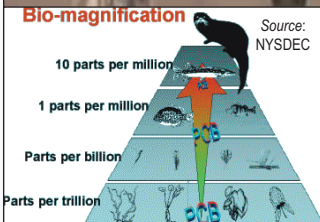
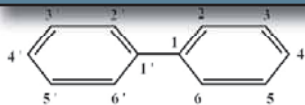


What are PCBs?



Polychlorinated biphenyls (PCBs)

are a class of man-made compounds that were manufactured and used extensively in electrical equipment such as transformers and capacitors, paints, printing inks, paper, pesticides, hydraulic fluids, lubricants, synthetic rubber, plasticizers, floor tile, brake linings, adhesives, carbon copy paper, fluorescent light ballasts, and asphalt, to name a few. PCBs are mixtures of up to 209 individual chlorinated compounds (known as congeners). As the percentage of chlorine increases, the PCB congener becomes thicker and heavier. These mixtures tend to be chemically stable and non-flammable, with high boiling points and electrical insulating properties.

There are no known natural sources of PCBs, which are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as vapor or in the air; they have no known smell or taste. Additionally, PCBs are insoluble in water, have high tolerances for heat (their boiling point is 275° - 375° Centigrade), and have no flash point.

The same properties that made PCBs stable in industrial applications allow them to persist in the environment. Concern for this and over their toxicity led Congress in 1976 to enact Section 6(e) of the Toxic Substances Control Act (TSCA), which included, among other provisions, prohibitions on the manufacture, processing, and commercial distribution of PCBs in the United States. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to the passage of TSCA. PCBs were manufactured and sold under a variety of trade names. For a complete list of trade names, see the EPA PCB ID web site at www.epa.gov/toxteam/pcb.id.

Sources of Exposure

PCB residues have been observed in plant and animal tissues in all parts of the world.

PCB residues have also been found in human adipose tissue and breast milk. Because PCBs are not naturally occurring substances, their dissemination is the result of human activity and releases to the environment.

Routes of Entry

According to the USEPA, likely routes of entry for the general population are ingestion by food and water. As PCBs are hydrophobic, they accumulate in sediment and bioaccumulate in the food chain. Contaminated fish tissue is a persistent source of PCBs in the human diet. Inhalation and skin contact are likely to be significant routes of entry in occupational exposure.

Health Effects

PCBs have been demonstrated to cause cancer and other serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. Limited studies in humans provide supportive evidence for potential carcinogenic and non-carcinogenic effects of PCBs. The different health effects of PCBs may be interrelated, as alterations in one system may have significant implications for the other systems of the body.

For More Information

The Agency for Toxic Substances and Disease Registry's ToxFAQs™ for PCBs is an excellent source for additional information and can be found at www.atsdr.cdc.gov/tfacts17.html. USEPA also hosts the PCB page at www.epa.gov/pcb. Both of these sites were also used as sources for this publication.



Delaware River Basin Commission
DELAWARE · NEW JERSEY
PENNSYLVANIA · NEW YORK
UNITED STATES OF AMERICA

WWW.DRBC.NET
P.O. BOX 7360
WEST TRENTON, N.J. 08628
(609) 883-9500