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PCB is the abbreviation for 'Polychlorinated biphenyls'. These are part of the aromatic hydrocarbons family. They contain two benzene nuclei (benzene is the 'base' structure for aromatics) and at least two chlorine atoms. These chemicals do not appear in nature and have been synthetically designed.

What are PCBs used for?

PCBs have been very popular in the 1960's as transformer oils, because these clear liquids are not chemically reactive, good electrical insulators and relatively cheap to produce. Because of the high toxicity and ecological damage, PCBs were banned in most uses by an international agreement in 1986. Now, they can only be used in particular electrical and heating equipment.

Referring to PCBs often means a blend of PCB and other components, and there are many trade names, like Askarel, Clophen, Pyralene, Turbinol.

How can PCBs affect the health?

If repeatedly exposed to PCBs, they gradually build up in the body. They can cause a skin condition called 'chloracne'. High exposures can damage the nervous system, causing headache, numbness, weakness and tingling in arms and legs, and can lead to death.

PCBs are known as probable human carcinogens; there is evidence that they cause skin cancer, and they affect the reproductive system of adults. The main danger of PCBs is via skin absorption, because they pass very easily through the skin barrier.

What gloves can be recommended for use with PCBs?

There is no material completely impervious to PCBs.

Ansell recommends Solvex® 37-695, 37-900, 37-186 or AlphaTec® 58-435, 58-530, 58-535 nitrile rubber gloves. Such gloves were tested in our US R&D department with a typical PCB-blend and a breakthrough time of > 8 hours was found.

Several sources state neoprene gloves as protection against PCBs, and breakthrough times of > 8 hours versus pure PBCs were claimed. However, when tested against a PCB-blend, the breakthrough found was about 2 hours.

As a conclusion, both neoprene and nitrile rubber might be used, but nitrile rubber is better.

Normally, users should dispose of the gloves after each day. PCB-contaminated gloves are very difficult to be decontaminated and re-using them holds the risk of contaminating every object touched.