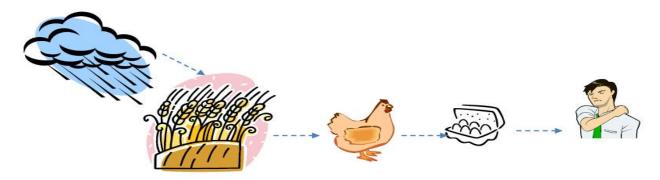
Consumer Products HCT-202305-03

EU POPs Annex I restricted substances list

---(Update on August 11, 2023)

POPs is short for Persistant 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 August 8, 2023, the European Commission published a revised regulation (EU) 2023/1608 of the EU POPs Regulation (EU) 2019/1021 in its official gazette, officially listing PFHxS, its salts, and related substances on the list of prohibited substances in Annex I of the EU POPs Regulation.

Annex I List of Restricted Substances

| No. | SUBSTANCE | CAS No | EC No | SPECIFIC EXEMPTION ON INTERMEDIATE USE OR OTHER SPECIFICATION |
|-----|------------------------------------|--------------------------|-------------------------|---|
| 1 | Tetrabromodiphenyl ether C12H6Br4O | 40088-47-9 and others | 254-787-2 and others | 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. 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 |





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| 2 | Pentabromodiphenyl ether C12H5Br5O | 32534-81-9 and others | 251-084-2 and others | assessment by the Commission by 16 July 2022 shall assess, inter alia, all relevant impacts with reand the environment. By way of derogation, the manufacturing, placing and use of the following shall be allowed: electrical and electronic equipment within the scor 2011/65/EC of the European Parliament and of the Use of articles already in use in the Union before 2 containing Tetrabromodiphenyl ether shall be all 4(2), third and fourth subparagraphs shall apply such articles. For the purposes of this entry, point (b) of Article 4 to concentrations of pentabromodiphenyl ether equal 10 mg/kg (0,001 % by weight) where it is present in For the purposes of the entries on tetra-, penta-, and decaBDE, point (b) of Article 4(1) shall apply the concentration of those substances up to 500 they are present in mixtures or articles, subject assessment by the Commission by 16 July 2022 shall assess, inter alia, all relevant impacts with reand the environment. By way of derogation, the manufacturing, placing and use of the following shall be allowed: | on the market on the control on the contr |
| | | | | and use of the following shall be allowed: electrical and electronic equipment within the scor 2011/65/EC. Use of articles already in use in the Union before 2 containing Pentabromodiphenyl ether shall be a 4(2), third and fourth subparagraphs shall apply such articles. | 5 August 2010 Ilowed. Article |
| 3 | Hexabromodiphenyl ether C12H4Br6O | 36483-60-0 and others | 253-058-6 and others | For the purposes of this entry, point (b) of Article 4 to concentrations of hexabromodiphenyl ether equal 10 mg/kg (0,001 % by weight) where it is present in For the purposes of the entries on tetra-, penta-, and decaBDE, point (b) of Article 4(1) shall apply the concentration of those substances up to 500 they are present in mixtures or articles, subject assessment by the Commission by 16 July 202 shall assess, inter alia, all relevant impacts with reand the environment. By way of derogation, the manufacturing, placing and use of the following shall be allowed: electrical and electronic equipment within the scot 2011/65/EC. Use of articles already in use in the Union before 2 | all to or below in substances. hexa-, heptato the sum of img/kg where to review and 1. This review egard to health on the market on the market |



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| | | | | containing Hexabromodiphenyl ether shall be allowed. Article 4(2), third and fourth subparagraphs shall apply in relation to such articles. |
| 4 | Heptabromodiphenyl ether C12H3Br7O | 68928-80-3 and others | 273-031-2 and others | 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. 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. 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. 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. |
| 5 | Bis(pentabromophen yl) ether (decabromodiphenyl ether; decaBDE) | 1163-19-5 | 214-604-9 | 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. 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. 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: (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: |



- 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.
- 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:
 - (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 wiling, etc.), speed sensors, hoses, fan modules and knock sensors;
 - (b) fuel system applications such as fuel hoses, fuel tanks and fuel tanks under body;
 - (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).
- 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.
- 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.
- 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.
- 8. For the purposes of this entry 'aircraft' means the following:
 - (a) a civil aircraft produced in accordance with a type certificate issued under Regulation (EC) No 216/2008 of 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;



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| | | | | (b) a military aircraft. |
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| 6 | 1Hexabromocyclodo decane 'Hexabromocyclodo decane' means: hexabromocyclodod ecane, 1,2,5,6,9,10-hexabro mocyclododecane and its main diastereoisomers: alpha-hexabromocyclododecane; beta-hexabromocyclododecane; and gamma-hexabromocyclododecane | 25637-99-4, 3194-55-6, 134237-50- 6, 134237-51- 7, 134237-52- 8 | 247-148-4, 221-695-9 | For the purposes of this entry, point (b) of Article 4(1) shall apply to concentrations of hexabromocyclododecane equal to or below 100 mg/kg (0,01 % by weight) where it is present in substances, mixtures, articles or as constituents of the flame-retarded articles, subject to review by the Commission by 22 March 2019. 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. 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. |
| 7 | Hexabromobiphenyl | 36355-01-8 | 252-994-2 | 1 |
| 8 | Toxaphene | 8001-35-2 | 232-283-3 | 1 |
| 9 | Mirex | 2385-85-5 | 219-196-6 | 1 |
| 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 | 1 |
| 14 | DDT (1,1,1-trichloro-2,2-bi s(4-chlorophenyl)eth ane) | 50-29-3 | 200-024-3 | |
| 15 | Chlordane | 57-74-9 | 200-349-0 | / |
| 16 | Hexachlorocyclohex anes, 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 | Placing on the market and use of articles already in use before or on 10 July 2012 containing endosulfan shall be allowed. 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 | 1336-36-3 | 215-648-1 | Without prejudice to Directive 96/59/EC, articles already in use at the |



OH,

Metal

salt 70225-14-8

274-460-8

to concentrations of PFOS in semi-finished products or articles,

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| | Biphenyls (PCB) | and others | and others | 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 dm³, 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 | 1 |
| 23 | Hexachlorobutadi ene | 87-68-3 | 201-765-5 | Placing on the market and use of articles already in use before or on 10 July 2012 containing hexachlorobutadiene shall be allowed. 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 | Placing on the market and use of articles already in use before or on 10 July 2012 containing polychlorinated naphthalenes shall be allowed. 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 | 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. Use shall be allowed in respect of: (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. 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) C8F17SO2X (X = | 1763-23-1 2795-39-3 29457-72-5 29081-56-9 | 217-179-8 220-527-1 249-644-6 249-415-0 | 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. For the purposes of this entry, point (b) of Article 4(1) shall apply |



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| | (O-M+), halide, | 56773-42-3 | 260-375-3 | | or parts thereof, if the concentration of PFOS is lower than 0,1 % |
|----|-----------------------|-------------|------------|----|---|
| | amide, and other | 251099-16- | 223-980-3 | | by weight calculated with reference to the mass of structurally or |
| | derivatives including | 8 4151-50-2 | 250-665-8 | | micro-structurally distinct parts that contain PFOS or, for textiles |
| | polymers) | 31506-32-8 | 216-887-4 | | or other coated materials, if the amount of PFOS is lower than 1 |
| | | 1691-99-2 | 246-262-1 | | μg/m2 of the coated material. |
| | | 24448-09-7 | 206-200-6 | 3. | Use of articles already in use in the Union before 25 August 2010 |
| | | 307-35-7 | and others | | containing PFOS shall be allowed. Article 4(2), third and fourth |
| | | and others | | | subparagraphs shall apply in relation to such articles. |
| | | | | 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. |
| | | | | | 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. |
| | | | | 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. |
| | | | | 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. |
| | Perfluorooctanoic | | | 2. | For the purposes of this entry, point (b) of Article 4(1) shall apply |
| | acid (PFOA), its | 335-67-1 | 206-397-9 | | to concentrations of any individual PFOA-related compound or a |
| 28 | salts and | and others | and others | | combination of PFOA-related compounds equal to or below 1 |
| | PFOA-related | | | | mg/kg (0,0001 % by weight) where they are present in |
| | compounds | | | | substances, mixtures or articles. |
| | | | | 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.
- 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).
- 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;
 - (b) photographic coatings applied to films, until 4 July 2025;
 - (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;
 - (d) invasive and implantable medical devices, until 4 July 2025;
- 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:
 - (a) fire-fighting foam that contains or may contain PFOA, its salts and/or PFOA-related compounds shall not be used for training;
 - (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;
 - (c) as from 1 January 2023, uses of fire-fighting foam that



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| | | | | contains or may contain PFOA, its salts and/or PFOA-related compounds shall only be allowed in sites where all releases can be contained; (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. 7. By way of derogation, the use of perfluooroctyl bromide containing perfluoroctyl 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. 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. 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: (a) medical devices other than implantable ones, within the scope of Regulation (EU) 2017/745; (b) latex printing inks; (c) plasma nano-coatings. |
| | Perfluorohexane sulfonic acid | 355-46-4 | 206-587-1 | 1. For the purposes of this entry, Article 4(1), point (b), shall apply to |
| | (PFHxS), its salts | and others | and others | concentrations of PFHxS or any of its salts equal to or below 0,025 mg/kg (0,0000025 % by weight) where they are present in |
| | and PFHxS-related | | | substances, mixtures or articles. |
| | compounds | | | 2. For the purposes of this entry, Article 4(1), point (b), shall apply to |
| | "Perfluorohexane | | | the sum of concentrations of all PFHxS-related compounds equal to |
| | sulfonic acid | | | or below 1 mg/kg (0,0001 % by weight) where they are present in |
| <mark>29</mark> | (PFHxS), its salts | | | substances, mixtures or articles. |
| | and PFHxS-related | | | 3. For the purposes of this entry, Article 4(1), point (b), shall apply to |
| | compounds" means | | | concentrations of PFHxS, its salts and PFHxS-related compounds |
| | the following: | | | equal to or below 0,1 mg/kg (0,00001 % by weight) where it is |
| | (i) perfluorohexane | | | present in concentrated firefighting foam mixtures that are to be used |
| | sulfonic acid, | | | or are used in the production of other firefighting foam mixtures. This |
| | including any of its | | | exemption shall be reviewed and assessed by the Commission no |
| | branched isomers; | | | later than 28 August 2026.' |



(ii) its salts;
(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
elements and that
degrades to
PFHxS.

Contact us:

Shenzhen Hongcai testing technology co., LTD. (HCT)

Web: http://www.hct-test.com/

Hotline: 400-0066-989T: (86) 755 8416666

Email: service@hct-test.com

Add: 1st, 2nd, and 3rd Floor, No. 30-9 Rhein Road,

Xinsheng Community, Longgang Street, Longgang District,

Shenzhen, Guangdong

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