GREEN PEACE

Asia POPs Alert

What are POPs?

Persistent Organic Pollutants (POPs) are a class of mainly synthetic toxic chemical substances that cause severe and long-term effects on wildlife, ecosystems and human health.

The general defining characteristics of POPs include:

Persistence:

They are persistent in the environment; i.e. they resist breakdown by natural processes for long periods of time.

Lipophilicity:

They are soluble in fatty material including animal fat.

Bioaccumulation and Biomagnification potential:

Because they are fat-soluble and resist breakdown, these chemicals tend to get stored in the fatty tissues of animals and build up (bioaccumulate) as more of the chemical is ingested over the life time of the animal. The levels of some of these chemicals increase (biomagnify) as one animal eats another, so that the highest levels are found in animals, including humans, at the top of food chains.

Long-range transportation:

Once released into the environment, many POPs become airborne and may be transported for thousands of kilometers in the atmosphere before condensing and falling back to the earth's surface. POPs generally are semi-volatile- they evaporate, but relatively slowly. The colder the climate, the less POPs tend to evaporate, resulting in their migration to regions such as the Arctic, thousands of kilometers away from their original sources.

gather for all beings

Toxicity:

POPs have the potential to harm human and animal health even at very low concentrations. A wide array of effects have been documented including endocrine disruption of hormone systems), neurotoxicity, immunotoxicity, reproductive disorders and cancer.

POPs include some naturally occurring substances such as polycyclic aromatic hydrocarbons (PAHs) but whose inputs to the biosphere have dramatically increased, as a result of human activities including oil and gas extraction, the combustion of fuel (including vehicles) and from the steel and nonferrous metal industries.

However, the group of POPs that have attracted the greatest attention are synthetic organohalogens (i.e. carbon-based chemicals also containing the halogens, chlorine, bromine, fluorine or iodine). Of these, the majority are organochlorines.

It is estimated that a staggering 11,000 organochlorines are now in use around the world. They include pesticides such as DDT, Chlordane, Heptachlor, Aldrin, Dieldrin, Endrin, Toxaphene, and Mirex, solvents such as perchlorethylene; and chemicals with multiple uses such as Poly Chlorinated Biphenyls (PCBs). Also included are organochlorine by-products such as hexachlorobenzene, dioxins and furans.

Of the above compounds, the United Nations Environment Programme has shortlisted twelve chemicals (all barring perchlorethylene) for global action.

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