



PBDES (POLYBROMINATED DIPHENYL ETHERS)

ENVIRONMENTAL HEALTH – CONTAMINANTS FACT SHEETS

WHAT DO WE KNOW ABOUT PBDES?

PBDEs are a group of persistent organic pollutants (POPs). They are made by humans and do not occur naturally in the environment. PBDEs are used as fire retardants and are found in many different materials.

PBDEs are not manufactured in Canada; however they are imported in a variety of products, such as computer housings, household appliances, furniture, automotive/ aircraft seating and interiors, and a variety of electrical and electronic components.

PBDEs are released into the environment during manufacturing and processing, throughout the service life of products that contain PBDEs and when these products are disposed of.

POPs (such as PBDEs) can build up in animal tissues over time through a process called bioaccumulation (see *Contaminants Overview fact sheet* –

<http://www.hss.gov.nt.ca>). This means that older animals tend to have higher levels of POPs than younger animals. POPs tend to be found at higher levels in animals that eat other animals and in smaller amounts in animals that eat plants. This is due to a process called biomagnification (see *Contaminants Overview fact sheet* – <http://www.hss.gov.nt.ca>). Marine mammals tend to have the highest levels of POPs.

POPs do not dissolve very well in water. When POPs enter water, they will stick to sediments instead. This means that water contains very low levels of POPs and we do not need to be concerned about POPs in the water.

Beluga whales near Hendrickson Island and ringed seals near Sachs Harbour have been monitored for PBDEs and several other POPs. Levels of PBDEs have been increasing over the years.

HOW DO PBDES AFFECT HUMAN HEALTH?

If a person is exposed to POPs, many factors will determine whether any harmful health effects will occur and what the type and severity of those health effects will be. These factors include the dose (how much), the duration (how long), the route or pathway by which you are exposed (breathing, eating, drinking, or skin contact), the other chemicals to which you are exposed, and your individual characteristics such as age, gender, nutritional status, family traits, life-style, and state of health.

There is limited human data on the health effects of PBDE exposure. According to animal studies, the toxicity and ability to build up in wildlife depends on the type of PBDE.

Most of the research is done on animals for only a few PBDE types, and we don't know if humans are affected in the same way that animals are affected. Preliminary evidence suggests that high concentrations of certain PBDEs may affect the brain and the immune system in animals.

Even though there is little information on the health effects of PBDE exposure, it is still of concern to humans because some types of PBDEs can build up in the fatty tissues of the body and in breast milk.



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ARE TRADITIONAL FOODS SAFE TO EAT?

Traditional foods provide many essential nutrients that can lower the risk of chronic diseases. Marine mammals tend to have the highest levels of POPs, particularly in the fatty tissues. However, most people do not need to be concerned

about contaminated-related effects from traditional food consumption. Generally, the benefits of eating traditional foods outweigh the risks from contaminant exposure.