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# EU POPs Regulation Guidance

Guidance on Regulation (EC) 850/2004 on  
Persistent Organic Pollutants

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# 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, bioaccumulate 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
- The Stockholm Convention on Persistent Organic Pollutants

Regulation (EC) No 850/2004 of the European Parliament and the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC<sup>1</sup> (referred to in this document as EU POPs Regulation, or the Regulation) implements both of these agreements for all of EU member states.

The EU Regulation was implemented in the UK by Statutory Instrument 2007 No. 3106 The Persistent Organic Pollutants Regulations 2007<sup>2</sup>. This legislation implements the requirements of the EU directive but also sets out who responsible for implementing the regulation (Environment Agency in England and Wales), the split of work between the regulatory authority and the Member State and allows for charging for applications for derogation (see section 6.5).

This document has been prepared by the Environment Agency (England and Wales) and only applies to England and Wales. The focus of this guidance is therefore on the activities that are regulated by the Environment Agency. Duties that are imposed on the Member State (for example reporting data to the commission) are not discussed in detail.

## 2 Overview of the POPs Regulation

The principal requirements of the Regulation are:

- The UK is required to prepare a national plan (National Implementation Plan or NIP) for the implementation of its obligations under the convention.
- There is a complete ban on the marketing and use of certain chemicals, principally some pesticides but also including polychlorinated biphenyls (PCBs) and hexabromobiphenyl.
- 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 Pollution Prevention and Control (PPC) (England and Wales) Regulations 2000 Part A (1) processes, i.e. those PPC processes that are regulated by the Environment Agency.

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 1<sup>st</sup> September 2006, and use as an intermediate in chemical manufacture and for some public health and veterinary applications was permitted until

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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> Click [here](#) to view a copy.

31 December 2007. Trace amounts of lindane are also present in imported agricultural goods such as seed and fleeces.

### 3 Who is affected by the Regulation?

The Regulation will impact on;

- Any person producing, placing on the market or using any substance listed in Annex I or II<sup>(3)</sup>
- Any holder of a stockpile of any substance listed in Annex I or II
- Any person applying for a new PPC Part A(1) process, or to significantly modify an existing PPC Part A(1) process, that releases any of the substances specified in Annex III
- Any person producing or receiving a waste containing any of the substances specified in Annex IV above the Annex IV threshold

### 4 Who Enforces the POP Regulation?

For England and Wales the enforcing authority for this Regulation is the Environment Agency, for Scotland the enforcing authority is the Scottish Environment Protection Agency and for Northern Ireland the enforcing authority is the Environment and Heritage Service.

### 5 When Does the POP Regulation Come Into Force?

UK legislation came into force on the 3 December 2007.

## 6 Detailed Requirements of the POPs Regulation

### 6.1 The Requirement for a National Implementation Plan (Paragraph 17)

Paragraph 17 of the Regulation imposes a duty to develop a national implementation plan, or NIP. Article 8 of the Regulation sets out in more detail some of the requirements of the NIP, such as public participation and an obligation to communicate the NIP to the EU Commission and other Member States. Defra have prepared the UK NIP.

### 6.2 The banning of Production, Placing on the Market and Use of Some Chemicals (Articles 3 and 4)

Article 3(1) prohibits the production, placing on the market and use of the substances listed in Annex I of the Regulation, whether on their own, in preparations or as constituents of articles.

The substances in Annex I are the eleven pesticides aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene (also used as an industrial chemical and produced as a by-product from some industrial processes), chlordane, mirex, toxaphene, DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane), hexachlorocyclohexane (HCH, including lindane); PCBs and hexabromobiphenyl (used as a brominated retardant).

Use of DDT in a closed system as a chemical intermediate is permitted until 1 January 2014, and some uses of HCH were permitted until 31 December 2007.

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<sup>3</sup> Annex I substances are the eleven pesticides aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene, chlordane, 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

There are similar restrictions for substances listed in Annex II (Article 3(2)). However, at present no substances are listed in Annex II.

The restrictions do not apply to substances used in laboratory scale research or as a reference standard, or occurring as an unintentional trace contamination in substances, preparations or articles (Article 4 (1)). There is a six month period of grace in respect of substances occurring as a constituent of articles produced before, or on the date of entry into force of the Regulation (Article 4(2)). This period has now expired as the Regulation came into force 20 days after publication in the Official Journal of the EU on the 29 April 2004.

## 6.2 Controls on Stockpiles of POP Chemicals (Article 5)

Article 5 imposes conditions for 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 (all substances except DDT<sup>4</sup>) then the holder of the stockpile shall manage it as waste and in accordance with Article 7 (see page 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>5</sup> then there is a requirement to notify the competent authority of the Member State<sup>6</sup> 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. There is an additional requirement for the Member State to ensure that the stockpile is managed 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 England and Wales. Notification is only required for substances where use is still permitted (i.e. DDT). Therefore the expected number of stockpile notifications in England and Wales is therefore expected to be zero.

## 6.4 Requirements to Reduce, Minimise and Eliminate Releases (Article 6)

This section of the Regulation imposes a requirement on the Member State to prepare and maintain release inventories for substances listed in Annex III<sup>(7)</sup> and to communicate the action plan resulting from the National Implementation Plan.

Member States are also required when considering proposals to construct new facilities, or significantly to modify existing facilities, using processes that release chemicals listed in Annex III<sup>(7)</sup>, (without prejudice to Council Directive 1996/61/EC) to give priority consideration to alternative processes, techniques or practices that have similar usefulness but which avoid the formation and release of substances listed in Annex III.

There is no definition of “facilities” in the Regulation. However paragraph 4(b) of Statutory Instrument 2007 No, 3106 defines how Article 6(3) should be interpreted;

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<sup>4</sup> Only for use as a chemical intermediate for dicofol production until 1 January 2014

<sup>5</sup> DDT for certain applications only

<sup>6</sup> For England and Wales this is the Environment Agency

<sup>7</sup> Annex III substances are Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF), Hexachlorobenzene (HCB), Polychlorinated biphenyls (PCB) and Polycyclic aromatic hydrocarbons (PAHs)

“Article 6(3), which must be complied with by any person considering an application for a permit or a significant modification to a permit under the Pollution Prevention and Control (England and Wales) Regulations 2000, the Pollution Prevention and Control (Scotland) Regulations 2000 or the Pollution Prevention and Control Regulations (Northern Ireland) 2003.”

As the enforcing authority in England and Wales is the Environment Agency this limits the scope of Article 6(3) to new PPC Part A(1) processes or PPC Part A (1) processes undergoing a significant change.

## 6.5 Destruction of the POP Content of Waste (Article 7)

This is the most complex section of the Regulation and is concerned with the treatment of waste that contains POPs.

Paragraph 7 (1) of this section requires that all holders of wastes shall undertake all reasonable efforts to avoid, where feasible, contamination of this waste with substances listed in Annex IV<sup>(8)</sup>. There is no definition of threshold levels as regards contamination.

For guidance purposes contamination should be regarded as the adding 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.

Paragraph 7(2) requires that waste consisting of, containing or contaminated by any substance listed in Annex IV, shall be disposed of or recovered, without undue delay and in accordance with Annex V, part 1, in such a way as to ensure that the persistent organic pollutant content is destroyed or irreversibly transformed so that the remaining waste and releases do not exhibit the characteristics of the persistent organic pollutants.

The Environment Agency will assess what constitutes “without undue delay” on a case by case basis.

This means that any waste stream containing any of the substances listed in Annex IV above the threshold in Annex IV must be treated in such a way that the POP content of the waste is destroyed. The methods by which the POP content of the waste can be destroyed are listed in Annex V Part I and are:  
Importantly there are derogations from the requirements of Article 7(2).

### **Part 1 Disposal and recovery under Article 7(2)**

The following disposal and recovery operations, as provided for in Annex IIA and IIB of Directive 75/442/EEC, are permitted for the purposes of Article 7(2) when applied in such a way as to ensure that the persistent organic pollutant content is destroyed or irreversibly transformed

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

Firstly waste which contains POPs at a concentration below the limits in Annex IV can still be disposed of or recovered in accordance with the relevant Community legislation and Article 17(2) of the POP regulation i.e. normal waste regulatory practices will apply (Paragraph 7(4) (a)).

<sup>8</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

Secondly the Member State or the Competent Authority designated by the Member State, may, in exceptional cases, allow 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, to 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 (landfill only)
- The method of disposal is listed Annex in V Part 2
- The provisions of Council Directive 1999/31/EC<sup>1</sup> and Council Decision 2003/33/EC<sup>1</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 in that footnote 5 of the Regulation, which states that the maximum concentration limits in Annex V only apply to a landfill site for hazardous waste. This means that provided the other derogation conditions are met then there is no concentration limit for the disposal of 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.

Paragraph 7 4(b) (i) requires that;

- The holder of the waste must have demonstrated to the satisfaction of the competent authority that decontamination of the waste in relation to the substances listed in Annex IV was not feasible
- That 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
- The Competent Authority must authorise the alternative operation

Paragraph 4(b) (ii) requires that the operation should be in accordance with relevant Community legislation and the conditions laid down in relevant additional measures in paragraph 6 (currently none).

Finally Paragraph 4(b) (iii) requires the Member State to inform the other Member States and the Commission of any authorisation made and the justification for it.

The EU Commission is required before 31<sup>st</sup> December 2009 to review the derogations in paragraph 4.

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.

Details of the procedure for applying for derogation (and the appeals procedure if the application is rejected) under Article 7 are specified in the Statutory Instrument 2007 3106. A fee is chargeable for each application for derogation and this is £2000<sup>9</sup>.

It is intended to place more detailed guidance on the derogation procedure on the Environment Agency web site. All applications for derogation should be made to the Chemical Restrictions Compliance Team (details available on the EA web site).

## 6.6 Implementation Plans (Article 8)

This section is concerned with actions required by Member States to implement the Regulation.

## 6.7 Monitoring (Article 9)

This section puts in place a requirement for the Commission and the Member States to provide monitoring data on the presence of dioxins, furans and PCBs in the environment.

## 6.8 Information Exchange (Article 10)

Article 10 imposes duties on the Commission and the Member States with regard to the exchange of information relevant to the reduction, minimisation, or elimination (where feasible) of the production, use and release of POPs. There are also additional requirements with regard to awareness programmes, provision of public information and training.

## 6.9 Technical Assistance (Article 11)

This imposes an obligation on the Commission and Member States to provide technical and financial assistance to developing countries to assist them in implementing the Convention.

## 6.10 Reporting (Article 12)

Article 12 imposes a requirement on the Member States to report to the Commission with data on such issues as the production of POPs, details of notified stockpiles, release inventories and information on the presence of dioxins, furans and PCBs in the environment. The Commission is also required to compile a report every three years on the application of the Regulation, including information on the use of derogations (Article 7(4)).

## 6.11 Penalties (Article 13)

This imposes a requirement on Member States to set out rules on penalties for infringements of the Regulation and to enforce these penalties. Member States are also required to notify these provisions to the Commission.

## 6.12 Amendments of Annexes (Article 14)

This imposes a requirement on the Commission to update the Regulation if changes are made to the lists of substances in the Convention or the Protocol. A procedure is also specified for amendments to Annexes I to V inclusive.

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<sup>9</sup> Until 1<sup>st</sup> April 2011, or a charging scheme under section 41 of the Environment Act 1995 to recover such costs takes effect, whichever is earlier.

Several substances are being considered for addition to the Stockholm Convention including chlordecone (pesticide), hexabromobiphenyl (flame retardant), hexachlorocyclohexanes, pentabromodiphenyl ether, short chain chlorinated paraffins and perfluorooctane sulfonate. Addition to the Convention is likely to take years and the EU may take action to amend the EU POP Regulation in advance of any changes to the Stockholm Convention.

### 6.13 Competent Authorities (Article 15)

This requires each Member State to designate a Competent Authority for the Regulation within three months of the entry into force of the Regulation. For England and Wales the Competent Authority is the Environment Agency.

### 6.14 Committee for General Matters (Article 16)

This section specified the committee that should help the Commission for all matters under the Regulation except for those relating to waste.

### 6.15 Committee for Waste Matters (Article 17)

This section specified the committee that should help the Commission for all matters under the Regulation for those matters relating to waste.

### 6.16 Amendments to Directive 79/117/EEC (Article 18)

This makes an amendment to Part B of the Annex to Directive 79/117/EEC, in that "Persistent organochlorine compounds", items 1 to 8 are deleted.

### 6.17 Entry into Force (Article 19)

The date of entry into force of the Regulation is specified as the 20<sup>th</sup> day following publication in the Official Journal of the European Union. Publication was on the 29 April 2004. This means the regulation came into effect on the 19 May 2004. As this is an EU regulation no additional legislation is required to bring the Regulation into effect in Member States.

For practical purposes in England and Wales the Regulation should be regarded as coming into effect on the 3 December 2007.

## 7 Contacts for Further Information

The Environment Agency contact for this Regulation is Richard Hawkins, Policy Advisor – Chemicals. Please telephone our National Customer Contact Centre on 08708 506 506 or send an email to [chemicalrestrictions@environment-agency](mailto:chemicalrestrictions@environment-agency).

# 8 References

## Useful Internet Sites

The EU Regulation can be viewed 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)

The Stockholm Convention web site can be viewed at:

<http://www.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)

# 9 ANNEXES TO THE REGULATION

## 9.1 ANNEX I - LIST OF SUBSTANCES SUBJECT TO PROHIBITIONS

<b>Part A Substances listed in the Convention and in the Protocol</b>			
<b>Substance</b>	<b>CAS No</b>	<b>EC No</b>	<b>Specific exemption on intermediate use or other specification</b>
Aldrin	309-00-2	206-215-8	-
Chlordane	57-74-9	200-349-0	-
Dieldrin	60-57-1	200-484-5	-
Endrin	72-20-8	200-775-7	-
Heptachlor	76-44-8	200-962-3	-
Hexachlorobenzene	118-74-1	200-273-9	-
Mirex	2385-85-5	219-196-6	-
Toxaphene	8001-35-2	232-283-3	-
Polychlorinated Biphenyls (PCB)	1336-36-3 and others	215-648-1 and others	Without prejudice to Directive 96/59/EC, articles already in use at the time of entry into force of this Regulation are allowed to be used.
DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane)	50-29-3	200-024-3	Member States may allow the existing production and use of DDT as a closed-system site limited intermediate for the production of dicofol until 1 January 2014, in accordance with Article 4(3) of this Regulation. The Commission shall review this exemption by 31.12.2008 in the light of the outcome of the evaluation in the framework of Directive 91/414/EEC.
<b>Part B Substances listed only in the Protocol</b>			
<b>Substance</b>	<b>CAS No</b>	<b>EC No</b>	<b>Specific exemption on intermediate use or other specification</b>
Chlordecone	143-50-0	205-601-3	—
Hexabromobiphenyl	36355-01-8	252-994-2	—
HCH, including lindane	608-73-1, 58-89-9	210-168-9, 200-401-2	By way of derogation, Member States may allow the following uses (a) until 1.9.2006: — Professional remedial and industrial treatment of lumber, timber and logs; — Indoor industrial and residential applications; (b) until 31.12.2007: — Technical HCH for use as an intermediate in chemical manufacturing; — Products in which at least 99% of the HCH isomer is in the gamma form (lindane) are restricted for use as public health and veterinary topical insecticide.

## 9.2 ANNEX II – LIST OF SUBSTANCES SUBJECT TO RESTRICTIONS

No substances are listed under Annex II at the time of writing this guidance

## 9.3 ANNEX III - LIST OF SUBSTANCES SUBJECT TO RELEASE REDUCTION PROVISIONS

Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)  
Hexachlorobenzene (HCB) (CAS No: 118-74-1)  
Polychlorinated biphenyls (PCB)  
Polycyclic aromatic hydrocarbons (PAHs)<sup>10</sup>

## 9.4 ANNEX IV - LIST OF SUBSTANCES SUBJECT TO WASTE MANAGEMENT PROVISIONS SET OUT IN ARTICLE 7

This is an extract from Council Regulation (EC) No 1195/2006 of 18 July 2006 amending Annex IV to Regulation (EC) No 850/2004<sup>11</sup> of the European Parliament and of the Council on persistent organic pollutants and the original text should be used as the reference material.

Substance	CAS No	EC No	Concentration limit referred to in Article 7(4)(a), ppm (parts per million)
Aldrin	309-00-2	206-215-8	50 mg/kg
Chlordane	57-74-9	200-349-0	50 mg/kg
Dieldrin	60-57-1	200-484-5	50 mg/kg
Endrin	72-20-8	200-775-7	50 mg/kg
Heptachlor	76-44-8	200-962-3	50 mg/kg
Hexachlorobenzene	118-74-1	200-273-9	50 mg/kg
Mirex	2385-85-5	219-196-6	50 mg/kg
Toxaphene	8001-35-2	232-283-3	50 mg/kg
Polychlorinated Biphenyls (PCB)	1336-36-3 and others	215-648-1 and others	50 mg/kg (*)
DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl) ethane)	50-29-3	200-024-3	50 mg/kg
Chlordecone	143-50-0	205-601-3	50 mg/kg
Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)	-	-	15 µg/kg (**)
HCH, including lindane	608-73-1, 58-89-9	210-168-9, 200-401-2	50 mg/kg
Hexabromobiphenyl	36355-01-8	252-994-2	50 mg/kg

(\*) Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

(\*\*) The limit is calculated as PCDD and PCDF according to the following toxic equivalency factors (TEFs):

PCDD	TEF
2,3,7,8-TeCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1

<sup>10</sup> For the purpose of emission inventories, the following four compound indicators shall be used: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene and indeno(1,2,3-cd)pyrene.

<sup>11</sup> Click [here](#) to view.

1,2,3,4,6,7,8-HpCDD		0.01
OCDD	0.0001	
<b>PCDF</b>		<b>TEF</b>
2,3,7,8-TeCDF		0.1
1,2,3,7,8-PeCDF		0.05
2,3,4,7,8-PeCDF		0.5
1,2,3,4,7,8-HxCDF		0.1
1,2,3,6,7,8-HxCDF		0.1
1,2,3,7,8,9-HxCDF		0.1
2,3,4,6,7,8-HxCDF		0.1
1,2,3,4,6,7,8-HpCDF		0.01
1,2,3,4,7,8,9-HpCDF		0.01
<b>PCDF</b>		<b>TEF</b>
OCDF	0.0001	

## 9.5 ANNEX V - WASTE MANAGEMENT

This is an extract from Council Regulation (EC) No 172/2007 of 16 February 2007 amending Annex V to Regulation (EC) No 850/2004<sup>12</sup> of the European Parliament and of the Council on persistent organic pollutants and the original text should be used as the reference source.

### Part 1 Disposal and recovery under Article 7(2)

The following disposal and recovery operations, as provided for in Annex IIA and IIB of Directive 75/442/EEC, are permitted for the purposes of Article 7(2) when applied in such a way as to ensure that the persistent organic pollutant content is destroyed or irreversibly transformed:

D9 Physico-chemical treatment,

D10 Incineration on land, and

R1 Use principally as a fuel or other means to generate energy, excluding waste containing PCBs.

Pre-treatment operation prior to destruction or irreversible transformation pursuant to this Part of this Annex may be performed, provided that a substance listed in Annex IV that is isolated from the waste during the pre-treatment is subsequently disposed of in accordance with this Part of this Annex. In addition, repackaging and temporary storage operations may be performed prior to such pre-treatment or prior to destruction or irreversible transformation pursuant to this part of this Annex.

### Part 2 Wastes and operations to which Article 7(4)(b) applies

The following operations are permitted for the purposes of Article 7(4)(b) in respect of the wastes specified, defined by the six-digit code as classified in Commission Decision 2000/532/EC<sup>(13)</sup>.

<sup>12</sup> Click [here](#) to view.

<sup>13</sup> Commission Decision 2000/532/EC of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (OJ L 226, 6.9.2000, p. 3). Decision as last amended by Council Decision 2001/573/EC (OJ L 203, 28.7.2001, p. 18).

## 9.6 Annex V - Wastes from Thermal Processes

Wastes as classified in Commission Decision 2000/532/EC		Maximum Concentration limits of substances listed in Annex IV	Operation
<b>10</b>	<b>WASTES FROM THERMAL PROCESSES</b>		
10 01	Wastes from power stations and other combustion plants (except 19)	Aldrin: 5 000mg/kg	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 stabilised where technically feasible as required for classification of the waste in subchapter 19 03 of Decision 2000/532/EC)  whereby the provisions of Council Directive 1999/31/EC <sup>14</sup> and Council Decision 2003/33/EC <sup>15</sup> have to be adhered to and whereby it has been demonstrated that the selected operation is environmentally preferable.
10 01 14 (****)	Bottom ash, slag and boiler dust from co-incineration containing dangerous substances	Chlordane: 5 000mg/kg Dieldrin: 5 000mg/kg	
10 01 16 (****)	Fly ash from co-incineration containing dangerous substances	Endrin: 5 000mg/kg Heptachlor: 5 000mg/kg	
10 02	Wastes from the iron and steel industry	Hexachlorobenzene: 5 000mg/kg	
10 02 07 (****)	Solid wastes from gas treatment containing dangerous substances	Mirex: 5 000mg/kg	
10 03	Wastes from aluminium thermal metallurgy	Toxaphene: 5 000mg/kg	
10 03 04 (****)	Primary production slags	Polychlorinated Biphenyls (PCB) (3): 50mg/kg	
10 03 08 (****)	Salt slags from secondary production		
10 03 09 (****)	Black drosses from secondary production	DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane): 5 000mg/kg	
10 03 19 (****)	Flue-gas dust containing dangerous substances	Chlordecone: 5 000mg/kg Polychlorinated dibenzopdioxins and dibenzofurans (PCDD/PCDF) (6) 5mg/kg	
10 03 21 (****)	Other particulates and dust (including ball-mill dust) containing dangerous substances		
10 03 29 (****)	Wastes from treatment of salt slags and black drosses containing dangerous substances	the sum of alpha-, beta- and gamma-HCH: 5 000mg/kg	
10 04	Wastes from lead thermal metallurgy	Hexabromobiphenyl: 5 000mg/kg	
10 04 01 (****)	Slags from primary and secondary production		
10 04 02 (****)	Dross and skimmings from primary and secondary production		
10 04 04 (****)	Flue-gas dust		

<sup>14</sup> Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1). Directive as last amended by Regulation (EC) No 1882/2003.

<sup>15</sup> Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste and landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC (OJ L 11, 16.1.2003, p. 27).

## 9.7 Annex V - Wastes from Thermal Processes (continued)

Wastes as classified in Commission Decision 2000/532/EC		Maximum concentration limits of substances listed in Annex IV	Operation
10 04 05 (****)	Other particulates and dust	Aldrin: 5 000mg/kg	<p>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 stabilised where technically feasible as required for classification of the waste in subchapter 19 03 of Decision 2000/532/EC)</p> <p>whereby the provisions of Council Directive 1999/31/EC<sup>16</sup> and Council Decision 2003/33/EC<sup>17</sup> have to be adhered to and whereby it has been demonstrated that the selected operation is environmentally preferable.</p>
10 04 06 (****)	Solid wastes from gas treatment	Chlordane: 5 000mg/kg	
10 05	Wastes from zinc thermal metallurgy	Dieldrin: 5 000mg/kg	
10 05 03 (****)	Flue-gas dust	Endrin: 5 000mg/kg	
10 05 05 (****)	Solid waste from gas treatment	Heptachlor: 5 000mg/kg	
10 06	Wastes from copper thermal metallurgy	Hexachlorobenzene: 5 000mg/kg	
10 06 03 (****)	Flue-gas dust	Mirex: 5 000mg/kg	
10 06 06 (****)	Solid wastes from gas treatment	Toxaphene: 5 000mg/kg	
10 08	Wastes from other non-ferrous thermal metallurgy	Polychlorinated Biphenyls (PCB) (3): 50mg/kg	
10 08 08 (****)	Salt slag from primary and secondary production	DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane): 5 000mg/kg	
10 08 15 (****)	Flue-gas dust containing dangerous substances	Chlordecone: 5 000mg/kg	
10 09	Wastes from casting of ferrous pieces	Polychlorinated dibenzodioxins and dibenzofurans (PCDD/PCDF) (6) 5mg/kg	
10 09 09 (****)	Flue-gas dust containing dangerous substances	the sum of alpha-, beta- and gamma-HCH: 5 000 mg/kg	
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST	Hexabromobiphenyl: 5 000mg/kg	
16 11	Waste linings and refractories		
16 11 01 (****)	Carbon-based linings and refractories from metallurgical processes containing dangerous substances		
16 11 03 (****)	Other linings and refractories from metallurgical processes containing dangerous substances		

<sup>16</sup> Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1). Directive as last amended by Regulation (EC) No 1882/2003.

<sup>17</sup> Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste and landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC (OJ L 11, 16.1.2003, p. 27).

## 9.8 Annex V - Construction and Demolition Wastes (Including Excavated Soil from Contaminated Sites)

Wastes as classified in Commission Decision 2000/532/EC		Maximum concentration limits of substances listed in Annex IV	Operation
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	Aldrin: 5 000mg/kg	Permanent storage only in: — safe, deep, underground, hard rock formations, — salt mines or — a landfill site for hazardous waste <sup>18</sup> (provided that the waste is solidified or stabilised where technically feasible as required for classification of the waste in subchapter 19 03 of Decision 2000/532/EC) whereby the provisions of Directive 1999/31/EC and Decision 2003/33 /EC have to be adhered to and whereby it has been demonstrated that the selected operation is environmentally preferable.
17 01 concrete, bricks, tiles and ceramics		Chlordane: 5 000mg/kg	
17 01 06 (****)	Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances.	Dieldrin: 5 000mg/kg	
17 05	Soil including excavated soil from contaminated sites, stones and dredging spoil	Endrin: 5 000mg/kg	
17 05 03 (****)	Inorganic fraction of soil and stones containing dangerous substances	Heptachlor: 5 000mg/kg	
17 09	Other construction and demolition wastes	Hexachlorobenzene: 5 000mg/kg	
17 09 02 (****)	Construction and demolition wastes containing PCB, excluding PCB containing equipment.	Mirex: 5 000mg/kg	
17 09 03 (****)	Other construction and demolition wastes containing dangerous substances	Toxaphene: 5 000mg/kg	
		Polychlorinated Biphenyls (PCB) (3): 50mg/kg	
		DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane): 5 000mg/kg	
		Chlordecone: 5 000mg/kg	
		Polychlorinated dibenzo-pdioxins and dibenzofurans (PCDD/PCDF) (6) 5mg/kg	
		the sum of alpha-, beta- and gamma-HCH: 5 000 mg/kg	
		Hexabromobiphenyl: 5 000mg/kg	

<sup>18</sup> Except in the case of waste containing or contaminated by PCBs above the concentration of 50 ppm.

## 9.9 Annex V - Wastes from Waste Management Facilities, Off-Site Waste Water Treatment Plants and the Preparation of Water Intended for Human Consumption

Wastes as classified in Commission Decision 2000/532/EC		Maximum concentration limits of substances listed in Annex IV	Operation
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION	Aldrin: 5 000mg/kg Chlordane: 5 000mg/kg Dieldrin: 5 000mg/kg Endrin: 5 000mg/kg	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 stabilised where technically feasible as required for classification of the waste in subchapter 19 03 of Decision 2000/532/EC) whereby the provisions of Directive 1999/31/EC and Decision 2003/33/EC have to be adhered to and whereby it has been demonstrated that the selected operation is environmentally preferable.
19 01	Wastes from incineration or pyrolysis of waste	Heptachlor: 5 000mg/kg	
19 01 07 (****)	Solid wastes from gas treatment	Hexachlorobenzene: 5 000mg/kg	
19 01 11 (****)	Bottom ash and slag containing dangerous substances	Mirex: 5 000mg/kg	
19 01 13 (****)	Fly ash containing dangerous substances	Toxaphene: 5 000mg/kg	
19 01 15 (****)	Boiler dust containing dangerous substances	Polychlorinated Biphenyls (PCB) (3): 50mg/kg	
19 04	Vitrified waste and waste from vitrification	DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane): 5 000mg/kg	
19 04 02 (****)	Fly ash and other flue-gas treatment wastes	Chlordecone: 5 000mg/kg	
19 04 03 (****)	Non-vitrified solid phase	Polychlorinated dibenzo-pdioxins and dibenzofurans (PCDD/PCDF) (6) 5mg/kg the sum of alpha-, beta- and gamma-HCH: 5 000 mg/kg Hexabromobiphenyl: 5 000mg/kg	

(1) These limits exclusively apply to a landfill site for hazardous waste and do not apply to permanent underground storage facilities for hazardous wastes, including salt mines.

(2) Any waste marked with an asterisk \* is considered as hazardous waste pursuant to Directive 91/689/EEC and is subject to the provisions of that Directive.

(3) Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

(4) Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1). Directive as amended by Regulation (EC) No 1882/2003.

(5) Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC (OJ L 11, 16.1.2003, p. 27).

(\*\*\*\*) Any waste marked with an asterisk (\*) is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and is subject to the provisions of that Directive.

(e) The limit is calculated as PCDD and PCDF according to the following toxic equivalency factors (TEFs):

<b>PCDD</b>	<b>TEF</b>
2,3,7,8-TeCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0001

  

<b>PCDF</b>	<b>TEF</b>
2,3,7,8-TeCDF	0.1
1,2,3,7,8-PeCDF	0.05
2,3,4,7,8-PeCDF	0.5
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0001