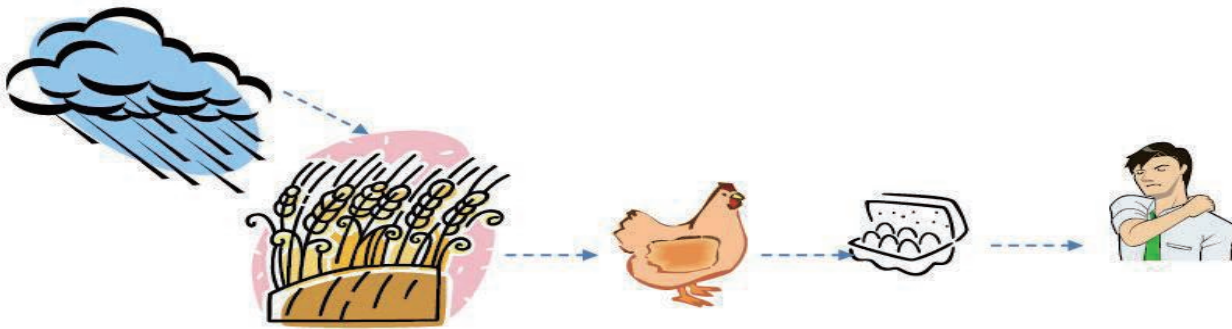




EU POPs Annex I restricted substances list

--(Updated on October 10, 2024)

POPs is short for Persistent Organic Pollutants . The persistent organic pollutants are the natural or artificially synthesized organic pollutants that possess toxic properties, resist degradation, bioaccumulate and are transported, through air, water and migratory species, across international boundaries and deposited far from their place of release, where they accumulate in terrestrial and aquatic ecosystems.



November 2004, EU approved the STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS. From 20 May 2004, EU REGULATION (EC) No 850/2004 came into force, it bans the production, placing on the market and use of the listed substances.

25 June 2019, European Union published new regulation (EU) 2019/1021 on persistent organic pollutants (POPs), replaced previous (EC) No 850/2004. This new regulation was effective on 15 July 2019. On September 27, 2024, the European Commission published two revised regulations on the EU POPs Regulation (EU) 2019/1021 in its official journal, namely (EU) 2024/2555 and (EU) 2024/2570. The revised regulations include reducing the unintentional trace pollutant (UTC) limit for hexabromocyclododecane (HBCDD) from 100 mg/kg to 75 mg/kg, and bringing methoxychlor under control.

Annex I List of Restricted Substances

No.	SUBSTANCE	CAS No	EC No	SPECIFIC EXEMPTION ON INTERMEDIATE USE OR OTHER SPECIFICATION
1	Tetrabromodiphenyl ether C ₁₂ H ₆ Br ₄ O	40088-47-9 and others	254-787-2 and others	1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of Tetrabromodiphenyl ether equal to or below 10 mg/kg (0,001 % by weight) where it is present in substances. 2. For the purposes of the entries on tetra-, penta-, hexa-,





				<p>hepta- and decaBDE, point (b) of Article 4(1) shall apply to the sum of the concentration of those substances up to 500 mg/kg where they are present in mixtures or articles, subject to review and assessment by the Commission by 16 July 2021. This review shall assess, inter alia, all relevant impacts with regard to health and the environment.</p> <p>3. By way of derogation, the manufacturing, placing on the market and use of the following shall be allowed: electrical and electronic equipment within the scope of Directive 2011/65/EC of the European Parliament and of the Council .</p> <p>4. Use of articles already in use in the Union before 25 August 2010 containing Tetrabromodiphenyl ether shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p>
2	<p>Pentabromodiphenyl ether $C_{12}H_5Br_5O$</p>	<p>32534-81-9 and others</p>	<p>251-084-2 and others</p>	<p>1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of pentabromodiphenyl ether equal to or below 10 mg/kg (0,001 % by weight) where it is present in substances.</p> <p>2. For the purposes of the entries on tetra-, penta-, hexa-, hepta- and decaBDE, point (b) of Article 4(1) shall apply to the sum of the concentration of those substances up to 500 mg/kg where they are present in mixtures or articles, subject to review and assessment by the Commission by 16 July 2021. This review shall assess, inter alia, all relevant impacts with regard to health and the environment.</p> <p>3. By way of derogation, the manufacturing, placing on the market and use of the following shall be allowed: electrical and electronic equipment within the scope of Directive 2011/65/EC.</p> <p>4. Use of articles already in use in the Union before 25 August 2010 containing Pentabromodiphenyl ether shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p>
3	<p>Hexabromodiphenyl ether</p>	<p>36483-60-0 and others</p>	<p>253-058-6 and others</p>	<p>1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of hexabromodiphenyl ether equal</p>





	C ₁₂ H ₄ Br ₆ O			<p>to or below 10 mg/kg (0,001 % by weight) where it is present in substances.</p> <p>2. For the purposes of the entries on tetra-, penta-, hexa-, hepta- and decaBDE, point (b) of Article 4(1) shall apply to the sum of the concentration of those substances up to 500 mg/kg where they are present in mixtures or articles, subject to review and assessment by the Commission by 16 July 2021. This review shall assess, inter alia, all relevant impacts with regard to health and the environment.</p> <p>3. By way of derogation, the manufacturing, placing on the market and use of the following shall be allowed: electrical and electronic equipment within the scope of Directive 2011/65/EC.</p> <p>4. Use of articles already in use in the Union before 25 August 2010 containing Hexabromodiphenyl ether shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p>
4	<p>Heptabromodiphenyl ether C₁₂H₃Br₇O</p>	68928-80-3 and others	273-031-2 and others	<p>1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of heptabromodiphenyl ether equal to or below 10 mg/kg (0,001 % by weight) where it is present in substances.</p> <p>2. For the purposes of the entries on tetra-, penta-, hexa-, hepta- and decaBDE, point (b) of Article 4(1) shall apply to the sum of the concentration of those substances up to 500 mg/kg where they are present in mixtures or articles, subject to review and assessment by the Commission by 16 July 2021. This review shall assess, inter alia, all relevant impacts with regard to health and the environment.</p> <p>3. By way of derogation, the manufacturing, placing on the market and use of the following shall be allowed: electrical and electronic equipment within the scope of Directive 2011/65/EC.</p> <p>4. Use of articles already in use in the Union before 25 August 2010 containing Heptabromodiphenyl ether shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p>





5	Bis(pentabromophenyl) ether (decabromodiphenyl ether; decaBDE)	1163-19-5	214-604-9	<ol style="list-style-type: none"> 1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of decaBDE equal to or below 10 mg/kg (0,001 % by weight) where it is present in substances. 2. For the purposes of the entries on tetra-, penta-, hexa-, hepta- and decaBDE, point (b) of Article 4(1) shall apply to the sum of the concentrations of those substances up to 500 mg/kg where they are present in mixtures or articles, subject to review and assessment by the Commission by 16 July 2021. This review shall assess, inter alia, all relevant impacts with regard to health and the environment. 3. By way of derogation, the manufacturing, placing on the market and use of decaBDE shall be allowed for the following purposes, provided that Member States report to the Commission by December 2019 in accordance with the Convention: <ol style="list-style-type: none"> (a) in the manufacturing of an aircraft, for which type approval has been applied for before 2 March 2019 and has been received before December 2022, until 18 December 2023, or, in cases where the continuing need is justified, until 2 March 2027; (b) in the manufacturing of spare parts for either of the following: <ol style="list-style-type: none"> (i) an aircraft, for which type approval has been applied for before 2 March 2019 and has been received before December 2022, produced before 18 December 2023, or, in cases where the continuing need is justified, produced before 2 March 2027, until the end of service life of that aircraft; (ii) motor vehicles within the scope of Directive 2007/46/EC of the European Parliament and of the Council, produced before 15 July 2019, either until 2036 or the end of service life of those motor vehicles, whichever date comes earlier; (c) electric and electronic equipment within the scope of Directive 2011/65/EC.
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				<p>4. The specific exemptions for spare parts for use in motor vehicles referred to in point 2(b)(ii) shall apply for the manufacturing and use of commercial decaBDE falling into one or more of the following categories:</p> <p>(a) powertrain and under-hood applications such as battery mass wires, battery interconnection wires, mobile air condition (MAC) pipes, powertrains, exhaust manifold bushings, under-hood insulation, wiring and harness under-hood (engine wiring, etc.), speed sensors, hoses, fan modules and knock sensors;</p> <p>(b) fuel system applications such as fuel hoses, fuel tanks and fuel tanks under body;</p> <p>(c) pyrotechnical devices and applications affected by pyrotechnical devices such as airbag ignition cables, seat covers/fabrics, only if airbag relevant and airbags (front and side).</p> <p>5. Use of articles already in use before 15 July 2019 in the Union containing decaBDE shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p> <p>6. Without prejudice to the application of other Union provisions on the classification, packaging and labelling of substances and mixtures, articles in which decaBDE is used shall be identifiable by labelling or other means throughout its life cycle.</p> <p>7. The placing on the market and use of articles containing decaBDE imported for the purposes of the specific exemptions in point 2 shall be allowed until the expiry of those exemptions. Point 6 shall apply as if such articles were produced pursuant to the exemption in point 2. Such articles already in use by the date of expiry of the relevant exemption may continue to be used.</p> <p>8. For the purposes of this entry ' aircraft ' means the following:</p> <p>(a) a civil aircraft produced in accordance with a type certificate issued under Regulation (EC) No 216/2008 of</p>
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				<p>the European Parliament and of the Council (3) or with a design approval issued under the national regulations of a contracting state of ICAO, or for which a certificate of airworthiness has been issued by an ICAO Contracting State under Annex 8 to the Convention on International Civil Aviation;</p> <p>(b) a military aircraft.</p>
6	<p>Hexabromocyclododecane</p> <p>'Hexabromocyclododecane' means:</p> <p>hexabromocyclododecane,</p> <p>1,2,5,6,9,10-hexabromocyclododecane and its main diastereoisomers:</p> <p>alpha-hexabromocyclododecane;</p> <p>beta-hexabromocyclododecane; and</p> <p>gamma-hexabromocyclododecane</p>	<p>25637-99-4</p> <p>,</p> <p>3194-55-6,</p> <p>134237-50-6,</p> <p>134237-51-7,</p> <p>134237-52-8</p>	<p>247-148-4,</p> <p>221-695-9</p>	<p>1. For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of hexabromocyclododecane equal to or below 75 mg/kg (0,0075 % by weight) where it is present in substances, mixtures, articles or as constituents of the flame-retarded articles. For the use of recycled polystyrene in the production of EPS and XPS insulation material for use in buildings or civil engineering works, that point (b) shall apply to concentrations of hexabromocyclododecane equal to or below 100 mg/kg (0,01 % by weight). The exemptions laid down in this point (1) shall be reviewed and assessed by the Commission by 1 January 2026.</p> <p>2. Expanded polystyrene articles containing hexabromocyclododecane already in use in buildings before 21 February 2018 in accordance with Commission Regulation (EU) 2016/293 (5) and Commission Implementing Decision No 2016/C 12/06 (6), and extruded polystyrene articles containing hexabromocyclododecane already in use in buildings before 23 June 2016 may continue to be used. Article 4(2), third and fourth subparagraphs shall apply to such articles.</p> <p>3. Without prejudice to the application of other Union provisions on the classification, packaging and labelling of substances and mixtures, expanded polystyrene placed on the market after 23 March 2016 in which hexabromocyclododecane was used shall be identifiable by labelling or other means throughout its life cycle.</p>
7	Hexabromobiphenyl	36355-01-8	252-994-2	/





8	Toxaphene	8001-35-2	232-283-3	/
9	Mirex	2385-85-5	219-196-6	/
10	Aldrin	309-00-2	206-215-8	/
11	Heptachlor	76-44-8	200-962-3	/
12	Dieldrin	60-57-1	200-484-5	/
13	Endrin	72-20-8	200-775-7	/
14	DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)	50-29-3	200-024-3	/
15	Chlordane	57-74-9	200-349-0	/
16	Hexachlorocyclohexanes, including lindane	58-89-9 ; 319-84-6 ; 319-85-7 ; 608-73-1	200-401-2 ; 206-270-8 ; 206-271-3 ; 210-168-9	/
17	Chlordecone	143-50-0	205-601-3	/
18	Endosulfan	115-29-7 959-98-8 33213-65-9	204-079-4	1. Placing on the market and use of articles already in use before or on 10 July 2012 containing endosulfan shall be allowed. 2. Article 4(2), third and fourth subparagraphs shall apply to articles referred to in point 1.
19	Dicofol	115-32-2	204-082-0	None
20	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 the entry into force of this Regulation are allowed to be used. Member States shall identify and remove from use equipment (e.g. transformers, capacitors or other receptacles containing liquid stocks) containing more than 0,005 % PCBs and volumes greater than 0,05 dm ³ , as soon as possible but no later than 31 December 2025.
21	Hexachlorobenzene	118-74-1	204-273-9	For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of hexachlorobenzene equal to or below 10 mg/kg (0,001 % by weight) where it is present in substances, mixtures or articles.
22	Pentachlorobenzene	608-93-5	210-172-0	/





23	Hexachlorobutadiene	87-68-3	201-765-5	<ol style="list-style-type: none"> 1. Placing on the market and use of articles already in use before or on 10 July 2012 containing hexachlorobutadiene shall be allowed. 2. Article 4(2), third and fourth subparagraphs shall apply to articles referred to in point 1.
24	Polychlorinated naphthalenes	70776-03-3 and others	274-864-4 and others	<ol style="list-style-type: none"> 1. Placing on the market and use of articles already in use before or on 10 July 2012 containing polychlorinated naphthalenes shall be allowed. 2. Article 4(2), third and fourth subparagraphs shall apply to articles referred to in point 1.
25	Pentachlorophenol and its salts and esters	87-86-5 and others	201-778-6 and others	For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of pentachlorophenol and its salts and esters equal to or below 5 mg/kg (0,0005 % by weight) where they are present in substances, mixtures or articles.
26	Alkanes C ₁₀ -C ₁₃ , chloro (short-chain chlorinated paraffins) (SCCPs)	85535-84-8 and others	287-476-5	<ol style="list-style-type: none"> 1. By way of derogation, the manufacturing, placing on the market and use of substances or mixtures containing SCCPs in concentrations lower than 1 % by weight or articles containing SCCPs in concentrations lower than 0,15 % by weight shall be allowed. 2. Use shall be allowed in respect of: <ol style="list-style-type: none"> (a) conveyor belts in the mining industry and dam sealants containing SCCPs already in use before or on 4 December 2015; and (b) articles containing SCCPs other than those referred to in point (a) already in use before or on 10 July 2012. 3. The third and fourth subparagraphs of Article 4(2) shall apply to the articles referred to in point 2.
27	Perfluorooctane sulfonic acid and its derivatives (PFOS) C ₈ F ₁₇ SO ₂ X (X = OH, Metal salt (O-M+), halide, amide, and other derivatives including	1763-23-1 2795-39-3 29457-72-5 29081-56-9 70225-14-8 56773-42-3 251099-16-8 4151-50-2	217-179-8 220-527-1 249-644-6 249-415-0 274-460-8 260-375-3 223-980-3 250-665-8 216-887-4	<ol style="list-style-type: none"> 1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of PFOS equal to or below 10 mg/kg (0,001 % by weight) where it is present in substances or in mixtures. 2. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of PFOS in semi-finished products or articles, or parts thereof, if the concentration of PFOS is lower than 0,1 % by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that





	polymers)	31506-32-8 1691-99-2 24448-09-7 307-35-7 and others	246-262-1 206-200-6 and others	<p>contain PFOS or, for textiles or other coated materials, if the amount of PFOS is lower than 1 µg/m² of the coated material.</p> <p>3. Use of articles already in use in the Union before 25 August 2010 containing PFOS shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p> <p>4. If the quantity released into the environment is minimised, manufacturing and placing on the market shall be allowed until 7 September 2025 for use as mist suppressant for non-decorative hard chromium (VI) plating in closed loop systems. Provided that those Member States where PFOS is used report to the Commission by 7 September 2024 on progress made to eliminate PFOS and justify the continuing need for this use, the Commission shall review the need for a prolongation of the derogation for this use of PFOS for a maximum of five years by 7 September 2025.</p> <p>Where such a derogation concerns production or use in an installation within the scope of Directive 2008/1/EC of the European Parliament and of the Council, the relevant best available techniques for the prevention and minimisation of emissions of PFOS described in the information published by the Commission pursuant to Article 17(2), second subparagraph, of Directive 2008/1/EC shall apply.</p> <p>5. Once standards are adopted by the European Committee for Standardisation (CEN) they shall be used as the analytical test methods for demonstrating the conformity of substances, mixtures and articles to points 1 and 2. Any other analytical method for which the user can prove equivalent performance could be used as an alternative to the CEN standards.</p>
28	Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds	335-67-1 and others	206-397-9 and others	<p>1. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of PFOA or any of its salts equal to or below 0,025 mg/kg (0,0000025 % by weight) where they are present in substances, mixtures or articles.</p> <p>2. For the purposes of this entry, point (b) of Article 4(1) shall</p>





				<p>apply to concentrations of any individual PFOA-related compound or a combination of PFOA-related compounds equal to or below 1 mg/kg (0,0001 % by weight) where they are present in substances, mixtures or articles.</p> <p>3. For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of PFOA-related compounds equal to or below 20 mg/kg (0,002 % by weight) where they are present in a substance to be used as a transported isolated intermediate within the meaning of Article 3 point 15(c) of Regulation (EC) No 1907/2006 and fulfilling the strictly controlled conditions set out in Article 18(4)(a) to (f) of that Regulation for the production of fluorochemicals with a carbon chain equal to or shorter than 6 atoms. This exemption shall be reviewed and assessed by the Commission no later than 25 August 2023.</p> <p>4. For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFOA and its salts equal to or below 1 mg/kg (0,0001 % by weight) where they are present in polytetrafluoroethylene (PTFE) micropowders produced by ionising irradiation or by thermal degradation as well as in mixtures and articles for industrial and professional uses containing PTFE micropowders until 18 August 2023. All emissions of PFOA during the manufacture and use of PTFE micropowders shall be avoided and, if not possible, reduced as far as possible. The limit of 1 mg/kg (0,0001 % by weight) shall apply only to manufacture, placing on the market and use of PFOA and its salts where they are present in PTFE micropowders that are transported or treated for the purpose to reduce the concentration of PFOA and its salts below the limit of 0,025 mg/kg (0,0000025 % by weight).</p> <p>5. By way of derogation, the manufacturing, placing on the market and use of PFOA, its salts and PFOA-related compounds shall be allowed for the following purposes: (a) photolithography or etch processes in semiconductor manufacturing, until 4 July 2025;</p>
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				<p>(b) photographic coatings applied to films, until 4 July 2025;</p> <p>(c) textiles for oil- and water-repellency for the protection of workers from dangerous liquids that comprise risks to their health and safety, until 4 July 2023;</p> <p>(d) invasive and implantable medical devices, until 4 July 2025;</p> <p>6. By way of derogation, the use of PFOA, its salts and PFOA-related compounds shall be allowed in fire-fighting foam for liquid fuel vapour suppression and liquid fuel fire (Class B fires) already installed in systems, including both mobile and fixed systems, until 4 July 2025, subject to the following conditions:</p> <p>(a) fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall not be used for training;</p> <p>(b) fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall not be used for testing unless all releases are contained;</p> <p>(c) as from 1 January 2023, uses of fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall only be allowed in sites where all releases can be contained;</p> <p>(d) fire-fighting foam stockpiles that contain or may contain PFOA, its salts and/or PFOA-related compounds shall be managed in accordance with Article 5.</p> <p>7. By way of derogation, the use of perfluorooctyl bromide containing perfluorooctyl iodide for the purpose of producing pharmaceutical products shall be allowed, subject to review and assessment by the Commission by 31 December 2026, every four years thereafter and by 31 December 2036.</p> <p>8. Use of articles already in use in the Union before 4 July 2020 containing PFOA, its salts and/or PFOA-related compounds shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles.</p>
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				<p>9. By way of derogation, the use of PFOA, its salts and/or PFOA-related compounds shall be allowed until 3 December 2020 in the following articles:</p> <p>(a) medical devices other than implantable ones, within the scope of Regulation (EU) 2017/745 ;</p> <p>(b) latex printing inks;</p> <p>(c) plasma nano-coatings.</p>
29	<p>Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds</p> <p>“Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds” means the following:</p> <p>(i) perfluorohexane sulfonic acid, including any of its branched isomers;</p> <p>(ii) its salts;</p> <p>(iii) PFHxS-related compounds which, for the purposes of the Convention, are any substance that contains the chemical moiety C₆F₁₃S- as one of its structural</p>	355-46-4 and others	206-587-1 and others	<p>1. For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFHxS or any of its salts equal to or below 0,025 mg/kg (0,000025 % by weight) where they are present in substances, mixtures or articles.</p> <p>2. For the purposes of this entry, Article 4(1), point (b), shall apply to the sum of concentrations of all PFHxS-related compounds equal to or below 1 mg/kg (0,0001 % by weight) where they are present in substances, mixtures or articles.</p> <p>3. For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFHxS, its salts and PFHxS-related compounds equal to or below 0,1 mg/kg (0,00001 % by weight) where it is present in concentrated firefighting foam mixtures that are to be used or are used in the production of other firefighting foam mixtures. This exemption shall be reviewed and assessed by the Commission no later than 28 August 2026.’</p>





	elements and that degrades to PFHxS.			
30	Methoxychlor 'Methoxychlor' refers to any possible isomer of dimethoxydiphenyl trichloroethane or any combination thereof.	72-43-5 30667-99-3 76733-77-2 255065-25-9 255065-26-0 59424-81-6 1348358-72-4 and others	200-779-9	For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of methoxychlor equal to or below 0,01 mg/kg (0,000001 % by weight) where they are present in substances, mixtures or articles.

