

Identifying and Managing Potential Exposures of Aging Buildings

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Mold

There are currently **no federal regulations** that set specific limits for indoor mold concentrations or mold spores. Instead, mold is managed through broader workplace safety standards, state-specific laws, and industry best practices.

Guidance from federal agencies

CDC

Mold Clean Up Guidelines and Recommendations Feb 2024

<https://www.cdc.gov/mold-health/about/clean-up.html>

EPA

“Mold”

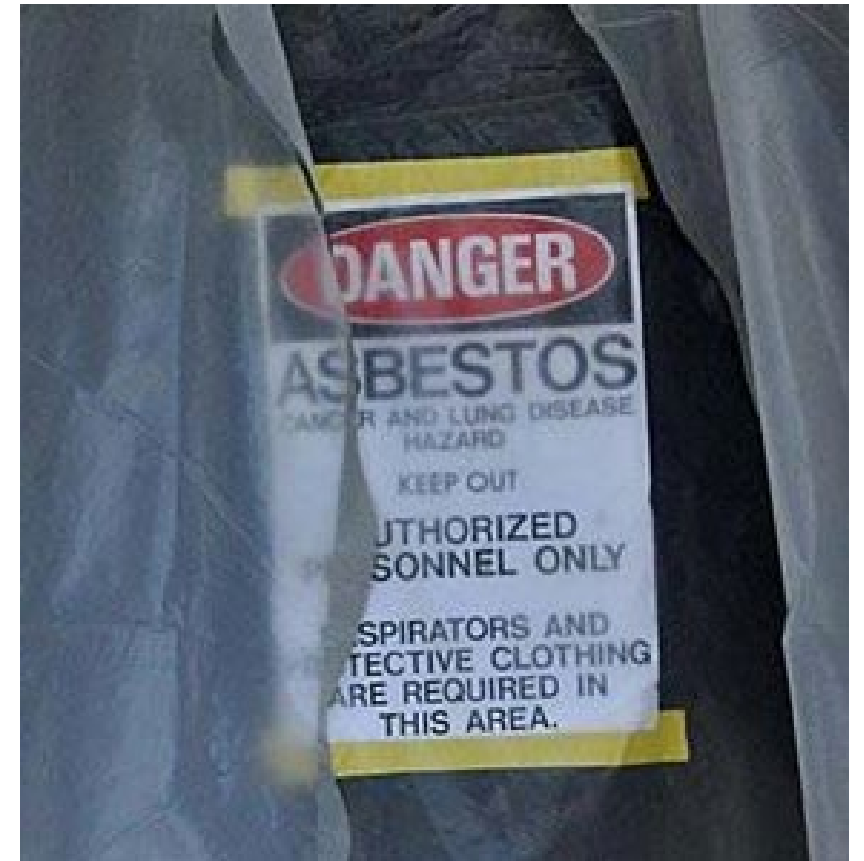
<https://www.epa.gov/mold>

The Key to Mold Control is Moisture Control

- In the absence of federal law, the restoration industry follows the **ANSI/ICRC S520 Standard for Professional Mold Remediation**. This document provides the industry-accepted procedures for:
 - Assessing mold contamination.
 - Establishing containment to prevent the spread of spores.
 - Properly removing moldy materials rather than just "killing" them with chemicals.
- There are no specific North Carolina state laws or regulations setting permissible exposure limits (PELs) for mold or mandating remediation standards. However, mold is addressed indirectly through the [NC Residential Rental Agreements Act \(N.C.G.S. § 42-42\)](#), which requires landlords to maintain fit and habitable premises, including fixing moisture issues and structural issues that lead to mold

Asbestos

- Although certain uses of asbestos have been banned, asbestos can still be found in roofing materials, drywall, floor tiles, and other similar building materials. Additionally they can also be found in coatings and compounds, plastics and other applications.
- In North Carolina, asbestos regulations are primarily administered by the North Carolina Department of Health and Human Services (NCDHHS), Division of Public Health, Health Hazards Control Unit (HHCU).
- The Occupational Safety and Health Administration (OSHA) has established permissible exposure limits (PELs) to protect employees in general industry and in construction.

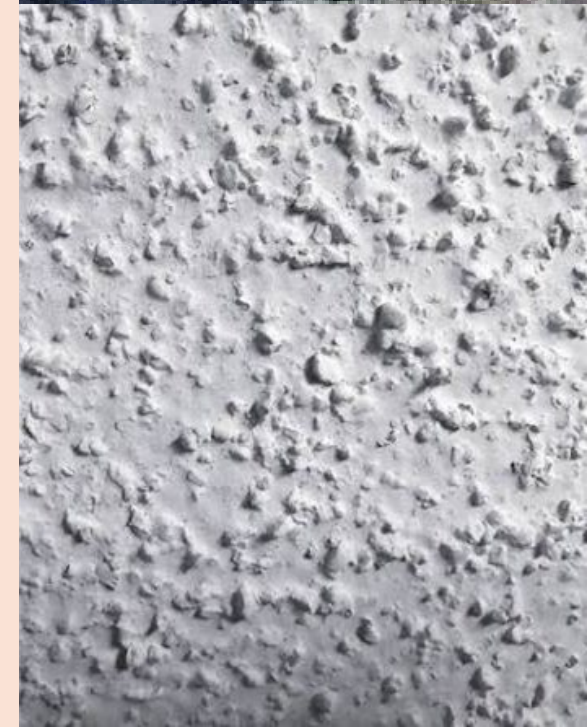


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Asbestos Containing Materials

- Flooring and mastic
- Roofing materials
- Vermiculite
- Paints may contain asbestos
- Plaster and wall systems
- Transite siding and similar materials
- Window caulk, glazing compound, wiring and similar materials
- Pipe insulation



Manufacturer	Brand	Year
United States Gypsum	Acoustical	1920-1975
National Gypsum	Gold Bond	1935-1975
Georgia Pacific	Acoustical, Patching	1950-1977
Synkoloid	Synko	1950-1976

Asbestos -Contaminated Plaster Wall Brands

Other manufacturers of asbestos-contaminated wall materials that you should be aware of are:

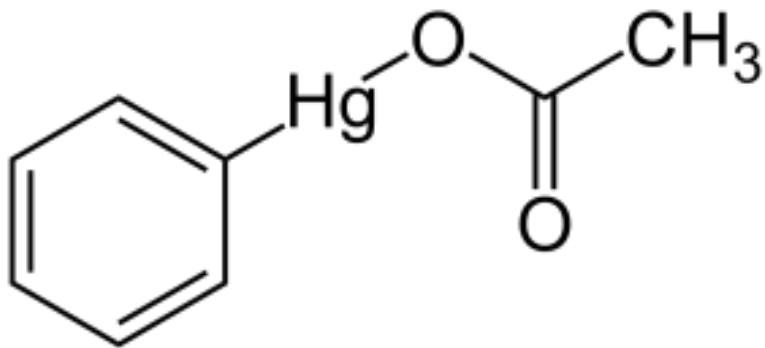
- Bondex International
- Bestwall Gypsum
- Certainteed
- Flintkote
- Hamilton Materials
- Kaiser Gypsum
- Keene
- Kelly-Moore Paints
- W.R. Grace

Lead

- Lead-based coatings are common in older buildings. In addition to paints and varnishes, lead-containing building materials can include window glazing putty; batteries for lighting, exit signs, and security systems; solders and pipes; mortar; acoustic materials; flashing; plastic coloring (wiring and blinds); and ceramic glazes.
- Common renovation activities like sanding, cutting, and demolition can disturb lead-based paint and create hazardous lead dust and chips which can be harmful.
- Disposal of lead-based materials is regulated by EPA.

Mercury

- Mercury is used in many types of equipment and devices including batteries (smoke detectors, emergency lighting systems, elevator control panels, etc.); lighting (fluorescent and high intensity discharge lamps and “silent” wall switches); heating, ventilating, and air conditioning (HVAC) systems (thermostats, fire stats, manometers, thermometers); and switches (sump pumps, pneumatic controls).
- The EPA regulates mercury as a hazardous waste during removal, abatement and mitigation procedures.



Mercury in Gym Floors

- Poured polyurethane gym floors installed from the 1960s to the early 2000s may contain phenyl mercuric acetate (PMA), a catalyst that can release toxic mercury vapor as the floor ages and deteriorates.
- These floors are commonly found in school gymnasiums, cafeterias, and locker rooms.



PCBs

- PCBs are mixtures of synthetic organic chemicals that are non-flammable, chemically stable and have high boiling points and good chemical insulating properties. They were used in hundreds of industrial and commercial applications prior to 1979.
- PCBs may be present in older building materials, can be managed in place and monitored until disturbed.
- PCBs are managed during removal, abatement and mitigation procedures.
- The EPA provides guidelines for construction and renovation pre-planning, testing and mitigation.

Toxic substances control act (TSCA)



Polychlorinated Biphenyls (PCBs) are regulated at the federal level under TSCA Title I “the New and Existing Chemicals Program”



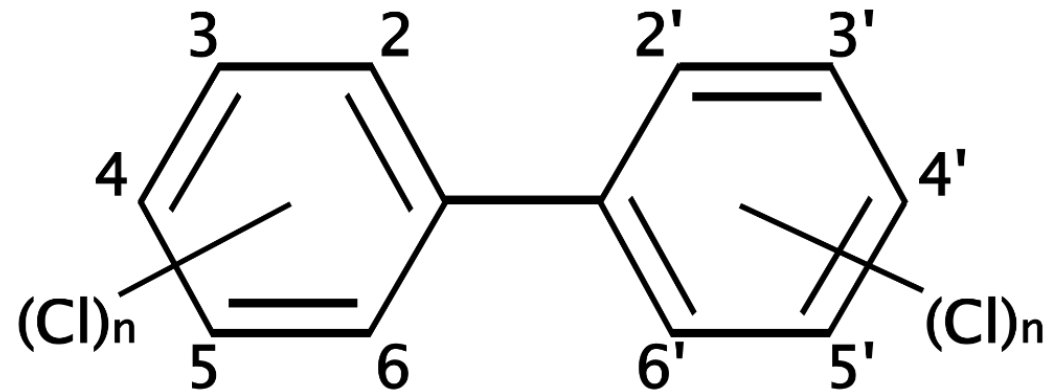
There are over 200 different PCBs



Aroclors are a trade name for PCB mixtures produced from approximately 1930 to 1979



PCBs are probable human carcinogens (liver and biliary tract)



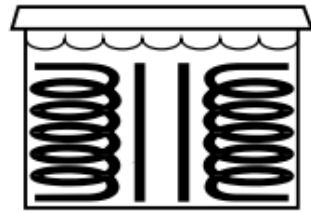
Federal and State Regulatory Requirements and Guidelines

- OSHA has set airborne Permissible Exposure Limits (PELs) for some components of PCBs:
 - Aroclor 1242 (CAS #53469-21-9) - 1 milligram per cubic meter (mg/m³) of air
 - Aroclor 1254 (CAS #11097-69-1) - 0.5 mg/m³ of air.

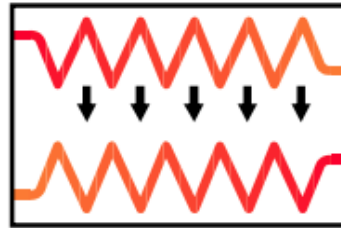
State of North Carolina Regulations

- §14-284.2 - It is unlawful to deposit, place, dump, discharge, spill, release, burn, incinerate or otherwise dispose of PCBs into the atmosphere, in the waters or on land, except where such disposal is conducted pursuant to federal or State law, regulation or permit.
- §130a-294 - Details some requirements of polychlorinated biphenyl disposal facilities.
- §143-215.84 and 143-215.85 - If discharge of mineral oil from electrical equipment occurs and the equipment contains PCBs ≥50 ppm and is less than 100' from surface water, certain clean up procedures and notifications must occur.

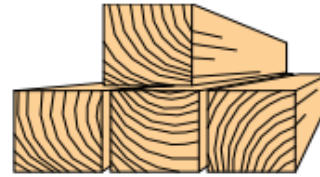
Historical uses of PCBs



Dielectric fluid



Heat transfer fluid



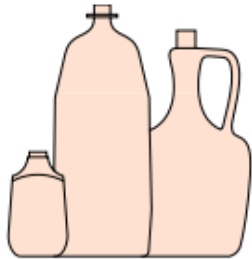
Construction materials (ex. caulk, sealants, tiles, etc.)



Fluorescent light ballasts



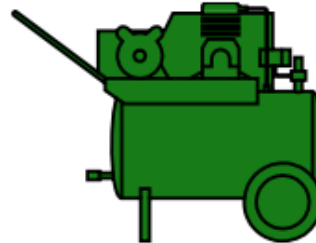
Lubricants



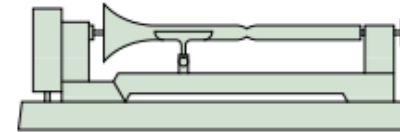
Plasticizer



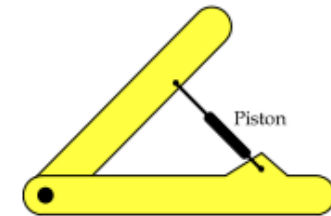
Gaskets & Damping felt



Vacuum pump fluid



Cutting oils



Hydraulic fluid

Historical uses of PCBs page 2



Adhesives



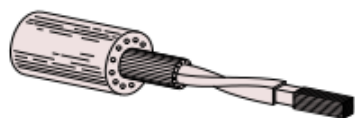
Carbonless copy paper



Microscopy
(mounting media & immersion oil)



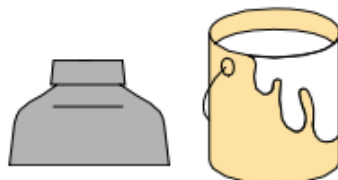
De-dusting Agents



Electric cable insulation



Fuel tank coatings



Inks and paints



Pesticide extenders



Casting Wax

PCB Building Materials

https://www.epa.gov/sites/default/files/2021-05/documents/final_pcb_buildings_fact_sheet_05-10-2021_to_upload.pdf

Listed below are potential types of manufactured PCB products that may be present in buildings or on structures:

- Paint, varnishes, and lacquers
- Non-conducting materials in electrical cables (e.g., plastic and rubber)
- Rubber and felt gaskets
- Coal-tar enamel coatings (e.g., pipe coating) and rust inhibitor coatings
- Insulation materials (e.g., fiberglass, felt, foam, and cork)
- Adhesives and tapes
- Caulk, grout, and joint material (e.g., putty, silicon, and bitumen)
- Pipe hangers
- Plastic applications, including vinyl and PVC
- Galbestos siding
- Mastics
- Acoustic ceiling and floor tiles
- Asphalt roofing and tar paper
- Synthetic resins and floor varnish
- Sprayed-on fireproofing

PCBS IN BUILDING MATERIALS DIAGRAM ON EPA.GOV



1950 to 1979

EPA believes that there was potentially widespread use of PCB-containing building materials in schools and other buildings built or renovated between about 1950 and 1979.



Recommended Actions

- Remove all PCB-containing Fluorescent Light Ballasts and any PCB-stained fixtures
- Implement best management practices: proper ventilation, cleaning, and hygiene.



Renovation and Repair

Remove other PCB sources (e.g., PCB-containing caulk) during planned renovation and repairs.

Management and Disposal

Regulations: The Toxic Substances Control Act (TSCA) (40 CFR 761) regulates PCB waste, with concentrations over 50 ppm requiring specific handling and disposal.

Removal: The EPA recommends removing PCBs from schools and public buildings, especially during renovations.

Testing: Screening is crucial before demolishing or renovating buildings constructed before 1979.

PCB Bulk Product Waste Reinterpretation (epa.gov)

If PCB contamination is left behind:

- EPA workplan must be submitted and approved.
- A maintenance plan and deed notice will be required

