February 2018

QUESTIONNAIRE

"*Study to Support the Review of Waste-related issues in Annexes IV and V of Regulation (EC) 850/2004*"[1]

1) Aim of the questionnaire

The following questionnaire has been developed by a contractor employed by the European Commission. The questionnaire aims at gathering up-to-date information and quantitative data on Persistent Organic Pollutants (POPs) and more specifically on waste related issues of certain "new POPs", "candidate POPs" and "already listed POPs". The information will be provided to the EU Commission as part of a project to propose changes to the POPs regulation. It is particularly relevant for new substances and includes a review of concentration limits for substances already listed. In addition, the study shall provide guidance on how wastes containing the new POPs may be managed.

2) Background information

POPs are a group of organic compounds that possess toxic properties, persist in the environment, bioaccumulate through the food web and pose a risk to human health and the environment. POPs are transported across international boundaries far from their sources through air, water and migratory species.

The "Protocol to the regional UNECE Convention on Long-Range Transboundary Air Pollution" (CLRTAP) and the Global "Stockholm Convention" on POPs are international, legally binding instruments aiming to reduce and eliminate the production, use and releases of POPs in the territories of all participating parties. Both contain provisions on the environmentally sound management of wastes consisting of, containing or contaminated by POPs (hereafter called "POP waste").

Although substantial progress has been achieved in limiting the use and application of POPs and reduce their emission into the environment, there are ongoing releases into the environment as well as a constant cycling of substances released in the past. For an optimised approach to elimination, all sectors in the life cycle of a product and of anthropogenic emission sources need to be considered. In this framework, proper waste management can contribute substantially to the reduction of POP releases into the environment, and a comprehensive legislation on POP waste is a necessary pre-requisite.

The Stockholm Convention was implemented into EU Community law in 2004 by the POP Regulation. It foresees an obligation to generally destroy or irreversible transform the POP content of waste above certain concentration limits (the 'low POP content'). In addition, in exceptional cases, waste above the limits may be otherwise managed with defined operations for specified waste types if destruction or irreversible transformation do not represent the environmentally

[1] Information related to this project on behalf of the European Commission is provided on a dedicated project website at http://pops-and-waste.bipro.de.

preferable option and the concentration in such wastes are below another threshold (the 'high POP content').[2]

In 2017, the Conference of the Parties of the Stockholm Convention (SC) decided to add three new substances to the relevant Annexes. Every time a substance is listed as a POP by the SC, the parties have to reflect the listing in domestic legislation. The EU as a party to the Convention is requested to amend the POP Regulation by May 2018 to include these 'new POPs'.

In addition, three substances are currently under review procedures and are likely to be added to the list of POPs under the SC in the next years (the so- called “candidate POPs”). For the new POPs and the candidate POPs, there is a need to improve the knowledge basis regarding quantities that were used in the past, their concentrations and sources, as well as regarding aspects related to waste management in terms of disposal and recycling paths. This information is needed to assess possible disposal options and to establish concentration limits for waste[3]. Consequently, further analysis is needed for the following substances:

- **“new POPs”:** Decabromodiphenylether (decaBDE), short-chain chlorinated paraffins (SCCPs) and Hexachlorobutadiene (HCBD)

- **“candidate POPs”:** Dicofol, Pentadecafluorooctanoic acid (PFOA, perfluorooctanoic acid) and its salts and PFOA-related compounds, Perfluorohexanoic acid (PFHxS) and its salts and PFHxS-related compounds

Furthermore, new scientific information on three substances already listed in the annexes of the SC has raised the necessity of reviewing already established concentration limits. Therefore, the following substances require renewed analysis and, potentially adjustment of the concentration limits:

- **“already listed POPs”:** Hexabromocyclododecane (HBCD), Polychlorinated Biphenyls (PCB), Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)

4) Instructions on using the questionnaire

Please note that some of the relevant questions might have already been addressed in requests for information under the SC or the Basel Convention (BC). The EU Commission will take submissions from EU member states related to these requests for informationand they will be reviewed and considered as appropriate for the purpose of the actual study.

The present questionnaire is provided as an MS-Word-file and it would be much appreciated to receive your responses using this electronic version. All questions are numbered and highlighted in grey. All fields where input is desired are blue.

[2] Article 7 of Regulation EC (No) 850/2004

[3] Note that for SCCPs and HCBD concentration limits are already established in the Annexes IV and V of the POP Regulation. Only for decaBDE new concentration limits need to be established.

The questionnaire is structured in three main sections.

- **Section I – "new POPs":** decaBDE, SCCPs and HCBD
- **Section II – "candidate POPs":** dicofol, PFOA and PFHxS
- **Section III – "already listed POPs":** HBCD, PCB and PCDD/PCDF

Please only fill in the sections that you consider relevant and where you can provide specific information. Please provide specific references wherever possible and do not hesitate to also send us additional background information in form of documents, reports, data sets or as links to websites.

All information provided will be used in a transparent and traceable way for the present study. Any information you provide may be forwarded on to the EC but it can be anonymised if you request us to do so.

Please indicate in the following table whether you agree with the publication of your answers to the Questionnaires:

Section		Y/N
I.I	Occurrence of "new POPs" decaBDE, SCCPs and HCBD	
I.II	Recycling Operations/Waste Management Options for "new POPs"	
I.III	Concentration Limits for decaBDE, SCCPs and HCBD	
II.I	Occurrence of "candidate POPs" Dicofol, PFOA and PFHxS	
II.II	Recycling Operations/Waste Management Options for "candidate POPs"	
II.III.	Concentration Limits for dicofol, PFOA and PFHxS	
III	Already listed POPs	

Please return the completed questionnaire and any related documents to Robert.taylor@defra.gsi.gov.uk before 29 March 2018.

Section I – "new POPs"

Decabromodiphenylether (decaBDE); short-chain chlorinated paraffins (SCCPs); Hexachlorobutadiene (HCBD)

I. **Occurrence of "new POPs" decaBDE, SCCPs and HCBD** (articles in use, waste, recycled articles as well as (production) processes and unintentional releases)

1. *a) Please indicate whether your organisation/company has* ***stockpiles of decaBDE, SCCPs or HCBD.***

b) ***If yes,*** *please provide information on types, quantity, concentrations, etc.*

Following consultation with industry one organisation in the Polymer Recyclingsector indicated that it has stockpiles of decaBDE:

- PP2182 (WEEE) 5ppm
- PP2182 (ASR) <5ppm
- fPP 2131 (WEEE) 180ppm
- PS3121 (WEEE) 141ppm
- PS3122 (ASR) 103ppm
- PS3132 (VEOLIA) 20ppm
- ABS4124 (ASR) <5ppm
- ABS4124 (WEEE) <5ppm
- ABS4125 (WEEE) 11ppm
- ABS (VEOLIA) 25ppm

The UK Automotive sector has indicated that the need for a continued supply of so called Legacy Spare Parts (LSPs) means there is likely to be a small amount of decaBDE stockpiled at material manufacturers. The levels are non-specific.

2. *Please indicate any known* ***occurrence and concentration of the "new POPs" decaBDE****,* ***SCCPs and HCBD*** *in different* ***articles in use, waste*** *categories* ***and recycled articles****.*

decaBDE	Specification of waste/article	Concentration [mg/kg]
Organisation A		
Articles in use	None	
Wastes		
decaBDE	Plastics (MAP10)- 5 – 10mm mixed polymer chip 30 - 270 mg/kg	30 - 270 mg/kg
	Mixed Fines particles – rust, dirt, glass, plastic <3mm 14 - 78 mg/kg	14 - 78 mg/kg
	Foam & Textile fluffs (SRF) 37 - 110 mg/kg	37 - 110 mg/kg
Recycled articles	Recycled polymer PRODUCTS	
Axpoly PP	decaBDE	Nil detect
Axpoly ABS	DecaBDE 209	<5 mg/kg
Axpoly PP	decaBDE	Non Detect – N.D.
Axpoly ABS	decaBDE	Non Detect – N.D.
Organisation B		
Articles in use	Unclear	
Wastes	Electrical & Electronic Equipment	
	Refrigerating Equipment	
	IT & Telecommunications Equipment	
Recycled articles	Recycled WEEE plastic	
Organisation C – Automotive Industry		

Articles in use	None	
Wastes	The concentrations of DecaBDE in the waste streams (SR - Shredder residues) are differing, depending on origins (e.g. purely Automotive waste or mixed waste). According to studies concentrations of DecaBDE in pure ASR were well below 1.000 mg/kg neglecting one outlier with more than 1.000 mg/kg	0,01 - 590 in ASR
	Fibres as a fraction of ASR (gained by separation via Post Shredder Technology PST), measured by ARN Tiel during 2 months in 2017	0 - 48
	Plastic < 1.1 g/cm³ (gained by separation via Post Shredder Technology PST), measured by ARN Tiel during 2 months in 2017	0 - 12
Recycled articles	There is no information available in our industry on the amount of DecaBDE in recycled articles.	
SCCPs	Specification of waste/article	Concentration [mg/kg]
Organisation B		
Articles in use	Flame retardant in rubber (e.g. conveyor belts)	Upper Concentration Limit 10,000 mg/Kg
	Rubber, plastic	
	Textiles, shoes	
	Sealants and joint sealing compounds	
	Paints, glues	
	Lubricating oils	
	Kitchen appliances	
	Game controllers	
Wastes		
Recycled articles		
Organisation A		
HCBD	Specification of waste/article	Concentration [mg/kg]
Articles in use		
Wastes	Possibly in some insulation from building construction panels - metal scrap	Not measured
Recycled articles	None detected	
Organisation B		
Articles in use	Heat carrier fluids	
	Transformer fluids	

	Pesticide	
Wastes	By-product of manufacturing chlorinated hydrocarbons	

Remarks:

3. *Please provide i**nformation on quantities of waste containing "new POPs" that are currently generated, then disposed of or recycled***

"new POPs"	Specification of waste	Waste generated (in kt)	Waste disposed of (in kt)	Waste recycled (in kt)
Organisation A				
decaBDE	Found in certain plastic parts of mixed bulk waste infeed	120 – 150,000 tonnes total ASR processed. With very low trace levels PBDE	100 – 130,000 tonnes – as separated materials – recovery / waste	Plastics 7 – 8000 tonnes per annum. 10,000 tpa aggregates Metals – 5000 tpa
SCCPs				
HCBD				
Organisation B (Automotive Industry)				
decaBDE	ASR (in average 20 % of each vehicle)	According to Eurostat the total weight of all End-of-life-vehicles in EU-28 in 2014 was 6,350 kt which results in app. 1,270 kt ASR in EU-28 in 2014	A maximum of 5 % of the vehicle weight is disposed of resulting in 317 kt in EU-28 in 2014	According to statistics 6.033 kt of ASR have been recycled or recovered in EU-28 in 2014
	Dismantled plastic parts from End-of-life-vehicles (e.g. bumpers) for reuse or recycling	No data for EU-28 available. Data from German BMU showed that 1.36 kt of plastic parts were dismantled	No data for EU-28 available. Data from German BMU showed that 0.03 kt of dismantled plastic parts were disposed of	No data for EU-28 available. Data from German BMU showed that 1.3 kt of dismantled plastic parts were recycled
SCCPs				
HCBD				

4. *Please provide i**nformation on wastes containing "new POPs" that are currently recycled** (now or in the near future) and on the extent of recycling. If possible, please specify the types of new articles produced from the recycled material.*

"new POPs"	Types of waste recycled	Recycling rate [%]	New articles produced from recycled material
Organisation A			
decaBDE	Mixed plastic chips – to POLYMER	55% of infeed	Axpoly PP , ABS, PS pellet compound
SCCPs			
HCBD			
Organisation C			
decaBDE	ASR (EU-28 2014)	95 % for recycling and recovery	No information available
	Dismantled plastic parts from End-of-life-vehicles (e.g. bumpers) for reuse or recycling	95,6 %	No information available

Remarks:

5. *Please indicate up-to-date (reference) **measurement (analytical) methods** for identifying the presence and levels of the listed "new POPs" in waste.*

In consultation with UK industry the following measurement methods were highlighted:

- Mid Infrared (MIR) Reflection Spectroscopy
- MIR Pyrolysis Spectroscopy
- Raman Scattering Spectroscopy
- Mass Pyrolysis Spectroscopy
- Sliding Spark (Spark Ablation) Spectroscopy
- X-Ray Fluorescence Spectroscopy (XRF)
- MIR Acousto-Optic Tunable Filter (MIR AOTF) Spectroscopy
- Laser Induced thermal Impulse Response (TIR)
- Laser Induced Plasma Spectroscopy (LIPS) Spectroscopy
- Near Infrared (NIR) Spectroscopy
- Gas Chromatography – Mass Spectrometry (GC/MS)
- Fourier Transform Infrared (FT-IR) Spectroscopy
- Laser Induced Breakdown Spectroscopy (LIBS) [also known as Laser Induced Plasma Spectroscopy (LIPS)) and Laser Induced Multi Emission Spectroscopy (LIMES)]

6. *Please indicate known inexpensive* ***screening methods*** *for identifying wastes containing "new POPs"*

UK industry identified the following methods:

Polymers Recycling Industry
In house XRF test unit – calibrated for plastics and to detect bromine content (all sources of bromine). These cost £20 - £30,000 to purchase in UK . Each test takes an average of 3 minutes. There are ongouig repair and calibraiton costs for this system – approx £3k per annum.

This method enables effective screening for below 1000ppm level. However, this method does not identify individual cogeners.

Other screening methods identified (cost unknown):

* Density separation (sink/float method)

* Water hydroclones

* NIR auto-sorter machine

* Optical colour sorting

* Triboelectric separation

* X-Ray transmission (XRT) machine

* Airstream sorting

7. *Please indicate any known* ***(production) processes using decaBDE, SCCPs and HCBD*** *as well as options for the environmental management of their operation and potential related* ***unintentional releases of these POPs*** *into the environment.*

No information provided

II. Waste Management Options/Recycling Operations for "new POPs"

8. *Waste separation for decaBDE, SCCPs and/or HCBD containing wastes:*
a) How can be ***distinguished*** *between* ***contaminated and non-contaminated waste****?*
b) Which ***separation operations*** *should preferably be used* ***in practice to separate*** *contaminated from non-contaminated waste (please provide further details if available)?*
c) What should be the preferred ***waste management options for the contaminated waste fraction*** *(please provide justification and further details if available e.g. related costs)?*

a)

Polymers Recycling Industry

Representatives of the UK Polymers Recycling industry reason that the only known way to distinguish individual pieces of plastic which contain PBDE's is XRF Screening of each individual item. Each sample would then need to be laboratory tested for the specific PBDE. The industry argues that this is impractical considering the quantities of material processed.

The industry recommendation is for record keeping of monitoring for 'total bromine' in the major process flow streams, with periodical checks for 'all banned cogeners' on a monthly composite sample method.

It is noted that a combination of manual separation, sink and float, XRF screening, sliding spark screening, XRT technology and Raman spectroscopy is needed to separate mixed plastics from E-waste.

b)

Preferable separation operations	Relevant waste / new POP	Possible health risks for workers during separation of waste	Separation costs / ton of waste	Explanation / further information
Polymers Recycling Industry (not in order of preference)				
Density separation (sink/float)				BFR additives increase the density of the ABS and HIPS materials significantly, when added at typical concentrations (> 3%). If treated in an appropriate liquid medium, bromine-free PS will float while bromine containing PS will sink, thus separating the polymers containing Br from other polymers.
Advanced liquid phase density separation	Plastics with decaBDE and/or other PBDE	None known risks – all plastic in water phase and away from human contact	Estimate approximate £300 per tonne of plastic infeed.	Significant levels of R&D investment needed to

				commercialise this method.
On-line XRF detection and rejection system	Brominated FR in plastics – non POP specific.	None known risks	N/A	In testing phase
Automotive Industry				
Post-shredder technologies	Non metallic ASR (Automotive Shredder Residue)	There are no health risks, provided that the standard procedures and requirements are fulfilled.	Recycling operations are not executed by automotive OEMs but by relevant actors in the recycling sector.	

Remarks:

c)

Preferable waste management operations	Relevant waste / new POP	Possible health risks for workers during waste management (e.g. recycling)	Management costs / ton of waste	Explanation / further information
Mixed industry response (not in order of preference)				
Incineration with energy recovery	decaBDE / other PBDE's			Burn BFR polymer in conventional large scale waste incinerator alongside municipal solid waste. Energy recovered as electrical power. Dry-type air pollution control system as used in most UK incinerators.
Creasolv	Trials conducted on real WEEE polymer collected in the UK (HIPS-FR from TV sets). Good BFR extraction demonstrated.			Solvent extraction of BFRs using combination of special solvents. Precipitation of polymer from solution followed by extrusion of finished pellets.
Ionic Liquid				Solvent extraction of BFRs using

				tailored ionic liquid solvent.
Municipal waste incineration	For POPs which break down at lower temperatures than HTI			HTI capacity in the EU is variable.

Remarks: The above options derive from consultation with various UK organisations and industry representatives

III. Concentration Limits for decaBDE, SCCPs and HCBD

9. *Are you aware of* ***any existing concentration limits for decaBDE in waste?***

During consultation with UK industry, answers to this question varied.

10. *Which* ***concentration limits for decaBDE in*** *waste according to the POP Regulation would you recommend? Please justify.*

The agreed concentration limits need to consider the impact on the circular economy as well as the impact on the environment. The UK would welcome further opportunities to discuss the setting of concentration limits for decaBDE. We recommend further analysis of the levels of decaBDE in articles going through the waste stream and discussions with member states before concentration limits are set for decaBDE.

Discussions with the polymer and car waste Industry suggest that 1000ppm for waste plastic streams for decaBDE as an individual substance (not as a combined threshold with other PBDE substances) may be acceptable but further consideration is needed as to whether current available seperation technology makes this practical.

Other waste streams have not been able to provide information which will allow us to assess the impact of threshold levels for all articles containing decaBDE.

11. *At which lower concentration limits for decaBDE in waste would you* ***expect relevant impacts*** *(e.g. on recycling industry)? Please justify.*

Following consultation with UK industry there is clear concern that a level for decaBDE <1000ppm could impact significantly on the recycling sector.

For certain sectors in the WEEE AATF treatment industry it has been argued that this limit could have further impact as there is historical evidence of higher levels of BFR additives being used in certain products (TV and computer monitor casings, flat panel displays).

The automotive industry are partuclarly concerned that an LPCLV <1000ppm is in direct contradiction to the recycling quota too be fulfilled under directive 2000/53/EC.

Additionally, the incineration capacity of Member States varies significantly and therefore sufficient consideration of the effects of transporting waste for incineration should also be considered.

12. *Is there a* ***continued need for the derogation provided for POP-PBDEs in articles*** *produced from recycled materials in the POPs Regulation (i.e. level of 1,000 mg/kg or 0.1% by weight) of POP-PBDEs allowed in articles produced partially or fully from recycled materials?[4] Please justify.*

Polymers Recycling Industry

The continuation of <1000 ppm for articles produced from recycled plastics does conform with the industry standard REACH for total Bromine testing using XRF methods. However – for the banned PBDE's (tetra- octa penta-) industry evidence shows that a much lower level could be tolerated – perhaps down to 50 ppm per individual cogener for 5 more years. For decaBDE - certain industry members argue that a period with a 100 ppm allowed level in articles made from recycled plastic, will allow for all the trace levels of decaBDE in recycled extruded pellet compound to gradually reduce. A period of 10 years is proposed to enable this to happen in the existing waste processing system for WEEE and ELV plastics.

13. *Is an* ***adjustment of existing POP limit values for SCCPs[5] and HCBD[6], as specified in Annex IV and V of the EU POP Regulation,*** *and/or* ***additional measures required*** *(e.g. due to any notable developments)? Please justify.*

We have no additional information.

[4] See Annex I Regulation (EC) No 850/2004

[5] Regulation (EC) 850/2004, Annex IV, concentration limit referred to in Article 7(4)(a): 10 000 mg/kg; Maximum concentration limits of substance listed in Annex IV: 10 000 mg/kg

[6] Regulation (EC) 850/2004, Annex IV, concentration limit referred to in Article 7(4)(a): 100 mg/kg; Maximum concentration limits of substance listed in Annex IV: 1000 mg/kg

14. *Please indicate if, beyond the EU POP Regulation, there are any adjustments to EU legislation needed, resulting from the listing of the "new POPs" decaBDE, SCCPs and HCBD under the Stockholm Convention.*

Polymers Recycling Industry

Certain industry members argue that the REACH regulations need to be adjusted to reflect the new evidence on the new POPs. They are of the opinion that keeping the '1000 ppm' for Total Bromine does provide a simple easy monitoring system. However, the decaBDE cogener needs to reflect the 100ppm limit mentioned above for the presence in articles (and substance and mixtures – i.e. recycled plastic compounds).

15. *Can you provide any other information or information sources relevant to Section I of this questionnaire on the "new POPs"?*

No further information.

Section II – "candidate POPs"

Dicofol, Pentadecafluorooctanoic acid (PFOA, perfluorooctanoic acid), its salts and PFOA-related compounds, Perfluorohexanoic acid (PFHxS), its salts and PFHxS-related compounds

I. Occurrence of "candidate POPs" Dicofol, PFOA and PFHxS (articles in use, waste, recycled articles as well as production processes and unintentional releases)

16. *a) Please indicate whether your organisation /company has* ***stockpiles*** *of "candidate POPs" listed.*

b) If ***yes****, please provide information on types, quantity, concentrations, etc.*

a) DEFRA are aware of 7 organisations that currently have stockpiles of PFOS or derivatives of:

Organisation	Substance	Quantity (kg)	POP Concentration	POP Conc (Units per kg)	Neat POP equivalent (kg)
Company 1	PFOS	24,300	2	ml/L	48.6
Company 2	Perfluoroctane Sulphonate	5	<0.25	Kg	1.25
Company 2	Perflourooctane Sulphonate	1200	<0.25	Kg	1.2
Company 3	tetraethylammoniumperfluorooctanesulphonate	30	500	g/Kg	15
Company 3	tetraethylammoniumperfluorooctanesulphonate	50	500	g/Kg	25
Company 3	tetraethylammoniumperfluorooctanesulphonate	500	58.3	g/kg average	29.15
Company 3	tetraethylammoniumperfluorooctanesulphonate	300	0.1	g/Kg	0.03

17. *Please indicate any known* ***occurrence and concentration of the "candidate POPs****", in different* ***articles in use, waste*** *categories* ***and recycled articles****.*

a) Dicofol	Specification of waste/article	Concentration [mg/kg]
Articles in use		
Wastes		
Recycled articles		
b) PFOA, its salts and PFOA-related compounds	Specification of waste/article	Concentration [mg/kg]
Organisation C		
Articles in use	PFOA and its compounds have been phased out from applications under the control of the EU vehicle manufacturers since 2015. Only remaining articles in use are low amounts of spare parts on stock.	

Wastes	ASR*	
	ASR fines*	
Recycled articles	There is no information available in our industry on the amount of PFOA and its compounds in recycled articles. Vehicle components made of recycled materials however do not undergo different rules then components made of virgin materials.	
c) PFHxS, its salts and PFHxS-related compounds	Specification of waste/article	Concentration [mg/kg]
Articles in use		
Wastes		
Recycled articles		

Remarks: * ELV Environmental Services Ltd (ELVES). Analysis of Automobile Shredder Residue, Clearaway, Belfast. Letter report and analytical report number 15-80068-2 from mayer environmental to ELVES, 7th December 2015

18. *Please provide* ***information on quantities of waste containing "candidate POPs" that are currently generated, then disposed of or recycled***

"candidate POPs"	Specification of waste	Waste generated (in kt)	Waste disposed of (in kt)	Waste recycled (in kt)
Dicofol				
PFOA, its salts and PFOA-related compounds				
PFHxS, its salts and PFHxS-related compounds				

19. *Please provide* ***information on wastes containing "candidate POPs" that are currently recycled*** *(or possibly in the future) and the extent of recycling. If possible, please specify the types of new articles produced from the recycled material?*

"candidate POPs"	Types of waste recycled currently (or in the future)	Recycling rate [%]	New articles produced from recycled material
Dicofol			

PFOA, its salts and PFOA-related compounds			
PFHxS, its salts and PFHxS-related compounds			

Remarks:

20. *Please indicate up-to-date (reference)* ***measurement (analytical) methods*** *for identifying the presence and levels of the listed "candidate POPs" in waste.*

Not known

21. *Please indicate known inexpensive screening methods for identifying waste to be classified as POPs wastes due to their content of the listed "candidate POPs".*

Not known

22. *Please indicate any known* ***(production) processes using dicofol, PFOA and PFHxS*** *as well as options for the environmental management of their operation and potential related* ***unintentional releases of these POPs*** *into the environment.*

Not known

II. Waste Management Options/Recycling Operations/for "candidate POPs"

23. *Waste separation for dicofol, PFOA and PFHxS containing waste:*
a) How can be ***distinguished*** *between* ***contaminated and non-contaminated waste?***
b) Which ***separation operations*** *should preferably be used* ***in practice to separate*** *contaminated from non-contaminated waste (please provide further details if available)?*
c) What should be the preferred ***waste management option for the contaminated waste fraction*** *(please provide justification and further details if available e.g. related costs)?*

a)

b)

Preferable separation operation	Relevant waste/candidate POP	Possible health risks for workers during separation of waste	Separation costs /ton of waste	Explanation / further information
1.				
2.				
3.				

Remarks:

c)

Preferable waste management operation	Relevant waste/candidate POP	Possible health risks for workers during waste management (e.g. recycling)	Management costs / ton of waste	Explanation / further information
1.				
2.				
3.				

Remarks:

III. Concentration Limits for dicofol, PFOA and PFHxS

24. *Are you aware of* ***any existing concentration limits for dicofol, PFOA and PFHxS in waste****? (please list limits individually)*

25. *Which* ***concentration limits for dicofol, PFOA and PFHxS in waste*** *according to the POP Regulation would you recommend? Please justify.*

The UK would welcome further opportunities to discuss the setting of concentration limits for these cadidate POPs. We recommend further analysis of the presence of these substances in articles going through the waste stream and discussions with member states before concentration limits are set.

26. *At which lower concentration limits* ***for dicofol, PFOA and PFHxS*** *in waste would you* ***expect relevant impacts*** *(e.g. on recycling industry)? Please justify.*

Further analysis needs to be undertaken before we can assess the impacts.

27. *Please indicate if, beyond the EU POP Regulation, there are any adjustments to EU legislation needed, resulting from the listing of the candidate POPs under the Stockholm Convention.*

No changes are required.

28. *Can you provide any other information or information sources relevant to Section II of this questionnaire on the "candidate POPs"?*

Section III – "already listed POPs"

Hexabromocyclododecane (HBCD), Polychlorinated Biphenyls (PCB), Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)

29. *Are the existing concentration limits in Annex IV and V of the EU POP Regulation* ***for HBCD, PCB and PCDD/F*** *appropriate to ensure a sufficient level of environmental and health protection or is it necessary to adjust* ***them*** *(e.g. due to any notable developments such as new scientific data and technical progress, etc.)? Please justify.*

We believe that the existing concentration limits are sufficient.

30. *If the existing limit values need to be adjusted, which* ***concentration limits for HBCD, PCB and PCDD/F in waste*** *would you recommend and why?*

N/A

31. *What would be the* ***major impacts from a possible adjustment of existing limit values of Annex IV or V of the EU POP Regulation****? Please justify.*

The impact on the circular economy need to be considered when assessing the concentration limits for existing POPs.