

**REGULATION (EU) 2022/2400 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**  
**of 23 November 2022**  
**amending Annexes IV and V to Regulation (EU) 2019/1021 on persistent organic pollutants**  
**(Text with EEA relevance)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee <sup>(1)</sup>,

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure <sup>(2)</sup>,

Whereas:

- (1) Regulation (EU) 2019/1021 of the European Parliament and of the Council <sup>(3)</sup> on persistent organic pollutants implements at Union level the commitments set out in the Stockholm Convention on Persistent Organic Pollutants ('the Convention') approved on behalf of the Community by Council Decision 2006/507/EC <sup>(4)</sup>, and in the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants, approved on behalf of the Community by Council Decision 2004/259/EC <sup>(5)</sup>.
- (2) At the seventh meeting of the Conference of the Parties to the Convention, held from 4 to 15 May 2015, it was agreed to include pentachlorophenol, its salts and esters ('pentachlorophenol') in Annex A to the Convention. At the ninth meeting of the Conference of the Parties to the Convention, held from 29 April to 10 May 2019, it was agreed to include dicofol as well as perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds in Annex A to the Convention. At the tenth meeting of the Conference of the Parties to the Convention, held from 6 to 17 June 2022, it was agreed to include perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds in Annex A to the Convention. In view of those amendments to the Convention and to ensure that waste containing those substances is managed in accordance with the provisions of the Convention, it is necessary also to amend Annexes IV and V to Regulation (EU) 2019/1021 by including pentachlorophenol, dicofol and PFOA, its salts and PFOA-related compounds, as well as PFHxS, its salts and PFHxS-related compounds in the Annexes and indicating their corresponding concentration limits.

<sup>(1)</sup> OJ C 152, 6.4.2022, p. 197.

<sup>(2)</sup> Position of the European Parliament of 4 October 2022 (not yet published in the Official Journal) and decision of the Council of 24 October 2022 (not yet published in the Official Journal).

<sup>(3)</sup> Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants (OJ L 169, 25.6.2019, p. 45).

<sup>(4)</sup> Council Decision 2006/507/EC of 14 October 2004 concerning the conclusion, on behalf of the European Community, of the Stockholm Convention on Persistent Organic Pollutants (OJ L 209, 31.7.2006, p. 1).

<sup>(5)</sup> Council Decision 2004/259/EC of 19 February 2004 concerning the conclusion, on behalf of the European Community, of the Protocol to the 1979 Convention on Long Range Transboundary Air Pollution on Persistent Organic Pollutants (OJ L 81, 19.3.2004, p. 35).

- (3) Pentachlorophenol had been previously listed in Annexes IV and V to Regulation (EC) No 850/2004 of the European Parliament and of the Council<sup>(6)</sup> by Commission Regulation (EU) 2019/636<sup>(7)</sup>, with an Annex IV value of 100 mg/kg and an Annex V value of 1 000 mg/kg. Regulation (EU) 2019/1021, which repealed Regulation (EC) No 850/2004, unintentionally omitted pentachlorophenol. It is therefore necessary to amend Annexes IV and V to Regulation (EU) 2019/1021 to include pentachlorophenol.
- (4) Annexes IV and V to Regulation (EU) 2019/1021 already contain concentration limits for the following substances or substance groups: (a) the sum of the concentrations of tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether (with the exception of the latter, which is not listed in Annex V to that Regulation); (b) Hexabromocyclododecane; (c) Alkanes C<sub>10</sub>-C<sub>13</sub>, chloro (short-chain chlorinated paraffins) (SCCPs); and (d) Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF). Pursuant to Article 15(2) of Regulation (EU) 2019/1021, it is appropriate to amend the concentration limits in Annex IV for those substances to adapt their limit values to scientific and technical progress. In order to be consistent with the list of polybrominated diphenyl ethers (PBDEs) set out in Annex IV to Regulation (EU) 2019/1021, the substance decabromodiphenyl ether should be included among the PBDEs listed in the third column of Annex V to that Regulation.
- (5) In order to enable Member States to collect data on the actual amount of PCDD/PCDF and of dioxin-like polychlorinated biphenyls (dl-PCBs) in ashes and soot from private households, as well as in fly ashes from biomass units for heat and power production, and to afford Member States sufficient time to take measures necessary to give effect to Regulation (EU) 2019/1021, the amended concentration limit for the sum of PCDD/PCDF and dl-PCBs should, with regard to ashes and soot from private households and for fly ashes from biomass units, apply at a later stage after the entry into force of this Regulation. In order to enable the design of suitable policies for the collection and treatment of those ashes and soot and to support the review referred to in Annex IV and the monitoring of implementation pursuant to Article 13 of Regulation (EU) 2019/1021, Member States should collect information on the presence of PCDD/PCDF and dl-PCBs in ashes and soot from private households and fly ashes from biomass units for heat and power production. That information should be made available no later than 1 July 2026.
- (6) As regards PBDEs listed in Regulation (EU) 2019/1021, the concentration limit for the sum of those substances in waste should be set at 500 mg/kg. Taking due account of the declining concentrations of PBDEs in certain waste, resulting from existing limitations on the placing on the market and use of PBDEs, and in light of the possible evolution of relevant sorting and analytical methods, the limit value should be lowered to 350 mg/kg 3 years after the entry into force of this Regulation and 200 mg/kg 5 years after its entry into force.
- (7) Considering that a subgroup of 12 PCB congeners, namely PCB-77, PCB-81, PCB-105, PCB-114, PCB-118, PCB-123, PCB-126, PCB-156, PCB-157, PCB-167, PCB-169 and PCB 189, known as dl-PCBs, have toxicological properties that closely resemble those of PCDD/PCDF, and in order to take into account the aggregated effect of all dioxin-like compounds listed in Regulation (EU) 2019/1021, it is appropriate to include dl-PCBs within the existing group entry for PCDD/PCDF in Annexes IV and V to Regulation (EU) 2019/1021. The list of toxic equivalency factor values in Part 2 of Annex V to that Regulation should also be amended to introduce the corresponding values for the individual dl-PCB congeners.
- (8) The proposed concentration limits in Annexes IV and V to Regulation (EU) 2019/1021 have been set applying the same methodology used to establish the concentration limits in previous amendments of Annexes IV and V to Regulation (EC) No 850/2004. The proposed concentration limits should be underpinned by the precautionary principle as laid down in the Treaty on the Functioning of the European Union and should aim to eliminate, where feasible, the release of persistent organic pollutants into the environment, in order to achieve the objective of a high level of protection of human health and the environment associated with the destruction or irreversible transformation of the substances concerned. Those limits should also take into consideration the broader policy objective of achieving a zero-pollution ambition for a toxic-free environment, increasing recycling, reducing greenhouse gas emissions, developing non-toxic material cycles, and a non-toxic circular economy, enshrined in the communication of the Commission of 11 December 2019 entitled 'The European Green Deal'.

<sup>(6)</sup> Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC (OJ L 158, 30.4.2004, p. 7).

<sup>(7)</sup> Commission Regulation (EU) 2019/636 of 23 April 2019 amending Annexes IV and V to Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants (OJ L 109, 24.4.2019, p. 6).

- (9) The concentration limits specified in Annexes IV and V to Regulation (EU) 2019/1021 should be coherent and contribute to the implementation of the communication of the Commission of 14 October 2020 entitled 'Chemicals Strategy for Sustainability – Towards a Toxic-Free Environment'.
- (10) To ensure better traceability and effective treatment of waste containing persistent organic pollutants, and to avoid inconsistencies in Union law, it is necessary to ensure coherence between the provisions related to waste which contains persistent organic pollutants originally set out in Regulation (EC) No 850/2004, now repealed by Regulation (EU) 2019/1021, and those set out thereafter. The Commission should therefore assess whether it is appropriate that waste which contains any persistent organic pollutants exceeding the concentration limits specified in Annex IV to Regulation (EU) 2019/1021 is to be classified as hazardous, and put forward, if appropriate, a legislative proposal to amend Directive 2008/98/EC of the European Parliament and of the Council <sup>(8)</sup> or a proposal to amend Commission Decision 2000/532/EC <sup>(9)</sup>, or both, accordingly.
- (11) According to the objectives of the Textile Strategy, set out in the communication of the Commission of 30 March 2022 entitled 'EU Strategy for Sustainable and Circular Textiles', textile products placed on the Union market should be to a great extent made of recycled fibres that are free of hazardous substances. To ensure that recycled textiles are free of hazardous chemicals such as PFOA from the onset, it is necessary to strengthen limit values for PFOA, its salts and PFOA-related compounds in waste since their presence could have an impact on the collection and treatment of textile waste. The Commission should therefore review the concentration limit with a view to lowering the value, where such lowering is feasible in accordance with scientific and technical progress.
- (12) Regulation (EU) 2019/1021 should therefore be amended accordingly.
- (13) It is appropriate to provide for a sufficient period of time to allow companies and competent authorities to adapt to the new requirements.
- (14) Since the objective of this Regulation, namely to protect the environment and human health from persistent organic pollutants, cannot be sufficiently achieved by the Member States, owing to the transboundary effects of those pollutants, but can rather be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve that objective,

HAVE ADOPTED THIS REGULATION:

#### Article 1

Regulation (EU) 2019/1021 is amended as follows:

- (1) the following article is inserted:

*'Article 21a*

#### **Transitional provision**

1. A value of 10 µg/kg shall apply to fly ashes from biomass units for heat and power production containing or contaminated by polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF) and dioxin-like polychlorinated biphenyl (dl-PCBs) as listed in Annex IV until 30 December 2023. The value of 5 µg/kg provided for in Annex IV shall apply to fly ashes from biomass units for heat and power production from 31 December 2023.

<sup>(8)</sup> Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).

<sup>(9)</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).

2. A value of 15 µg/kg shall continue to apply for ashes and soot from private households containing or contaminated by polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF) as listed in Annex IV until 31 December 2024. For ashes and soot from private households containing or contaminated by polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF) and dioxin-like polychlorinated biphenyls (dl-PCBs), the value of 5 µg/kg provided for in Annex IV shall apply from 1 January 2025.;

(2) Annexes IV and V are amended in accordance with the Annex to this Regulation.

#### *Article 2*

The Commission shall assess whether it would be appropriate to amend Directive 2008/98/EC or Decision 2000/532/EC, or both, to recognise that waste containing any persistent organic pollutants exceeding the concentration limits specified in Annex IV to Regulation (EU) 2019/1021 is to be classified as hazardous, and, if appropriate, based on that assessment and not later than 36 months after entry into force of this Regulation, shall put forward a legislative proposal to amend Directive 2008/98/EC or a proposal to amend Decision 2000/532/EC, or both, accordingly.

#### *Article 3*

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall apply from 10 June 2023.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Strasbourg, 23 November 2022.

*For the European Parliament*  
*The President*  
R. METSOLA

*For the Council*  
*The President*  
M. BEK

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## ANNEX

Annexes IV and V are amended as follows:

(1) Annex IV is amended as follows:

(a) the following rows are added to the table:

Pentachlorophenol, its salts and esters	87-86-5 and others	201-778-6 and others	100 mg/kg
Dicofol	115-32-2	204-082-0	50 mg/kg
Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds, as set out in Annex I	335-67-1 and others	206-397-9 and others	1 mg/kg (PFOA and its salts), 40 mg/kg (sum of PFOA-related compounds) The Commission shall review that concentration limit and shall, where appropriate, adopt a legislative proposal to lower that value, where such lowering is feasible in accordance with scientific and technical progress, no later than 30 December 2027.
Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	355-46-4 and others	355-46-4 and others	1 mg/kg (PFHxS and its salts), 40 mg/kg (sum of PFHxS-related compounds) The Commission shall review that concentration limit and shall, where appropriate, adopt a legislative proposal to lower that value, where such lowering is feasible in accordance with scientific and technical progress, no later than 30 December 2027.'

(b) the row for the substance Alkanes C<sub>10</sub>-C<sub>13</sub>, chloro (short-chain chlorinated paraffins) (SCCPs) is replaced by the following:

'Alkanes C <sub>10</sub> -C <sub>13</sub> , chloro (short-chain chlorinated paraffins) (SCCPs)	85535-84-8	287-476-5	1 500 mg/kg The Commission shall review that concentration limit and shall, where appropriate, adopt a legislative proposal to lower that value no later than 30 December 2027.'
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- (c) the rows for the substances Tetrabromodiphenyl ether  $C_{12}H_6Br_4O$ , Pentabromodiphenyl ether  $C_{12}H_5Br_5O$ , Hexabromodiphenyl ether  $C_{12}H_4Br_6O$ , Heptabromodiphenyl ether  $C_{12}H_3Br_7O$  and Decabromodiphenyl ether  $C_{12}Br_{10}O$  are replaced by the following:

Tetrabromodiphenyl ether $C_{12}H_6Br_4O$	40088-47-9 and others	254-787-2 and others	Sum of the concentrations of tetrabromodiphenyl ether $C_{12}H_6Br_4O$ , pentabromodiphenyl ether $C_{12}H_5Br_5O$ , hexabromodiphenyl ether $C_{12}H_4Br_6O$ , heptabromodiphenyl ether $C_{12}H_3Br_7O$ and decabromodiphenyl ether $C_{12}Br_{10}O$ : (a) until 29 December 2027, 500 mg/kg; (b) from 30 December 2025 until 28 December 2027, 350 mg/kg, or, if higher, the sum of the concentration of those substances where they are present in mixtures or articles, as set out in the fourth column, point 2, of Annex I for the substances tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether; (c) from 30 December 2027, 200 mg/kg or, if higher, the sum of the concentration of those substances where they are present in mixtures or articles, as set out in the fourth column, point 2, of Annex I for the substances tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether.'
Pentabromodiphenyl ether $C_{12}H_5Br_5O$	32534-81-9 and others	251-084-2 and others	
Hexabromodiphenyl ether $C_{12}H_4Br_6O$	36483-60-0 and others	253-058-6 and others	
Heptabromodiphenyl ether $C_{12}H_3Br_7O$	68928-80-3 and others	273-031-2 and others	
Bis (pentabromophenyl) ether (decabromodiphenyl ether; decaBDE) $C_{12}Br_{10}O$	1163-19-5 and others	214-604-9 and others	

- (d) the row for the substances Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF) is replaced by the following:

Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF) and dioxin-like polychlorinated biphenyls (dl-PCBs)			5 µg/kg <sup>(1)</sup> The Commission shall review that concentration limit and shall, where appropriate, adopt a legislative proposal to lower that value, where such lowering is feasible in accordance with scientific and technical progress, no later than 30 December 2027.
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<sup>(1)</sup> The limit is calculated as the sum of PCDD, PCDF and dl-PCBs according to the toxic equivalency factors (TEFs) set out in Part 2, in the third paragraph, in the table, of Annex V.;

- (e) the row for the substance hexabromocyclododecane is replaced by the following:

Hexabromocyclododecane <sup>(1)</sup>	25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7, 134237-52-8	247-148-4 221-69-5-9	500 mg/kg The Commission shall review that concentration limit and shall, where appropriate, adopt a legislative proposal to lower that value to not higher than 200 mg/kg no later than 30 December 2027.
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<sup>(1)</sup> "Hexabromocyclododecane" means hexabromocyclododecane, 1,2,5,6,9,10-hexabromocyclododecane and its main diastereoisomers: alpha-hexabromocyclododecane, beta-hexabromocyclododecane and gamma-hexabromocyclododecane.;

(2) Part 2 of Annex V is amended as follows:

(a) in the second paragraph, the first column of the table, headed 'Wastes as classified in Decision 2000/532/EC', is amended as follows:

(i) the following text is inserted after '10.01 Wastes from power stations and other combustion plants (except 19)':

'10 01 03: fly ash from peat and untreated wood';

(ii) the following text is inserted after '17 05 03\* Soil and stones containing hazardous substances':

'17 05 04: soil and stones other than those mentioned in 17 05 03';

(iii) the following text is inserted after '19 04 03\* Non-vitrified solid phase':

'20 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS

20 01: separately collected fractions (except 15 01)

20 01 41: wastes from chimney sweeping';

(b) in the second paragraph, the second column of the table, headed 'Maximum concentration limits of substances listed in Annex IV', is amended as follows:

(i) the text 'Polychlorinated dibenzo-p-dioxins and dibenzofurans: 5 mg/kg;' is replaced by the following:

'Polychlorinated dibenzo-p-dioxins and dibenzofurans and dioxin-like polychlorinated biphenyls (dl-PCBs): 5 mg/kg;';

(ii) the text 'Sum of the concentrations of tetrabromodiphenyl ether (C<sub>12</sub>H<sub>6</sub>Br<sub>4</sub>O), pentabromodiphenyl ether (C<sub>12</sub>H<sub>5</sub>Br<sub>5</sub>O), hexabromodiphenyl ether (C<sub>12</sub>H<sub>4</sub>Br<sub>6</sub>O) and heptabromodiphenyl ether (C<sub>12</sub>H<sub>3</sub>Br<sub>7</sub>O): 10 000 mg/kg;' is replaced by the following:

'Sum of the concentrations of tetrabromodiphenyl ether (C<sub>12</sub>H<sub>6</sub>Br<sub>4</sub>O), pentabromodiphenyl ether (C<sub>12</sub>H<sub>5</sub>Br<sub>5</sub>O), hexabromodiphenyl ether (C<sub>12</sub>H<sub>4</sub>Br<sub>6</sub>O), heptabromodiphenyl ether (C<sub>12</sub>H<sub>3</sub>Br<sub>7</sub>O) and decabromodiphenyl ether (C<sub>12</sub>Br<sub>10</sub>O): 10 000 mg/kg;';

(iii) the following text is added after 'Toxaphene: 5 000 mg/kg;':

'Pentachlorophenol, its salts and esters: 1 000 mg/kg;

Dicofol: 5 000 mg/kg;

Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds: 50 mg/kg (PFOA and its salts), 2 000 mg/kg (PFOA-related compounds);

Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds:

50 mg/kg (PFHxS and its salts), 2 000 mg/kg (PFHxS-related compounds).;'

(c) the third paragraph is replaced by the following:

'The maximum concentration limit of polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD and PCDF) and dioxin-like polychlorinated biphenyls (dl-PCBs) shall be calculated according to the following toxic equivalency factors (TEFs):

Toxicity equivalency factors (TEFs) for PCDD, PCDF and dl-PCBs

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
1,2,3,4,6,7,8-HpCDD	0,01

OCDD	0,0003
PCDF	TEF
2,3,7,8-TeCDF	0,1
1,2,3,7,8-PeCDF	0,03
2,3,4,7,8-PeCDF	0,3
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	0,0003
dl-PCBs	TEF
PCB 77	0,0001
PCB 81	0,0003
PCB 105	0,00003
PCB 114	0,00003
PCB 118	0,00003
PCB 123	0,00003
PCB 126	0,1
PCB 169	0,03
PCB 156	0,00003
PCB 157	0,00003
PCB 167	0,00003
PCB 189	0,00003'