PCB content (for example caulk) for more than a short period of time. Because each site will present unique circumstances, please consult your EPA PCB Regional Coordinator (www.epa.gov/pcb) regarding the application of encapsulation measures on a case by case basis.

Where PCBs have been found in caulk, EPA is committed to helping schools and communities enact plans to reduce exposure. Please contact your regional PCB coordinator for help with assessing contamination and exposure and developing cleanup plans. A list of the regional PCB coordinators can be found at www.epa.gov/pcb, or call EPA's Toxic Substances Control Act (TSCA) Hotline at 888-835-5372.

Summary

EPA is particularly concerned when PCBs are present during renovation or remodeling activities because these activities increase the potential likelihood of exposure.

- Keep people out of areas where renovation or remodeling activities are occurring.
- Promote safe work practices during renovation activities.
- Take actions to safely remove caulk during PCB removal or renovation projects and undertake and complete the work in a timely fashion.

Reducing Potential Exposures to PCBs from Caulk in Schools and Other Buildings

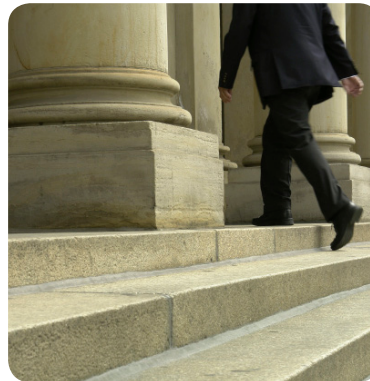
Points to Remember

- 1 EPA is concerned about potential exposure to PCBs (polychlorinated biphenyls) in caulk found in older schools and buildings. Consider testing for PCBs by having your air monitored or test the caulk.
- 2 Call 888-835-5372 or visit <http://www.epa.gov/pcbs> to find your EPA regional PCB coordinator.
- 3 Talk to your EPA regional PCB coordinator who will provide you with simple actions to take today, and longer term actions for removing the sources of PCBs including developing a cleanup plan.
- 4 Prioritize where you should first concentrate work.
- 5 Implement the plan.
- 6 Retest and monitor for PCBs in the air once removal is complete.

For more information

<http://www.epa.gov/pcbsincaulk>
EPA's PCBs Toxic Substances Control Act (TSCA)
Hotline: 888-835-5372

This fact sheet is intended solely for guidance. It does not replace or supplant the requirements of the Toxic Substances Control Act or the PCB regulations at 40 C.F.R. part 761, and it is not binding on the U.S. Environmental Protection Agency or individuals. Please refer to the regulations at 40 C.F.R. part 761 for specific requirements relating to PCBs and PCB-containing materials.



For more information:

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