

PERSISTENT ORGANIC POLLUTANTS (POPs)

By: Dr. Mahmood A. Khwaja

Persistent organic pollutants, more commonly known as POPs are chemical compounds or mixture that include industrial chemicals, pesticides and some industrial wastes. These are named "Persistent" because these do not degrade in the environment by physical, chemical or biological processes. Out of many POPs twelve are regarded as most dangerous to human health and environment and are called "Dirty Dozen." Among these twelve compounds eight are pesticides DDT, aldrin, dieldrin, endrin, chlordane, heptachlor, mirex and toxaphene, two industrial chemicals PCB (polychlorinated biphenyls) and HCB (hexachlorobenzene) and two industrial waste products dioxins and furans.

Some common properties which make POPs group of chemicals very dangerous are their persistent nature in the environment. POPs released in the environment can travel through water and air to regions (such as Arctic) far distant from their original sources. POPs are semi-volatile and do not readily dissolve in water and because of which concentrate in plants, animals and also in humans. Even in extremely small amounts POPs can injure human health and health of other organisms.

Wildlife and humans can come in contact with POPs through breathing contaminated air, by eating contaminated foods or by drinking or washing in contaminated water. Fetus and unborn babies in the womb are dangerously affected through absorption of these accumulated chemicals in the fats of their parent bodies. Traces of POPs contaminations have been found to be present in the food web, in animal products – meat, fish and milk in particular, with significant hazard to predators who consume these foods, such as dolphins, polar bears, herring gulls and people.

POPs can injure human health and ecosystem thousands of kilometers from their sources and even greater injury in and near source areas. POPs are harmful to stomach, intestines, liver and kidneys and can effect nervous system and cause reproductive and development defects. Some POPs are known animal carcinogens and possible human carcinogens causing cancers and tumors. Women, children and infants are especially vulnerable to certain effects of POPs.

The present POPs most alarming situation demands immediate and strong actions. The solution to the problem is "POPs TOTAL ELIMINATION."

This must be achieved through the substitution of POPs (and or the processes materials which generate them) with non-hazardous alternatives.

A number of countries have banned the production, use and trade of some of the POPs. Intergovernmental negotiations among 121 countries are also in progress for the formulation of an international legally binding treaty for an action plan to phase out the "Dirty Dozen." The treaty called "Stockholm Convention on Persistent Organic Pollutants" has now been ratified by 59 countries and enter into force on May 17, 2001.

Pakistan signed the convention on in December 2001 but has not ratified it so far.