

# POPs-International Action To Address Dioxins And Furans

## The UN/ECE Protocol on Persistent Organic Pollutants: Provisions and Management Options with Special Reference to Dioxins and Furans

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### Introduction

The 1998 UN/ECE Protocol on Persistent Organic Pollutants (POPs) under the 1979 Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/60) was adopted on 24 June 1998 and subsequently signed by thirty-five governments in Europe and North America and the European Community. It will enter into force after sixteen ratifications. The objective of the Protocol is to control, reduce or eliminate discharges, emissions and losses of POPs. The Protocol contains provisions for elimination, restrictions on use and, in the case of dioxins and furans, reduction of total annual national emissions. It is structured with basic obligations and other obligations contained in the main text of the agreement and a number of annexes on the specific requirements. The structure allows for amendments to be made without a need to revise the text itself.

### Provisions and management options

The ECE Protocol on Persistent Organic Pollutants focuses on 16 substances

- **Pesticides:** Aldrin, Chlordane, Chlordecone, DDT, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene (HCB), Mirex, Toxaphene, Hexachlorocyclohexane (HCH) (including Lindane);
- **Industrial chemicals:** Hexabromobiphenyl, Polychlorinated biphenyls (PCBs);
- **By-products or contaminants:** Dioxins, Furans, Polycyclic aromatic hydrocarbons (PAHs).

The Protocol bans the production and use of some products: Aldrin, Chlordane, Chlordecone, Dieldrin, Endrin, Hexabromobiphenyl, Mirex and Toxaphene. DDT, Heptachlor, Hexachlorobenzene and PCBs are scheduled for elimination at a later stage.

The Protocol severely restricts the use of DDT, HCH (including Lindane) and PCBs. Limited uses for which there are no adequate substitutes, can be exempted. DDT will be allowed

ORGANOHALOGEN COMPOUNDS 461

Vol. 43 (1999)

# POPs-International Action To Address Dioxins And Furans

for public health emergencies. Emission reductions are prescribed for Dioxins, Furans, PAHs, and HCBs to below their levels in 1990 (or an alternative year between 1985 and 1995). For the purpose of the Protocol the following definition is used for dioxins and furans: Dioxins and furans (PCDD/F): Polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) are tricyclic, aromatic compounds formed by two benzene rings which are connected by two oxygen atoms in PCDD and one oxygen atom in PCDF and the hydrogen atoms of which may be replaced by up to eight chlorine atoms. Best available techniques are specified in order to cut emissions of these POPs.

## **Measures regarding major stationary sources include:**

- a) Replacement of feed materials which are POPs or where there is a direct link between the materials and POP emissions from the source;
- (b) Best environmental practices such as good housekeeping, preventive maintenance programmes, or process changes such as closed systems (for instance in cokeries or use of inert electrodes for electrolysis);
- (c) Modification of process design to ensure complete combustion, thus preventing the formation of persistent organic pollutants, through the control of parameters such as incineration temperature or residence time;
- (d) Methods for flue-gas cleaning such as thermal or catalytic incineration or oxidation, dust precipitation, adsorption;
- (e) Treatment of residuals, wastes and sewage sludge by, for example, thermal treatment or rendering them inert.

## **Features**

The Protocol contains a number of characteristic features, e.g.:

- The scientific underpinning of risk and associated criteria for selection of POPs based on sound science.
  - Structure of agreement with main text and annexes.
  - Reporting and data collection provision.
  - Reference to atmospheric transport modelling.
  - Implementation and compliance monitoring requirements.
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- Application of the precautionary principle.
  - Flexible management options.
  - Cost-effective, practical and realistic measures to achieve the goals.
  - Obligations are based on existing information regarding e.g. inventories, techniques and

# POPs-International Action To Address Dioxins And Furans

- expenditures.
- The agreement is designed to stand the test of time.

## **Conclusion**

The ECE Protocol on POPs is an example of an intergovernmental agreement, which as appropriate, provides input for the envisaged global treaty. While the scope of the Protocol is regional and geared towards air pollution it has been prepared, taking into account the global nature of the problem, with the aim of protecting human health from deleterious effects of POPs in whatever medium they occur, following atmospheric transport. The Protocol is an important contribution to curbing the global fluxes of POPs, and the institutional arrangements set up under the Convention on Long-range Transboundary Air Pollution provide a machinery for refinement and long-term monitoring and follow-up of the agreement, including provisions for adding new substances to the Protocol.

## **Reference**

Protocol to the 1979 Convention on Long-range Transboundary Air Pollution on Persistent Organic Pollutants and Executive Body decision 1998/2 on Information to be Submitted and the Procedure for Adding Substances to Annexes I, II or III to the Protocol on Persistent Organic Pollutants (ECE/EB.AIR/60).