

Side event on Low Persistent Organic Pollutants ('POPs') Content Limits at Tenth Meeting of the Conference of the Parties to the Basel Convention

Sweden arranged a side event at COP 10 of the Basel Convention about the levels of polychlorinated dioxins and dibenzofurans (PCDD/Fs) in waste and the "Low POP Content Limits". The event was based on two new reports published by the Swedish EPA: "[Low POP Content Limit of PCDD/F in waste](#)" (#6418) and "[Recycling and disposal of electronic waste. Health hazards and environmental impacts](#)" (#6417).

The reports were introduced in a presentation by Niklas Johansson, Swedish EPA. Alan Watson from Public Interest Consultants then made a presentation reviewing the policy context for Low POPs Limits and then acted as moderator for the subsequent discussion.

Main Messages:

- The evidence indicates that alimentary dioxin exposure of the general population is of the same order as the Tolerable Daily Intake. Consequently, the window of safety for incremental exposure via other routes is narrow or non-existent.
- Dioxins in contaminated sites e.g. landfills can contribute to human exposure via direct pathways and indirectly via food.
- These circumstances need to be further considered
 - when setting limits for dioxins in waste
 - when determining environmentally sound waste management strategies and techniques

Summary of the presentation:

The formation/production and release of a number persistent organic pollutants are regulated by the Stockholm Convention, which aims to reduce with the aim of eliminating flows of these substances in the environment. Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/Fs), commonly known as dioxins are listed by the Stockholm Convention as POPs because of their environmental behaviour and toxicology.

Dioxins are not intentionally produced but formed unintentionally in various industrial high-temperature processes including the incineration of waste, some chemical production processes and the metals industry. The incineration processes give rise to large quantities of ash, usually separated into 'fly ash' (or air pollution control residues) and bottom ash. Generally, the bottom ash will contain lower amounts of dioxins than the fly ash. The levels of dioxins in fly ash depends on the fuel, incineration process, cooling speed and the efficiency of the filters used.

The threshold above which dioxin contaminated waste must normally be destroyed or irreversibly transformed – commonly referred to as the ‘low POPs Content’ Level - has provisionally been set by the Basel convention at $15 \mu\text{g TEQ kg}^{-1}$ for PCDD/F in waste. The same level has been adopted by EU (BIPRO, 2005). The corresponding level for total PCBs is 50 mg kg^{-1} (50 ppm).

The level $15 \mu\text{g TEQ kg}^{-1}$ can be compared to the often used Tolerable Daily Intake of dioxins at 2 pg TEQ/kg bw . With a bodyweight of 70 kg the TDI would be 140 pg TEQ . Ash containing $15 \mu\text{g TEQ kg}^{-1}$ would contain 140 pg in just 10 mg. So human intake (direct and/or indirect) of this small quantity of ash alone would be enough to reach the TDI. We should however note that the current human exposure (in Europe) to dioxins via food is close to the TDI and the TDI is estimated to be exceeded by at least 10% of the population.

Considering these facts, it is doubtful if the continued production and dumping of huge amounts of ash and other waste products containing relatively high concentrations of dioxins could be considered as a sustainable and the current low POPs content cannot be seen as protective of human health.



Low POP Content Limit OF PCDD/F in Waste



Recycling and disposal of electronic waste

