

# SEPA guidance on Persistent Organic Pollutants

## 1. Introduction

Worldwide there is concern at the continuing release of persistent organic pollutants (POPs) into the environment. These chemical substances are transported across international boundaries far from their sources and they persist in the environment, bio-accumulate through the food web, and pose a risk to human health and the environment.

International action has therefore been taken to protect the environment from POPs. This action has taken the form of two international agreements:

- The Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants (signed on 24 June 1998) (the 'Protocol), and
- The Stockholm Convention on Persistent Organic Pollutants (entered on 22 May 2001) (the 'Convention).

Regulation (EC) No 850/2004 of the European Parliament and the Council of 29 April 2004 on persistent organic pollutants<sup>1</sup> (referred to in this document as 'the Regulation') implements both of these agreements in the European Union. The Regulation's objective is to protect human health and the environment from POPs. It does this by: prohibiting, phasing out as soon as possible, or restricting the production, placing on the market and use of substances subject to the Protocol or the Convention (i.e. POPs); minimising, with a view to eliminating where feasible as soon as possible, releases of such substances; and establishing provisions regarding waste consisting of, containing or contaminated by these substances<sup>2</sup>. Annexes I to IV to the Regulation list the substances contained in the Protocol and the Convention, and so which are subject to the controls of the Regulation; unless specified otherwise such substances are described simply as 'POPs'. An amendment to the Regulation was made by the European Parliament through Council Regulation EC 172/2007, which replaced Annex 5 of the Regulation on 15 March 2007. Further amendments to the detail of annexes to the Regulation are likely in future.

The Regulation was implemented in the UK by The Persistent Organic Pollutants Regulations 2007<sup>3</sup> (the 'UK Regulations'). The UK Regulations designate SEPA as the competent authority in Scotland for the purposes of the Regulation and detail the fees that SEPA may charge for applications. The UK Regulations set out the offences for not complying with the Regulation, penalties attached to these offences and the appeals procedure. The UK Regulations make SEPA the competent authority for Scotland.

## 2. Overview of the POPs Regulation

The principal requirements of the Regulation are:

- 2.1 The UK is required to prepare a national plan (National Implementation Plan or NIP) for the implementation of its obligations under the convention. DEFRA has prepared the UK's NIP<sup>4</sup>.

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<sup>1</sup> Available at [http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l\\_229/l\\_22920040629en00050022.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l_229/l_22920040629en00050022.pdf)

<sup>2</sup> Article 1 of the Regulation

<sup>3</sup> SI 3106. Available via: [http://www.opsi.gov.uk/si/si2007/uksi\\_20073106\\_en\\_1](http://www.opsi.gov.uk/si/si2007/uksi_20073106_en_1)

<sup>4</sup> Available via: <http://www.defra.gov.uk/environment/chemicals/pdf/pop-nationalplan.pdf>

2.2 There is a complete ban on the marketing and use of certain chemicals, principally some pesticides but also including polychlorinated biphenyls (PCBs) and hexabromobiphenyl.

In general the pesticides that are banned from being marketed or used have not been sold in the UK for some time and the impact of this ban is therefore likely to be minimal. One possible exception to this is hexachlorocyclohexane (HCH or lindane). Use of lindane in professional timber treatment was permitted to continue until 1st September 2006, and use as an intermediate in chemical manufacture and for some public health and veterinary applications was permitted until 31 December 2007. Trace amounts of lindane are also present in imported agricultural goods such as seed and fleeces.

- There is a requirement to destroy the POP content of waste, if the POP level of the waste is above a threshold value.
- There are additional controls on waste that contains POPs.
- When constructing new facilities, or significantly modifying existing facilities, which release dioxins, hexachlorobenzene, PCB or polycyclic aromatic hydrocarbons (PAHs), there is a requirement to give priority consideration to alternative processes, techniques or practices that have similar usefulness which avoid the formation and release of these chemicals. This applies to facilities regulated under Pollution Prevention and Control (Scotland) Regulations 2000 (as amended) (PPC Regulations).

### **3. Who is affected by the Regulation?**

The Regulation impacts on:

- Any person producing, placing on the market or using any substance listed in its Annex I or II<sup>5</sup>
- Any holder of a stockpile of any substance listed in its Annex I or II
- Any person applying for a permit, or a significant modification to a permit under the PPC Regulations, using processes that release chemicals listed in its Annex III; and
- Any person producing or receiving a waste containing any of the substances specified in its Annex IV above the Annex IV threshold.

### **4. The banning of Production, Placing on the Market and Use of Some Chemicals**

The following substances may not be produced or placed on the market or used, whether on their own, in preparations or as constituents of articles:

- The pesticides aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene (also used as an industrial chemical and produced as a by-product from some industrial processes), chlordecone, mirex, toxaphene, DDT<sup>6</sup> (1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane), hexachlorocyclohexane (HCH, including lindane);
- PCBs and
- hexabromobiphenyl (used as a brominated retardant).

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<sup>5</sup> Annex I substances are the eleven pesticides aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene, chlordecone, mirex, toxaphene, DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane), hexachlorocyclohexane (HCH, including lindane); PCBs and hexabromobiphenyl. No substances are listed in Annex II

<sup>6</sup> Use of DDT in a closed system as a chemical intermediate is permitted until 1 January 2014.

The restrictions do not apply to substances used on a laboratory scale research, as a reference standard, or occurring as an unintentional trace contamination in substances, preparations or articles.

## **5. Controls on Stockpiles of POP Chemicals**

Article 5 of the EU Regulation imposes conditions on the holders of any stockpiles of the substances listed in Annex I or II. If the stockpile consists of substances for which no use is permitted (namely all substances except DDT<sup>7</sup>) then the holder of the stockpile must manage it as waste and in accordance with Article 7 (see section 7).

If the stockpile is greater than 50kg and consists of, or contains, any substance listed in Annex I or II for which use is permitted<sup>8</sup> then the holder is required to notify SEPA with information as to the nature and size of the stockpile. This information is to be supplied within 12 months of the entry into force of the Regulation, or of any amendments to Annex II or I, and annually thereafter.

The holder of the stockpile is also required to manage the stockpile in a safe, efficient and environmentally sound manner.

The Regulation only permits continued use of DDT as a chemical intermediate for dicofol production. DDT is not thought to be used for these purposes in Scotland. Notification is only required for substances where use is still permitted (i.e. DDT). Therefore the expected number of stockpile notifications in Scotland is therefore expected to be zero.

## **6. Requirements to Reduce, Minimise and Eliminate Releases**

When considering an application for a permit, or a significant modification to a permit, under the PPC Regulations for activities using processes that release chemicals listed in Annex III<sup>9</sup> SEPA must give priority consideration to alternative processes, techniques or practices that have similar usefulness but which avoid the formation and release of these substances. In such circumstances SEPA should be consulted at the earliest opportunity.

## **7. Destruction of the POP Content of Waste**

All producers and holders of wastes are required to take all reasonable efforts to avoid, where feasible, contamination of this waste with substances listed in Annex IV<sup>10</sup>.

There is no definition in the Regulation of threshold levels for “contamination”. Practically it could be assumed that contamination would result from the addition of any waste stream containing one or more of the substances listed in Annex IV, at a concentration above the threshold in Annex IV, to any waste stream where the concentration of the same substance or substances is below the threshold listed in Annex IV.

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<sup>7</sup> Only for use as a chemical intermediate for dicofol production until 1 January 2014

<sup>8</sup> DDT for certain applications only

<sup>9</sup> Annex III substances are Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF), Hexachlorobenzene (HCB), Polychlorinated biphenyls (PCB) and Polycyclic aromatic hydrocarbons (PAHs)

<sup>10</sup> Annex IV substances are Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Mirex, Toxaphene, Polychlorinated Biphenyls (PCBs), DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane), Chlordecone, Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF), HCH including lindane and Hexabromobiphenyl

Waste consisting of, containing or contaminated by any substance listed in Annex IV, must be disposed of or recovered, without undue delay by any of the following treatment methods set out in the Waste Framework Directive<sup>11</sup>:

- D9 Physico-chemical treatment,
- D10 Incineration on land, or
- R1 Use Principally as a fuel or other means to generate energy, excluding waste containing PCBs.

in such a way as to ensure that the POP content is destroyed or irreversibly transformed so that the remaining waste and releases do not exhibit the characteristics of POPs .

Pre-treatment operations prior to the treatment above may be performed. A substance listed in Annex IV may be isolated from the waste provided that it is subsequently disposed of by one of the methods given above. In addition, repackaging and temporary storage operations may be performed prior to such pre-treatment or prior to destruction or irreversible transformation.

Disposal or recovery operations that may lead to recovery, recycling, reclamation or re-use of Annex IV substances are banned.

There are, however, derogations from the requirement to dispose of or recover wastes in this way, as follows:

Firstly, waste which contains the POPs listed in Annex IV at a concentration below the limits in Annex IV can be disposed of or recovered in accordance with normal waste regulatory practices.

Secondly, in exceptional cases wastes listed in Annex V, part 2, containing or contaminated by any substance listed in Annex IV up to concentration limits specified in Annex V, part 2, can be otherwise dealt with in accordance with a method listed in Annex V, part 2. This means that a derogation to the requirement to destroy the POP content of any waste, where the concentration is above the limits in Annex IV exists where:

- It is an exceptional case
- The waste stream is listed in Annex V Part 2, for example waste 17 01, concrete, bricks, tiles and ceramics
- The concentration is below the limit specified in Annex V
- The method of disposal is listed in Annex V Part 2
- The provisions of the Landfill Directive<sup>12</sup> have been adhered to and it has been demonstrated that the selected operation is environmentally preferable.

The methods of disposal specified in Annex V Part 2 are permanent storage only in:

- Safe, deep, underground, hard rock formations,
- Salt mines or
- A landfill site for hazardous waste (provided that the waste is solidified or partly stabilised where technically feasible as required for classification of the waste in subchapter 19 03 of Decision 2000/532/EC)

There is a further condition that the maximum concentration limits in Annex V only apply to a landfill site for hazardous waste (i.e. special waste in Scotland). This means that provided the other derogation conditions are met, then there is no concentration limit for the disposal of

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<sup>11</sup> 2006/12/EC (as amended)

<sup>12</sup> Council Directive 1999/31/EC and Council Decision 2003/33/EC

waste to safe, deep, underground, hard rock formations, or salt mines. Currently the UK has only one such facility that could qualify under this derogation: the Minosus salt mine disposal site in North West England.

There are further criteria that must be fulfilled to satisfy the conditions for this derogation, namely that:

- The holder of the waste must demonstrate that decontamination of the waste in relation to the substances listed in Annex IV was not feasible;
- Destruction or irreversible transformation of the persistent organic pollutant content of the waste, performed in accordance with best environmental practice, or best available techniques, does not represent the environmentally preferable option; and
- The operation should be in accordance with relevant Community legislation.

It must be emphasised that the procedure for exemption is for exceptional cases and should not be used on a routine basis. Nearly all UK waste streams should not contain concentrations of POPs above the levels specified in Annex IV.

You can use the form at [www.sepa.org.uk/chemicals](http://www.sepa.org.uk/chemicals) to apply for a derogation. SEPA will also accept applications for derogations by letter. Please note that derogation applications will not be processed unless accompanied by the required fee of £2000.

## 8. Contacts for Further Information

Please contact the Central Waste Unit for further guidance:

## 9. References

Useful Internet Sites

The EU Regulation can be viewed at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:158:0007:0049:EN:PDF>

Amendment Regulation: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:055:0001:0006:EN:PDF>

The Stockholm Convention web site can be viewed at:

<http://chm.pops.int/>

The Convention on Long-range Transboundary Air Pollution web site can be viewed at:

<http://www.unece.org/env/lrtap/>

The Statutory Instrument can be viewed at;

[http://www.opsi.gov.uk/si/si2007/uksi\\_20073106\\_en\\_1](http://www.opsi.gov.uk/si/si2007/uksi_20073106_en_1)