



< KUBOTA Group Green Procurement Guidelines Appendix >

# **Substances of Concern List**

**January 2024**

**KUBOTA Corporation**

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## Introduction

This document is for providing information related to "3. Substances of Concern" of "Eco-friendliness standards for products" specified in "KUBOTA Group Green Procurement Guidelines" revised on January 2024.

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| * We prohibit the use of asbestos regardless of the concentrations, regardless of the laws or regulations or others.   |                          |   |  |     |
| <b>Table 2 : Substances to be Restricted</b><br>Substances to be Restricted means the substances which should not be contained in the products nor used in the production process under the certain conditions or applications. They are to be reduced gradually the content and use with the time limit and the target and to be promoted the substitution. | 1                        | RoHS  | ANNEX II   | p7  |
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## [Disclaimer]

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## [Revision History]

| Date of revision | Table Number  | Revision   |
|------------------|---|--|
| 2024.1.1         | Table1-5.   | Added substances that have been decided to be eliminated under the Stockholm Convention on persistent organic pollutants to the list of prohibited substances.   |
|                  | Table2-3.   | Additions and reviews were made as a consequence of the amendment to the REACH Annex XVII (Restricted substances). Entry numbers for each substance in the REACH Annex XVII were added.  |
| 2023.1.1         | Table2-4. TSCA PBT Chemicals<br>Table 1: Prohibited                             | Phase-in Prohibition for PIP (3:1) was revised according to the Federal Register (87 FR 12875)03/08/2022.<br>"2,2,2-Trichloro-1- (2-chlorophenyl) -1- (4-chlorophenyl) ethanol" and "PFOA's salt" were added as a consequence of the amendment to the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. |
| 2022.1.1         | Table1-5. EU Regulation- on persistent organic pollutants (EC)                  | Addition of CAS No.<br>Addition of "Dicofol."  |
|                  | Table1-6. Other substances specified independently by KUBOTA Group              | Addition of CAS No.  |
|                  | Table2-3. REACH Annex XVII, substances restricted to use in articles            | Addition of CAS No.  |
|                  | Table2-4. TSCA PBT Chemicals  | Additions were made TSCA PBT substance as Substances to be Restricted.   |
|                  | Attached Table I-A,B: RoHS exemptions list Annex III, IV                        | Reflected until March 5, 2020 Promulgation Committee Directive (EU) 2020/366 and January 15, 2021 Promulgation Committee Directive (EU) 2021/647.  |
| 2021.1.1         | Table 1: Prohibited   | Addition of "PFOA"   |
|                  | Table 2: Restricted<br>Attached Table I-A,B: RoHS exemptions list Annex III, IV | Additions and reviews were made as a consequence of the amendment to the REACH Annex XVII (Restricted substances).<br>Amended as Commission Regulation 2020/364/EU of 5 March 2020 and application for extension submitted between November 2019 and January 2020.   |
| 2020.1.1         | Table 1: Prohibited<br>Table 2: Restricted                                      | Changed to list of substances by legislation and protocol.   |
|                  | Attached Table I-A: RoHS exemptions list<br>Table 3: Controlled                 | Amended as Commission Regulation 2019/178/EU of 5 February 2019.<br>Annex IV to the European CLP Regulation CMR Categories 1 and 2 were excluded.  |
| 2019.1.1         | Table 1: Prohibited   | Added the CAS number of "6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3- benzodioxathiepin 3-oxide."<br>Changed "chlorinated paraffin" to "polychlorinated normal paraffin" and added CAS numbers and related laws.<br>Added "1,1'-oxybis(2,3,4,5,6-pentabromobenzene)."   |
|                  | Table 2: Restricted   | Additions were made as a consequence of the amendment to the REACH Annex XVII (Restricted substances).<br>Example substances were added based on the EU Mercury Regulation (EU 2017/852).  |
|                  | Attached Table I-A: RoHS exemptions list  | Revised as a result of the amendment of the law.   |
|                  | Reference document: List of banned, restricted, or controlled                   | Changed "substances subject to JAMP" to "substances subject to chemSHERPA."  |
| 2018.1.1         | Table 2: Restricted   | Revised due to enactment of Minamata Convention on Mercury   |
|                  | Attached Table I-A : RoHS Exemptions List                                       | Revised due to legislative amendments  |
| 2017.1.1         | Table 1: Prohibited   | - Addition of "Pentachlorophenol or its chloride or ester"<br>- Addition of CAS number and Related laws and ordinances of "Hexabromocyclododecane"<br>- Change the chlorine number of "Polychlorinated naphthalene".   |
|                  | Attached Table I-B : ELV Exemptions List  | Delete   |
| 2016.1.1         | Table 1: Prohibited   | Addition of "Endosulfan", "HBCD", "Chloroalkane C10-13" etc.   |
|                  | Table 2: Restricted   | Addition of restricted substance group accompanying revised RoHS Directive.<br>Addition of due to revision of REACH Regulation Annex XVII (Restricted Substances).   |
| 2014.7.1         | Attached Table I-B : ELV Exemptions List  | Amended as Commission Regulation 2013/86/EU of 22 May 2013.  |
|                  | Reference List of Substances to be Prohibited, Restricted and                   | Amended as the revised related rules and JAMP Declarable Substances Reference List.  |
| 2009.4.1         | -   | Established the Appendix "Substances of Concern List" to the "Kubota Group Green Procurement Guidelines."  |

Table 1 : Substances to be Prohibited

Following substances should not be contained in the products nor used in the production process. The content as impurities should be less than 0.1 percent by weight per homogeneous material.

Table1-1. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc./ Class I Specified Chemical Substances

| No. | Substance Name   | Synonym                              |
|-----|--|--------------------------------------|
| 1   | Polychlorinated biphenyls  |                                      |
| 2   | Polychlorinated naphthalenes (limited to those containing two or more chlorine atoms)  |                                      |
| 3   | Hexachlorobenzene  |                                      |
| 4   | 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthalene  | Aldrin                               |
| 5   | 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-exo-1,4-endo-5,8-dimethanonaphthalene   | Dieldrin                             |
| 6   | 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo-1,4-endo-5,8-dimethanonaphthalene  | Endrin                               |
| 7   | 1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane  | DDT                                  |
| 8   | mixture of 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene and their analogue compounds | Chlordane, Heptachlor                |
| 9   | Bis(tributyltin) oxide   |                                      |
| 10  | N,N'-Ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylenediamine, or N,N'-dixylyl-p-phenylenediamine   |                                      |
| 11  | 2,4,6-Tri-tert-butylphenol   |                                      |
| 12  | Polychloro-2,2-dimethyl-3-methylidenebicyclo[2.2.1]heptane   | Toxaphene                            |
| 13  | Dodecachloropentacyclo[5.3.0.0(2,6).0(3,9).0(4,8)]decane   | Mirex                                |
| 14  | 2,2,2-Trichloro-1-(2-chlorophenyl)-1-(4-chlorophenyl)ethanol or 2,2,2-Trichloro-1,1-bis(4-chlorophenyl) ethanol  | Kelthane, Dicofol                    |
| 15  | Hexachlorobuta-1,3-diene   |                                      |
| 16  | 2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-butylphenol   |                                      |
| 17  | Perfluoro(octane-1-sulfonic acid) or its salts   | PFOS                                 |
| 18  | Perfluoro(octane-1-sulfonyl) fluoride  | PFOSF                                |
| 19  | Pentachlorobenzene   |                                      |
| 20  | r-1,c-2,t-3,c-4,t-5,t-6-Hexachlorocyclohexane  | alpha-Hexachlorocyclohexane          |
| 21  | r-1,t-2,c-3,t-4,c-5,t-6-Hexachlorocyclohexane  | beta-Hexachlorocyclohexane           |
| 22  | r-1,c-2,t-3,c-4,c-5,t-6-Hexachlorocyclohexane  | gamma-Hexachlorocyclohexane, Lindane |
| 23  | Decachloropentacyclo[5.3.0.0(2,6).0(3,9).0(4,8)]decan-5-one  | Chlordecone                          |
| 24  | Hexabromobiphenyl  |                                      |
| 25  | Tetrabromo(phenoxybenzene)   | Tetrabromodiphenyl ether             |
| 26  | Pentabromo(phenoxybenzene)   | Pentabromodiphenyl ether             |
| 27  | Hexabromo(phenoxybenzene)  | Hexabromodiphenyl ether              |
| 28  | Heptabromo(phenoxybenzene)   | Heptabromodiphenyl ether             |
| 29  | 6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3-oxide   | Endosulfan or Benzoepin              |
| 30  | Hexabromocyclododecane   |                                      |
| 31  | Pentachlorophenol or its chloride or ester   |                                      |
| 32  | Polychlorinated normal paraffin (limited to those with the number of carbon atoms is 10 to 13 and the content of chlorine is over 48% of the total weight)                             |                                      |
| 33  | 1,1'-oxybis(2,3,4,5,6-pentabromobenzene)   | Decabromodiphenyl oxide              |
| 34  | Perfluorooctanoic acid (Synonym: PFOA) or its salt   |                                      |

Table1-2. Poisonous and Deleterious Substances Control Law of Japan/ Poisonous Substances

| No. | Substance Name  | Synonym |
|-----|---|---------|
| 1   | Octamethyl pyrophosphoramidate  |         |
| 2   | Tetraalkyl lead   |         |
| 3   | Diethyl paranitrophenyl thiophosphate                                       |         |
| 4   | Dimethylethylmercaptoethyl thiophosphate                                    |         |
| 5   | Dimethyl-(diethylamido-1-chlorocrotonyl)-phosphate                          |         |
| 6   | Dimethyl paranitrophenyl thiophosphate                                      |         |
| 7   | Tetraethyl pyrophosphate  |         |
| 8   | Monofluoro acetate  |         |
| 9   | Monofluoroacetamide   |         |
| 11  | Preparations containing Octamethyl pyrophosphoramidate                      |         |
| 12  | Preparations containing Tetraalkyl lead                                     |         |
| 13  | Preparations containing Diethyl paranitrophenyl thiophosphate               |         |
| 14  | Preparations containing Dimethylethylmercaptoethyl thiophosphate            |         |
| 15  | Preparations containing Dimethyl-(diethylamido-1-chlorocrotonyl)-phosphate  |         |
| 16  | Preparations containing Dimethyl paranitrophenyl thiophosphate              |         |
| 17  | Preparations containing Tetraethyl pyrophosphate                            |         |
| 18  | Preparations containing Monofluoro acetate and its salts                    |         |
| 19  | Preparations containing Monofluoroacetamide                                 |         |
| 20  | Preparations containing Aluminium phosphide and its degradation accelerator |         |

Table 1 : Substances to be Prohibited

Following substances should not be contained in the products nor used in the production process. The content as impurities should be less than 0.1 percent by weight per homogeneous material.

**Table1-3. The Industrial Safety and Health Act of Japan/ Substances Subject to Prohibition of Manufacturing, etc.**

| No. | Substance Name   | Synonym |
|-----|--|---------|
| 1   | Yellow phosphorus matches  |         |
| 2   | Benzidine and its salts  |         |
| 3   | 4-aminodiphenyl and its salts  |         |
| 4   | Asbestos<br>(We prohibit the use of asbestos regardless of the concentrations, regardless of the laws or regulations or others.) |         |
| 5   | 4-nitrodiphenyl and its salts  |         |
| 6   | Bis (chloromethyl) ether   |         |
| 7   | Beta-naphthylamine and its salts   |         |
| 8   | Gum containing benzene, in which the volume of contained benzene exceeds 5 % of the solvent (including diluents) of the said gum |         |

**Table1-4. Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures/ Specified Substances (Montreal Protocol Annex A Group I, II, Annex B Group I, II, III, Annex C Group II, III, Annex E Group I)**

| No. | Substance Name                | Synonym     |
|-----|-------------------------------|-------------|
| 1   | Trichlorofluoromethane        | CFC-11      |
| 2   | Dichlorodifluoromethane       | CFC-12      |
| 3   | Trichlorotrifluoroethane      | CFC-113     |
| 4   | Dichlorotetrafluoroethane     | CFC-114     |
| 5   | chloropentafluoroethane       | CFC-115     |
| 6   | Bromochlorodifluoromethane    | Halone-1211 |
| 7   | Bromotrifluoromethane         | Halone-1301 |
| 8   | Dibromotetrafluoroethane      | Halone-2402 |
| 9   | Chlorotrifluoromethane        | CFC-13      |
| 10  | Pentachlorofluoroethane       | CFC-111     |
| 11  | Tetrachlorodifluoroethane     | CFC-112     |
| 12  | Heptachlorofluoropropane      | CFC-211     |
| 13  | Hexachlorodifluoropropane     | CFC-212     |
| 14  | Pentachlorotrifluoropropane   | CFC-213     |
| 15  | Tetrachlorotetrafluoropropane | CFC-214     |
| 16  | Trichloropentafluoropropane   | CFC-215     |
| 17  | Dichlorohexafluoropropane     | CFC-216     |
| 18  | Monochloroheptafluoropropane  | CFC-217     |
| 19  | Carbon tetrachloride          |             |
| 20  | 1,1,1-trichloroethane         |             |
| 21  | Dibromofluoromethane          |             |
| 22  | Bromodifluoromethane          | HBFC-22B1   |
| 23  | Bromofluoromethane            |             |
| 24  | Tetrabromofluoroethane        |             |
| 25  | Tribromodifluoroethane        |             |
| 26  | Dibromotrifluoroethane        |             |
| 27  | Bromotetrafluoroethane        |             |
| 28  | Tribromofluoroethane          |             |
| 29  | Dibromofluoroethane           |             |
| 30  | Bromotrifluoroethane          |             |
| 31  | Dibromofluoroethane           |             |
| 32  | Bromodifluoroethane           |             |
| 33  | Bromofluoroethane             |             |
| 34  | Hexabromofluoropropane        |             |
| 35  | Pentabromodifluoropropane     |             |
| 36  | Tetrabromotrifluoropropane    |             |
| 37  | Tribromotetrafluoropropane    |             |
| 38  | Dibromopentafluoropropane     |             |
| 39  | Bromohexafluoropropane        |             |
| 40  | Pentabromofluoropropane       |             |
| 41  | Tetrabromodifluoropropane     |             |
| 42  | Tribromotrifluoropropane      |             |
| 43  | Dibromotetrafluoropropane     |             |
| 44  | Bromopentafluoropropane       |             |
| 45  | Tetrabromofluoropropane       |             |
| 46  | Tribromodifluoropropane       |             |
| 47  | Dibromotrifluoropropane       |             |
| 48  | Bromotetrafluoropropane       |             |
| 49  | Tribromofluoropropane         |             |
| 50  | Dibromodifluoropropane        |             |

| No. | Substance Name        | Synonym |
|-----|-----------------------|---------|
| 51  | Bromotrifluoropropane |         |
| 52  | Dibromofluoropropane  |         |
| 53  | Bromodifluoropropane  |         |
| 54  | Bromofluoropropane    |         |
| 55  | Bromochloromethane    |         |
| 56  | Methyl bromide        |         |

Table 1 : Substances to be Prohibited

Following substances should not be contained in the products nor used in the production process. The content as impurities should be less than 0.1 percent by weight per homogeneous material.

**Table1-5. Stockholm Convention on persistent organic pollutants and EU Regulation- on persistent organic pollutants (EC)**

| No. | Substance Name   | CAS No   |
|-----|--|--|
| 1   | Tetrabromodiphenyl ether   | 40088-47-9 and others  |
| 2   | Pentabromodiphenyl ether   | 32534-81-9 and others  |
| 3   | Hexabromodiphenyl ether  | 36483-60-0 and others  |
| 4   | Heptabromodiphenyl ether   | 68928-80-3 and others  |
| 5   | Bis(pentabromophenyl) ether (decabromodiphenyl ether; decaBDE)               | 1163-19-5  |
| 6   | Perfluorooctane sulfonic acid and its derivatives (PFOS)                     | 1763-23-1<br>2795-39-3<br>29457-72-5<br>29081-56-9<br>70225-14-8<br>56773-42-3<br>251099-16-8<br>4151-50-2<br>31506-32-8<br>1691-99-2<br>24448-09-7<br>307-35-7 and others |
| 7   | DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)                          | 50-29-3  |
| 8   | Chlordane  | 57-74-9  |
| 9   | Hexachlorocyclohexanes, including lindane                                    | 58-89-9<br>319-84-6<br>319-85-7<br>608-73-1  |
| 10  | Dieldrin   | 60-57-1  |
| 11  | Endrin   | 72-20-8  |
| 12  | Heptachlor   | 76-44-8  |
| 13  | Endosulfan   | 115-29-7<br>959-98-8<br>33213-65-9   |
| 14  | Hexachlorobenzene  | 118-74-1   |
| 15  | Chlordecone  | 143-50-0   |
| 16  | Aldrin   | 309-00-2   |
| 17  | Pentachlorobenzene   | 608-93-5   |
| 18  | Polychlorinated Biphenyls (PCB)  | 1336-36-3 and others   |
| 19  | Mirex  | 2385-85-5  |
| 20  | Toxaphene  | 8001-35-2  |
| 21  | Hexabromobiphenyl  | 36355-01-8   |
| 22  | Hexabromocyclododecane   | 25637-99-4,<br>3194-55-6,<br>134237-50-6,<br>134237-51-7,<br>134237-52-8   |
| 23  | Hexachlorobutadiene  | 87-68-3  |
| 24  | Pentachlorophenol and its salts and esters                                   | 87-86-5 and others   |
| 25  | Polychlorinated naphthalenes   | 70776-03-3 and others  |
| 26  | Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)          | 85535-84-8 and others  |
| 27  | Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds          | 335-67-1 and others  |
| 28  | Dicofol  | 115-32-2   |
| 29  | Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds | 355-46-4,<br>423-50-7,<br>68259-08-5,<br>67584-53-6 and others   |
| 30  | Dechlorane Plus  | 13560-89-9 and others  |
| 31  | Methoxychlor   | 72-43-5 and others   |
| 32  | UV-328   | 25973-55-1   |

**Table1-6. Other substances specified independently by KUBOTA Group**

| No. | Substance Name  | CAS No                 |
|-----|-----------------|------------------------|
| 1   | Carbon nanotube | 308068-56-6 and others |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

**Table2-1. RoHS/ Annex II**

| No. | Substance Name                        | Specified Conditions or Applications   |
|-----|---------------------------------------|--|
| 1   | Lead                                  | <ul style="list-style-type: none"> <li>•Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material.</li> <li>•However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)</li> </ul>   |
| 2   | Mercury                               | <ul style="list-style-type: none"> <li>•Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material.</li> <li>•However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)</li> <li>•Import and export prohibitions of specified products with mercury due to Foreign Exchange and Foreign Trade Control Law Batteries (alkaline manganese button cells): from Dec 31, 2020 onwards, switches and relays: from Dec 31, 2020 onwards, electronic displays: from Jan 1, 2018 onwards, etc.</li> </ul> |
| 3   | Cadmium                               | <ul style="list-style-type: none"> <li>•Should not be contained intentionally or as impurities in concentrations greater than 0.01% by weight per homogeneous material.</li> <li>•However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)</li> </ul>  |
| 4   | Hexavalent chromium                   | <ul style="list-style-type: none"> <li>•Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material.</li> <li>•However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)</li> </ul>   |
| 5   | Polybrominated biphenyls (PBB)        |  |
| 6   | Polybrominated diphenyl ethers (PBDE) |  |
| 7   | Bis(2-ethylhexyl) phthalate (DEHP)    |  |
| 8   | Butyl benzyl phthalate (BBP)          |  |
| 9   | Dibutyl phthalate (DBP)               |  |
| 10  | Diisobutyl phthalate (DIBP)           |  |

**Table2-2. Montreal Protocol/ Annex C Group I**

| No. | Substance Name                            | Synonym    |
|-----|---|------------|
| 1   | Dichlorofluoromethane                     | HCFC-21    |
| 2   | Chlorodifluoromethane                     | HCFC-22    |
| 3   | Chlorofluoromethane                       | HCFC-31    |
| 4   | Tetrachlorofluoroethane                   | HCFC-121   |
| 5   | Trichlorodifluoroethane                   | HCFC-122   |
| 6   | Dichlorotrifluoroethane                   | HCFC-123   |
| 7   | 2,2-Dichloro-1,1,1-trifluoroethane        | HCFC-123   |
| 8   | Chlorotetrafluoroethane                   | HCFC-124   |
| 9   | 2-Chloro-1,1,1,2-tetrafluoroethane        | HCFC-124   |
| 10  | Trichlorofluoroethane                     | HCFC-131   |
| 11  | Dichlorodifluoroethane                    | HCFC-132   |
| 12  | Chlorotrifluoroethane                     | HCFC-133   |
| 13  | Dichlorofluoroethane                      | HCFC-141   |
| 14  | 1,1-Dichloro-1-fluoroethane               | HCFC-141b  |
| 15  | Chlorodifluoroethane                      | HCFC-142   |
| 16  | 1-Chloro-1,1-difluoroethane               | HCFC-142b  |
| 17  | Chlorofluoroethane                        | HCFC-151   |
| 18  | Hexachlorofluoropropane                   | HCFC-221   |
| 19  | Pentachlorodifluoropropane                | HCFC-222   |
| 20  | Tetrachlorotrifluoropropane               | HCFC-223   |
| 21  | Trichlorotetrafluoropropane               | HCFC-224   |
| 22  | Dichloropentafluoropropane                | HCFC-225   |
| 23  | 3,3-Dichloro-1,1,1,2,2-pentafluoropropane | HCFC-225ca |
| 24  | 1,3-Dichloro-1,1,2,2,3-pentafluoropropane | HCFC-225cb |
| 25  | Chlorohexafluoropropane                   | HCFC-226   |
| 26  | Pentachlorofluoropropane                  | HCFC-231   |
| 27  | Tetrachlorodifluoropropane                | HCFC-232   |
| 28  | Trichlorotrifluoropropane                 | HCFC-233   |
| 29  | Dichlorotetrafluoropropane                | HCFC-234   |
| 30  | Chloropentafluoropropane                  | HCFC-235   |
| 31  | Tetrachlorofluoropropane                  | HCFC-241   |
| 32  | Trichlorodifluoropropane                  | HCFC-242   |
| 33  | Dichlorotrifluoropropane                  | HCFC-243   |
| 34  | Chlorotetrafluoropropane                  | HCFC-244   |
| 35  | Trichlorofluoropropane                    | HCFC-251   |
| 36  | Dichlorodifluoropropane                   | HCFC-252   |
| 37  | Chlorotrifluoropropane                    | HCFC-253   |
| 38  | Dichlorofluoropropane                     | HCFC-261   |
| 39  | Chlorodifluoropropane                     | HCFC-262   |
| 40  | Chlorofluoropropane                       | HCFC-271   |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles

| No. | Substance Name  | Specified Conditions or Applications  | Entry numbers in the REACH Annex XVII |
|-----|---|---|---------------------------------------|
| 1   | Polychlorinated terphenyls (PCTs)<br>CAS No 75-01-4             | Shall not be placed on the market, or used:<br>— as substances,<br>— in mixtures, including waste oils, or in equipment, in concentrations greater than 50 mg/kg (0,005 % by weight).   | 1                                     |
| 2   | Organostannic compounds   | <p>1. Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is acting as biocide in free association paint.</p> <p>2. Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture acts as biocide to prevent the fouling by micro-organisms, plants or animals of:</p> <p>(a) all craft irrespective of their length intended for use in marine, coastal, estuarine and inland waterways and lakes;</p> <p>(b) cages, floats, nets and any other appliances or equipment used for fish or shellfish farming;</p> <p>(c) any totally or partly submerged appliance or equipment.</p> <p>3. Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use in the</p> <p>4. Tri-substituted organostannic compounds:</p> <p>(a) Tri-substituted organostannic compounds such as tributyltin (TBT) compounds and triphenyltin (TPT) compounds shall not be used after 1 July 2010 in articles where the concentration in the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin.</p> <p>(b) Articles not complying with point (a) shall not be placed on the market after 1 July 2010, except for articles that were already in use in the Community before that date.</p> <p>5. Dibutyltin (DBT) compounds:</p> <p>(a) Dibutyltin (DBT) compounds shall not be used after 1 January 2012 in mixtures and articles for supply to the general public where the concentration in the mixture or the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin.</p> <p>(b) Articles and mixtures not complying with point (a) shall not be placed on the market after 1 January 2012, except for articles that were already in use in the Community before that date.</p> <p>(c) By way of derogation, points (a) and (b) shall not apply until 1 January 2015 to the following articles and mixtures for supply to the general public:</p> <ul style="list-style-type: none"> <li>— one-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) and adhesives,</li> <li>— paints and coatings containing DBT compounds as catalysts when applied on articles,</li> <li>— soft polyvinyl chloride (PVC) profiles whether by themselves or coextruded with hard PVC,</li> <li>— fabrics coated with PVC containing DBT compounds as stabilisers when intended for outdoor applications,</li> <li>— outdoor rainwater pipes, gutters and fittings, as well as covering material for roofing and façades,</li> </ul> <p>(d) By way of derogation, points (a) and (b) shall not apply to materials and articles regulated under Regulation (EC) No 1935/2004.</p> <p>6. Dioctyltin (DOT) compound:</p> <p>(a) Dioctyltin (DOT) compounds shall not be used after 1 January 2012 in the following articles for supply to, or use by, the general public, where the concentration in the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin:</p> <ul style="list-style-type: none"> <li>— textile articles intended to come into contact with the skin,</li> <li>— gloves,</li> <li>— footwear or part of footwear intended to come into contact with the skin,</li> <li>— wall and floor coverings,</li> <li>— childcare articles,</li> <li>— female hygiene products,</li> <li>— nappies,</li> <li>— two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits).</li> </ul> <p>(b) Articles not complying with point (a) shall not be placed on the market after 1 January 2012, except for articles that were already in use in the Community before that date.</p> | 20                                    |
| 3   | Cadmium and its compounds<br>CAS No 7440-43-9 and its compounds | <p>For the purpose of this entry, the codes and chapters indicated in square brackets are the codes and chapters of the tariff and statistical nomenclature of Common Customs Tariff as established by Council Regulation (EEC) No 2658/87 (1).</p> <p>1. Shall not be used in mixtures and articles produced from the following synthetic organic polymers (hereafter referred to as plastic material):</p> <ul style="list-style-type: none"> <li>— polymers or copolymers of vinyl chloride (PVC) [3904 10] [3904 21]</li> <li>— polyurethane (PUR) [3909 50]</li> <li>— low-density polyethylene (LDPE), with the exception of low-density polyethylene used for the production of coloured masterbatch [3901 10]</li> <li>— cellulose acetate (CA) [3912 11]</li> <li>— cellulose acetate butyrate (CAB) [3912 11]</li> <li>— epoxy resins [3907 30]</li> <li>— melamine-formaldehyde (MF) resins [3909 20]</li> <li>— urea-formaldehyde (UF) resins [3909 10]</li> <li>— unsaturated polyesters (UP) [3907 91]</li> <li>— polyethylene terephthalate (PET) [3907 60]</li> <li>— polybutylene terephthalate (PBT)</li> <li>— transparent/general-purpose polystyrene [3903 11]</li> <li>— acrylonitrile methylmethacrylate (AMMA)</li> <li>— cross-linked polyethylene (VPE)</li> <li>— high-impact polystyrene</li> <li>— polypropylene (PP) [3902 10]</li> </ul> <p>Mixtures and articles produced from plastic material as listed above shall not be placed on the market if the concentration of cadmium (expressed as Cd metal) is equal to or greater than 0,01 % by weight of the plastic material.</p> <p>By way of derogation, the second subparagraph shall not apply to articles placed on the market before 10 December 2011.<br/>The first and second subparagraphs apply without prejudice to Council Directive 94/62/EC (13) and acts adopted on its basis.<br/>By 19 November 2012, in accordance with Article 69, the Commission shall ask the European Chemicals Agency to prepare a dossier conforming to the requirements of Annex XV in order to assess whether the use of cadmium and its compounds in plastic material, other than that listed in subparagraph 1, should be restricted.</p> <p>2. Shall not be used or placed on the market in paints with codes [3208 ] [3209 ] in a concentration (expressed as Cd metal) equal to or greater than 0,01 % by weight.</p> <p>For paints with codes [3208 ] [3209 ] with a zinc content exceeding 10 % by weight of the paint, the concentration of cadmium (expressed as Cd metal) shall not be equal to or greater than 0,1 % by weight.</p> <p>Painted articles shall not be placed on the market if the concentration of cadmium (expressed as Cd metal) is equal to or greater than 0,1 % by weight of the paint on the painted article. *</p> <p>3. By way of derogation, paragraphs 1 and 2 shall not apply to articles coloured with mixtures containing cadmium for safety reasons.</p>  | 23                                    |



Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles


| No. | Substance Name   | Specified Conditions or Applications  | Entry numbers in the REACH Annex XVII |
|-----|--|---|---------------------------------------|
| 3   | Cadmium and its compounds<br>CAS No 7440-43-9 and its compounds<br>(Continued) | <p>4. By way of derogation, paragraph 1, second subparagraph shall not apply to:</p> <ul style="list-style-type: none"> <li>— mixtures produced from PVC waste, hereinafter referred to as 'recovered PVC',</li> <li>— mixtures and articles containing recovered PVC if their concentration of cadmium (expressed as Cd metal) does not exceed 0,1 % by weight of the plastic material in the following rigid PVC applications:</li> </ul> <p>—</p> <ul style="list-style-type: none"> <li>(a) profiles and rigid sheets for building applications;</li> <li>(b) doors, windows, shutters, walls, blinds, fences, and roof gutters;</li> <li>(c) decks and terraces;</li> <li>(d) cable ducts;</li> <li>(e) pipes for non-drinking water if the recovered PVC is used in the middle layer of a multilayer pipe and is entirely covered with a layer of newly produced PVC in compliance with paragraph 1 above.</li> </ul> <p>Suppliers shall ensure, before the placing on the market of mixtures and articles containing recovered PVC for the first time, that these are visibly, legibly and indelibly marked as follows: 'Contains recovered PVC' or with the following pictogram:</p> <div style="text-align: center;">  </div> <p>In accordance with Article 69 of this Regulation, the derogation granted in paragraph 4 will be reviewed, in particular with a view to reducing the limit value for cadmium and to reassess the derogation for the applications listed in points (a) to (e), by 31 December 2017.</p> <p>5. For the purpose of this entry, 'cadmium plating' means any deposit or coating of metallic cadmium on a metallic surface.</p> <p>Shall not be used for cadmium plating metallic articles or components of the articles used in the following sectors/applications:</p> <ul style="list-style-type: none"> <li>(a) equipment and machinery for:                         <ul style="list-style-type: none"> <li>— food production [8210] [8417 20] [8419 81] [8421 11] [8421 22] [8422] [8435] [8437] [8438] [8476 11]</li> <li>— agriculture [8419 31] [8424 81] [8432] [8433] [8434] [8436]</li> <li>— cooling and freezing [8418]</li> <li>— printing and book-binding [8440] [8442] [8443]</li> </ul> </li> <li>(b) equipment and machinery for the production of:                         <ul style="list-style-type: none"> <li>— household goods [7321] [8421 12] [8450] [8509] [8516]</li> <li>— furniture [8465] [8466] [9401] [9402] [9403] [9404]</li> <li>— sanitary ware [7324]</li> <li>— central heating and air conditioning plant [7322] [8403] [8404] [8415]</li> </ul> </li> </ul> <p>In any case, whatever their use or intended final purpose, the placing on the market of cadmium-plated articles or components of such articles used in the sectors/applications listed in points (a) and (b) above and of articles manufactured in the sectors listed in point (b) above is prohibited.</p> <p>6. The provisions referred to in paragraph 5 shall also be applicable to cadmium-plated articles or components of such articles when used in the sectors/applications listed in points (a) and (b) below and to articles manufactured in the sectors listed in (b) below:</p> <ul style="list-style-type: none"> <li>(a) equipment and machinery for the production of:                         <ul style="list-style-type: none"> <li>— paper and board [8419 32] [8439] [8441] [8444] [8445] [8447] [8448] [8449] [8451] [8452]</li> </ul> </li> <li>(b) equipment and machinery for the production of:                         <ul style="list-style-type: none"> <li>— industrial handling equipment and machinery [8425] [8426] [8427] [8428] [8429] [8430] [8431]</li> <li>— road and agricultural vehicles [chapter 87]</li> <li>— rolling stock [chapter 86]</li> <li>— vessels [chapter 89]</li> </ul> </li> </ul> <p>7. However, the restrictions in paragraphs 5 and 6 shall not apply to:</p> <ul style="list-style-type: none"> <li>— articles and components of the articles used in the aeronautical, aerospace, mining, offshore and nuclear sectors whose applications require high safety standards and in safety devices in road and agricultural vehicles, rolling stock and vessels,</li> <li>— electrical contacts in any sector of use, where that is necessary to ensure the reliability required of the apparatus on which they are installed.</li> </ul> <p>8. Shall not be used in brazing fillers in concentration equal to or greater than 0,01 % by weight.<br/>                     Brazing fillers shall not be placed on the market if the concentration of cadmium (expressed as Cd metal) is equal to or greater than 0,01 % by weight.<br/>                     For the purpose of this paragraph brazing shall mean a joining technique using alloys and undertaken at temperatures above 450 °C.</p> <p>9. By way of derogation, paragraph 8 shall not apply to brazing fillers used in defence and aerospace applications and to brazing fillers used for safety reasons.</p> <p>10. Shall not be used or placed on the market if the concentration is equal to or greater than 0,01 % by weight of the metal in:</p> <ul style="list-style-type: none"> <li>(i) metal beads and other metal components for jewellery making;</li> <li>(ii) metal parts of jewellery and imitation jewellery articles and hair accessories, including:                         <ul style="list-style-type: none"> <li>— bracelets, necklaces and rings,</li> <li>— piercing jewellery,</li> <li>— wrist-watches and wrist-wear,</li> <li>— brooches and cufflinks.</li> </ul> </li> </ul> <p>11. By way of derogation, paragraph 10 shall not apply to articles placed on the market before 10 December 2011 and jewellery more than 50 years old on 10 December 2011.</p> | 23                                    |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles

| No. | Substance Name   | Specified Conditions or Applications  | Entry numbers in the REACH Annex XVII |
|-----|--|---|---------------------------------------|
| 4   | Azocolourants and Azodyes  | <p>1. Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the aromatic amines listed in Appendix 8, in detectable concentrations, i.e. above 30 mg/kg (0,003 % by weight) in the articles or in the dyed parts thereof, according to the testing methods listed in Appendix 10, shall not be used, in textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity, such as:</p> <ul style="list-style-type: none"> <li>— clothing, bedding, towels, hairpieces, wigs, hats, nappies and other sanitary items, sleeping bags,</li> <li>— footwear, gloves, wristwatch straps, handbags, purses/wallets, briefcases, chair covers, purses worn round the neck,</li> <li>— textile or leather toys and toys which include textile or leather garments,</li> <li>— yarn and fabrics intended for use by the final consumer.</li> </ul> <p>2. Furthermore, the textile and leather articles referred to in paragraph 1 shall not be placed on the market unless they conform to the requirements set out in that paragraph.</p> <p>3. Azodyes, which are contained in Appendix 9, 'List of azodyes' shall not be placed on the market, or used, as substances, or in mixtures in concentrations greater than 0,1 % by weight, where the substance or the mixture is intended for colouring textile and leather articles.</p>   | 43                                    |
| 5   | Diphenylether, octabromo derivative  | <p>1. Shall not be placed on the market, or used:</p> <ul style="list-style-type: none"> <li>— as a substance,</li> <li>— as a constituent of other substances, or in mixtures, in concentrations greater than 0,1 % by weight.</li> </ul> <p>2. Articles shall not be placed on the market if they, or flame-retardant parts thereof, contain this substance in concentrations greater than 0,1 % by weight.</p> <p>3. By way of derogation, paragraph 2 shall not apply:</p> <ul style="list-style-type: none"> <li>— to articles that were in use in the Community before 15 August 2004,</li> <li>— to electrical and electronic equipment within the scope of Directive 2002/95/EC.</li> </ul>   | 45                                    |
| 6   | <p>Polycyclic-aromatic hydrocarbons (PAH)</p> <p>(a) Benzo[a]pyrene (BaP)<br/>CAS No 50-32-8</p> <p>(b) Benzo[e]pyrene (BeP)<br/>CAS No 192-97-2</p> <p>(c) Benzo[a]anthracene (BaA)<br/>CAS No 56-55-3</p> <p>(d) Chrysen (CHR)<br/>CAS No 218-01-9</p> <p>(e) Benzo[b]fluoranthene (BbFA)<br/>CAS No 205-99-2</p> <p>(f) Benzo[j]fluoranthene (BjFA)<br/>CAS No 205-82-3</p> <p>(g) Benzo[k]fluoranthene (BkFA)<br/>CAS No 207-08-9</p> <p>(h) Dibenzo[a,h]anthracene (DBAhA)<br/>CAS No 53-70-3</p> | <p>1. From 1 January 2010, extender oils shall not be placed on the market, or used for the production of tyres or parts of tyres if they contain:</p> <ul style="list-style-type: none"> <li>— more than 1 mg/kg (0,0001 % by weight) BaP, or,</li> <li>— more than 10 mg/kg (0,001 % by weight) of the sum of all listed PAHs.</li> </ul> <p>The standard EN 16143:2013 (Petroleum products — Determination of content of Benzo(a)pyrene (BaP) and selected polycyclic aromatic hydrocarbons (PAH) in extender oils — Procedure using double LC cleaning and GC/MS analysis) shall be used as the test method for demonstrating conformity with the limits referred to in the first subparagraph.</p> <p>Until 23 September 2016, the limits referred to in the first subparagraph may be regarded as kept, if the polycyclic aromatics (PCA) extract is less than 3 % by weight as measured by the Institute of Petroleum standard IP 346:1998 (Determination of PCA in unused lubricating base oils and asphaltene free petroleum fractions — Dimethyl sulphoxide extraction refractive index method), provided that compliance with the limits of BaP and of the listed PAHs, as well as the correlation of the measured values with the PCA extract, is measured by the manufacturer or importer every six months or after each major operational change, whichever is earlier.</p> <p>2. Furthermore, tyres and treads for retreading manufactured after 1 January 2010 shall not be placed on the market if they contain extender oils exceeding the limits indicated in paragraph 1.</p> <p>These limits shall be regarded as kept, if the vulcanised rubber compounds do not exceed the limit of 0,35 % Bay protons as measured and calculated by ISO 21461 (Rubber vulcanised — Determination of aromaticity of oil in vulcanised rubber compounds).</p> <p>3. By way of derogation, paragraph 2 shall not apply to retreaded tyres if their tread does not contain extender oils exceeding the limits referred to in paragraph 1.</p> <p>4. For the purpose of this entry 'tyres' shall mean tyres for vehicles covered by:</p> <ul style="list-style-type: none"> <li>— Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers ,</li> <li>— Directive 2003/37/EC of the European Parliament and of the Council of 26 May 2003 on type-approval of agricultural or forestry tractors, their trailers and interchangeable towed machinery, together with their systems, components and separate technical units , and</li> <li>— Directive 2002/24/EC of the European Parliament and of the Council of 18 March 2002 relating to the type-approval of two or three-wheel motor vehicles and repealing Council Directive 92/61/EEC .</li> </ul> <p>*M24</p> <p>5. Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 1 mg/kg (0,0001 % by weight of this component) of any of the listed PAHs.</p> <p>Such articles include amongst others:</p> <ul style="list-style-type: none"> <li>— sport equipment such as bicycles, golf clubs, racquets</li> <li>— household utensils, trolleys, walking frames</li> <li>— tools for domestic use</li> <li>— clothing, footwear, gloves and sportswear</li> <li>— watch-straps, wrist-bands, masks, head-bands</li> </ul> <p>6. Toys, including activity toys, and childcare articles, shall not be placed on the market, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 0,5 mg/kg (0,00005 % by weight of this component) of any of the listed PAHs.</p> <p>7. By way of derogation from paragraphs 5 and 6, these paragraphs shall not apply to articles placed on the market for the first time before 27 December 2015.</p> <p>8. By 27 December 2017, the Commission shall review the limit values in paragraphs 5 and 6 in the light of new scientific information, including migration of PAHs from the articles referred to therein, and information on alternative raw materials and, if appropriate, modify these paragraphs accordingly.</p> | 50                                    |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles

| No. | Substance Name  | Specified Conditions or Applications  | Entry numbers in the REACH Annex XVII |
|-----|---|---|---------------------------------------|
| 7   | Following phthalates<br>(a) Bis(2-ethylhexyl) phthalate (DEHP)<br>CAS No.: 117-81-7<br>(b) Dibutyl phthalate (DBP)<br>CAS No.: 84-74-2<br>(c) Benzyl butyl phthalate (BBP)<br>CAS No.: 85-68-7<br>(d) Diisobutyl phthalate (DIBP)<br>CAS No.: 84-69-5   | 1. Shall not be used as substances or in mixtures, individually or in any combination of the phthalates listed in column 1 of this entry, in a concentration equal to or greater than 0,1 % by weight of the plasticised material, in toys and childcare articles.<br><br>2. Shall not be placed on the market in toys or childcare articles, individually or in any combination of the first three phthalates listed in column 1 of this entry, in a concentration equal to or greater than 0,1 % by weight of the plasticised material.<br><br>In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination with the first three phthalates listed in column 1 of this entry, in a concentration equal to or greater than 0,1 % by weight of the plasticised material.<br><br>3. Shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of the phthalates listed in column 1 of this entry, in a concentration equal to or greater than 0,1 % by weight of the plasticised material in the article.<br><br>4. Paragraph 3 shall not apply to:<br>(a) articles exclusively for industrial or agricultural use, or for use exclusively in the open air, provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin;<br><br>(b) aircraft, placed on the market before 7 January 2024, or articles, whenever placed on the market, for use exclusively in the maintenance or repair of those aircraft, where those articles are essential for the safety and airworthiness of the aircraft;<br><br>(c) motor vehicles within the scope of Directive 2007/46/EC, placed on the market before 7 January 2024, or articles, whenever placed on the market, for use exclusively in the maintenance or repair of those vehicles, where the vehicles cannot function as intended without those articles;<br><br>(d) articles placed on the market before 7 July 2020;<br>(e) measuring devices for laboratory use, or parts thereof;<br>(f) materials and articles intended to come into contact with food within the scope of Regulation (EC) No 1935/2004 or Commission Regulation (EU) No 10/2011 (21);<br><br>(g) medical devices within the scope of Directives 90/385/EEC, 93/42/EEC or 98/79/EC, or parts thereof;<br>(h) electrical and electronic equipment within the scope of Directive 2011/65/EU;<br>(i) the immediate packaging of medicinal products within the scope of Regulation (EC) No 726/2004, Directive 2001/82/EC or Directive 2001/83/EC;<br><br>(j) toys and childcare articles covered by paragraphs 1 or 2.<br>5. For the purposes of paragraphs 1, 2, 3 and 4(a),<br>(a) 'plasticised material' means any of the following homogeneous materials:<br>— polyvinyl chloride (PVC), polyvinylidene chloride (PVDC), polyvinyl acetate (PVA), polyurethanes,<br>— any other polymer (including, inter alia, polymer foams and rubber material) except silicone rubber and natural latex coatings,<br>— surface coatings, non-slip coatings, finishes, decals, printed designs,<br>— adhesives, sealants, paints and inks.<br>(b) 'prolonged contact with human skin' means continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day.<br><br>(c) 'childcare article' shall mean any product intended to facilitate sleep, relaxation, hygiene, the feeding of children or sucking on the part of children.<br><br>6. For the purposes of paragraph 4(b), 'aircraft' means one of the following:<br>(a) a civil aircraft produced in accordance with a type certificate issued under Regulation (EC) No 216/2008 or with a design approval issued under the national regulations of a contracting State of the International Civil Aviation Organisation (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, signed on December 7, 1944, in Chicago;<br><br>(b) a military aircraft. | 51                                    |
| 8   | Dimethylfumarate (DMF)<br>CAS No 624-49-7   | Shall not be used in articles or any parts thereof in concentrations greater than 0,1 mg/kg.<br>Articles or any parts thereof containing DMF in concentrations greater than 0,1 mg/kg shall not be placed on the market.  | 61                                    |
| 9   | Phenylmercury compound<br>(a) Phenylmercury acetate<br>CAS No: 62-38-4<br>(b) Phenylmercury propionate<br>CAS No: 103-27-5<br>(c) Phenylmercury 2-ethylhexanoate<br>CAS No: 13302-00-6<br>(d) Phenylmercury octanoate<br>CAS No: 13864-38-5<br>(e) Phenylmercury neodecanoate<br>CAS No: 26545-49-3 | 1. Shall not be manufactured, placed on the market or used as substances or in mixtures after 10 October 2017 if the concentration of mercury in the mixtures is equal to or greater than 0,01 % by weight.<br><br>2. Articles or any parts thereof containing one or more of these substances shall not be placed on the market after 10 October 2017 if the concentration of mercury in the articles or any part thereof is equal to or greater than 0,01 % by weight.  | 62                                    |
| 10  | Inorganic ammonium salts  | Shall not be placed on the market, or used, in cellulose insulation mixtures or cellulose insulation articles after 14 July 2018 unless the emission of ammonia from those mixtures or articles results in a concentration of less than 3 ppm by volume (2,12 mg/m <sup>3</sup> ) under the test conditions.  | 65                                    |
| 11  | Chromium VI compounds   | 1. Cement and cement-containing mixtures shall not be placed on the market, or used, if they contain, when hydrated, more than 2 mg/kg (0,0002 %) soluble chromium VI of the total dry weight of the cement.<br><br>2. If reducing agents are used, then without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of cement or cement-containing mixtures is visibly, legibly and indelibly marked with information on the packing date, as well as on the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium VI below the limit indicated in paragraph 1.<br><br>3. By way of derogation, paragraphs 1 and 2 shall not apply to the placing on the market for, and use in, controlled closed and totally automated processes in which cement and cement-containing mixtures are handled solely by machines and in which there is no possibility of contact with the skin.<br><br>4. The standard adopted by the European Committee for Standardization (CEN) for testing the water-soluble chromium (VI) content of cement and cement-containing mixtures shall be used as the test method for demonstrating conformity with paragraph 1.<br><br>5. Leather articles coming into contact with the skin shall not be placed on the market where they contain chromium VI in concentrations equal to or greater than 3 mg/kg (0,0003 % by weight) of the total dry weight of the leather.<br><br>6. Articles containing leather parts coming into contact with the skin shall not be placed on the market where any of those leather parts contains chromium VI in concentrations equal to or greater than 3 mg/kg (0,0003 % by weight) of the total dry weight of that leather part.<br><br>7. Paragraphs 5 and 6 shall not apply to the placing on the market of second-hand articles which were in end-use in the Union before 1 May 2015.  | 47                                    |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles

| No. | Substance Name   | Specified Conditions or Applications  | Entry numbers in the REACH Annex XVII |
|-----|--|---|---------------------------------------|
| 12  | Mercury compounds  | <p>Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use:</p> <p>(a) to prevent the fouling by micro-organisms, plants or animals of:<br/>                     — the hulls of boats,<br/>                     — cages, floats, nets and any other appliances or equipment used for fish or shellfish farming,<br/>                     — any totally or partly submerged appliances or equipment;</p> <p>(b) in the preservation of wood;</p> <p>(c) in the impregnation of heavy-duty industrial textiles and yarn intended for their manufacture;</p> <p>(d) in the treatment of industrial waters, irrespective of their use.</p>  | 18                                    |
| 13  | Polybromobiphenyls;<br>Polybrominatedbiphenyls (PBB)<br>CAS No 59536-65-1  | <p>1. Shall not be used in textile articles, such as garments, undergarments and linen, intended to come into contact with the skin.</p> <p>2. Articles not complying with paragraph 1 shall not be placed on the market.</p>   | 8                                     |
| 14  | Methanol<br>CAS No 67-56-1   | Shall not be placed on the market to the general public after 9 May 2019 in windscreen washing or defrosting fluids, in a concentration equal to or greater than 0,6 % by weight.   | 69                                    |
| 15  | Lead carbonates:<br>(a) Neutral anhydrous carbonate (PbCO <sub>3</sub> )<br>CAS No 598-63-0<br>(b) Trilead-bis(carbonate)-dihydroxide 2Pb CO <sub>3</sub> -Pb(OH) <sub>2</sub><br>CAS No 1319-46-6 | Shall not be placed on the market, or used, as substances or in mixtures, where the substance or mixture is intended for use as paint. However, Member States may, in accordance with the provisions of International Labour Organization (ILO) Convention 13, permit the use on their territory of the substance or mixture for the restoration and maintenance of works of art and historic buildings and their interiors, as well as the placing on the market for such use. Where a Member State makes use of this derogation, it shall inform the Commission thereof.  | 16                                    |
| 16  | Lead sulphates:<br>(a)PbSO <sub>4</sub><br>CAS No 7446-14-2<br>(b)PbXSO <sub>4</sub><br>CAS No 15739-80-7  | Shall not be placed on the market, or used, as substances or in mixtures, where the substance or mixture is intended for use as paint. However, Member States may, in accordance with the provisions of International Labour Organization (ILO) Convention 13, permit the use on their territory of the substance or mixture for the restoration and maintenance of works of art and historic buildings and their interiors, as well as the placing on the market for such use. Where a Member State makes use of this derogation, it shall inform the Commission thereof.  | 17                                    |
| 17  | Lead CAS No 7439-92-1 and its compounds  | <p>1. Shall not be placed on the market or used in any individual part of jewellery articles if the concentration of lead (expressed as metal) in such a part is equal to or greater than 0,05 % by weight.</p> <p>2. For the purposes of paragraph 1:</p> <p>(i) 'jewellery articles' shall include jewellery and imitation jewellery articles and hair accessories, including:<br/>                     (a) bracelets, necklaces and rings;<br/>                     (b) piercing jewellery;<br/>                     (c) wrist watches and wrist-wear;<br/>                     (d) brooches and cufflinks;</p> <p>(ii) 'any individual part' shall include the materials from which the jewellery is made, as well as the individual components of the jewellery</p> <p>3. Paragraph 1 shall also apply to individual parts when placed on the market or used for jewellery- making.</p> <p>4. By way of derogation, paragraph 1 shall not apply to:<br/>                     (a) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Council Directive 69/493/ EEC (*);<br/>                     (b) internal components of watch timepieces inaccessible to consumers;<br/>                     (c) non-synthetic or reconstructed precious and semiprecious stones (CN code 7103, as established by Regulation (EEC) No 2658/87), unless they have been treated with lead or its compounds or mixtures containing these substances;<br/>                     (d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of minerals melted at a temperature of at least 500 °C.</p> <p>5. By way of derogation, paragraph 1 shall not apply to jewellery articles placed on the market for the first time before 9 October 2013 and jewellery articles produced before 10 December 1961.</p> <p>6. By 9 October 2017, the Commission shall re-evaluate paragraphs 1 to 5 of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 1 and, if appropriate, modify this entry accordingly.</p> <p>7. Shall not be placed on the market or used in articles supplied to the general public, if the concentration of lead (expressed as metal) in those articles or accessible parts thereof is equal to or greater than 0,05 % by weight, and those articles or accessible parts thereof may, during normal or reasonably foreseeable conditions of use, be placed in the mouth by children.</p> <p>That limit shall not apply where it can be demonstrated that the rate of lead release from such an article or any such accessible part of an article, whether coated or un-coated, does not exceed 0,05 µg/cm<sup>2</sup> per hour (equivalent to 0,05 µg/g/h), and, for coated articles, that the coating is sufficient to ensure that this release rate is not exceeded for a period of at least two years of normal or reasonably foreseeable conditions of use of the article.</p> <p>For the purposes of this paragraph, it is considered that an article or accessible part of an article may be placed in the mouth by children if it is smaller than 5 cm in one dimension or has a detachable or protruding part of that size.</p> <p>8. By way of derogation, paragraph 7 shall not apply to:<br/>                     (a) jewellery articles covered by paragraph 1;<br/>                     (b) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Directive 69/493/EEC;<br/>                     (c) non-synthetic or reconstructed precious and semi-precious stones (CN code 7103 as established by Regulation (EEC) No 2658/87) unless they have been treated with lead or its compounds or mixtures containing these substances;<br/>                     (d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of mineral melted at a temperature of at least 500 °C;<br/>                     (e) keys and locks, including padlocks;<br/>                     (f) musical instruments;<br/>                     (g) articles and parts of articles comprising brass alloys, if the concentration of lead (expressed as metal) in the brass alloy does not exceed 0,5 % by weight;<br/>                     (h) the tips of writing instruments;<br/>                     (i) religious articles;<br/>                     (j) portable zinc-carbon batteries and button cell batteries;<br/>                     (k) articles within the scope of:<br/>                     (i) Directive 94/62/EC;<br/>                     (ii) Regulation (EC) No 1935/2004;<br/>                     (iii) Directive 2009/48/EC of the European Parliament and of the Council (**);<br/>                     (iv) Directive 2011/65/EU of the European Parliament and of the Council (***)</p> <p>9. By 1 July 2019, the Commission shall re-evaluate paragraphs 7 and 8(e), (f), (i) and (j) of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 7, including the requirement on coating integrity, and, if appropriate, modify this entry accordingly.</p> <p>10. By way of derogation paragraph 7 shall not apply to articles placed on the market for the first time before 1 June 2016.</p> <p>15. Shall not be placed on the market or used in articles produced from polymers or copolymers of vinyl chloride (PVC), if the concentration of lead is equal to or greater than 0,1 % by weight of the PVC material.</p> <p>16. Paragraph 15 shall apply with effect from 29 November 2024.</p> <p>17. By way of derogation, paragraph 15 shall not apply to PVC articles containing recovered flexible PVC until 28 May 2025.</p> <p>18. By way of derogation, paragraph 15 shall not apply to the following PVC articles containing recovered rigid PVC until 28 May 2033, if the concentration of lead is lower than 1,5 % by weight of the recovered rigid PVC:<br/>                     (a) profiles and sheets for exterior applications in buildings and civil engineering works, excluding decks and terraces;<br/>                     (b) profiles and sheets for decks and terraces, provided that the recovered PVC is used in a middle layer and is entirely covered with a layer of PVC or other material for which the concentration of lead is lower than 0,1 % by weight;<br/>                     (c) profiles and sheets for use in concealed spaces or voids in buildings and civil engineering works (where they are inaccessible during normal use, excluding maintenance, for example, cable ducts);<br/>                     (d) profiles and sheets for interior building applications, provided that the entire surface of the profile or sheet facing the occupied areas of a building after installation is produced using PVC or other material for which the concentration of lead is lower than 0,1 % by weight;<br/>                     (e) multi-layer pipes (excluding pipes for drinking water), provided that the recovered PVC is used in a middle layer and is entirely covered with a layer of PVC or other material for which the concentration of lead is lower than 0,1 % by weight;<br/>                     (f) fittings, excluding fittings for pipes for drinking water.</p> | 63                                    |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles

| No. | Substance Name  | Specified Conditions or Applications   | Entry numbers in the REACH Annex XVII |
|-----|---|--|---------------------------------------|
| 17  | Lead CAS No 7439-92-1 and its compounds (Continued)               | <p>19. By way of derogation, paragraph 15 shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) PVC-silica separators in lead acid batteries, until 28 May 2033;</li> <li>(b) articles covered by paragraph 1, in accordance with paragraphs 2 to 5, and by paragraph 7 in accordance with paragraphs 8 and 10;</li> <li>(c) articles within the scope of: <ul style="list-style-type: none"> <li>(i) Regulation (EC) No 1935/2004;</li> <li>(ii) Directive 2011/65/EU;</li> <li>(iii) Directive 94/62/EC;</li> <li>(iv) Directive 2009/48/EC.</li> </ul> </li> </ul> <p>20. By way of derogation, paragraph 15 shall not apply to PVC articles placed on the market until 28 November 2024.</p>  | 63                                    |
| 18  | Formaldehyde CAS No 50-00-0 and formaldehyde-releasing substances | <p>1. Shall not be placed on the market in articles, after 6 August 2026, if, under the test conditions specified in Appendix 14, the concentration of formaldehyde released from those articles exceeds:</p> <ul style="list-style-type: none"> <li>(a) 0,062 mg/m<sup>3</sup> for furniture and wood-based articles;</li> <li>(b) 0,080 mg/m<sup>3</sup> for articles other than furniture and wood-based articles.</li> </ul> <p>The first subparagraph shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) articles in which formaldehyde or formaldehyde releasing substances are exclusively naturally present in the materials from which the articles are produced;</li> <li>(b) articles that are exclusively for outdoor use under foreseeable conditions;</li> <li>(c) articles in constructions, that are exclusively used outside the building shell and vapour barrier and that do not emit formaldehyde into indoor air;</li> <li>(d) articles exclusively for industrial or professional use unless formaldehyde released from them leads to exposure of the general public under foreseeable conditions of use;</li> <li>(e) articles for which the restriction laid down in entry 72 applies;</li> <li>(f) articles that are biocidal products within the scope of Regulation (EU) No 528/2012 of the European Parliament and of the Council;</li> <li>(g) devices within the scope of Regulation (EU) 2017/745;</li> <li>(h) personal protective equipment within the scope of Regulation (EU) 2016/425;</li> <li>(i) articles intended to come into contact directly or indirectly with food within the scope of Regulation (EC) No 1935/2004;</li> <li>(j) second-hand articles.</li> </ul> <p>2. Shall not be placed on the market in road vehicles after 6 August 2027 if, under the test conditions specified in Appendix 14, the concentration of formaldehyde in the interior of those vehicles exceeds 0,062 mg/m<sup>3</sup>.</p> <p>The first subparagraph shall not apply to:</p> <ul style="list-style-type: none"> <li>(a) road vehicles exclusively for industrial or professional use unless the concentration of formaldehyde in the interior of those vehicles leads to exposure of the general public under foreseeable conditions of use;</li> <li>(b) second-hand vehicles.</li> </ul>   | 77                                    |
| 19  | Synthetic polymer microparticles:                                 | <p>1. Shall not be placed on the market as substances on their own or, where the synthetic polymer microparticles are present to confer a sought-after characteristic, in mixtures in a concentration equal to or greater than 0,01 % by weight.</p> <p>2. For the purposes of this entry, the following definitions apply:</p> <ul style="list-style-type: none"> <li>(a) "particle" means a minute piece of matter, other than single molecules, with defined physical boundaries;</li> <li>(b) "solid" means a substance or mixture other than aliquid or gas;</li> <li>(c) "gas" means a substance or mixture which at 50 °C has a vapour pressure greater than 300 kPa (absolute), or is completely gaseous at 20 °C at a standard pressure of 101,3 kPa;</li> <li>(d) "liquid" means a substance or mixture that meets any of the following conditions: <ul style="list-style-type: none"> <li>(i) the substance or mixture at 50 °C has a vapour pressure of not more than 300 kPa, is not completely gaseous at 20 °C and at a standard pressure of 101,3 kPa, and has a melting point or initial melting point of 20 °C or less at a standard pressure of 101,3 kPa;</li> <li>(ii) the substance or mixture fulfils the criteria in the American Society for Testing and Materials (ASTM) D 4359-90 Standard Test Method for Determining Whether a Material Is a Liquid or a Solid;</li> <li>(iii) the substance or mixture passes the fluidity test (penetrometer test) described in chapter 2.3.4 of Part 2 of Annex A to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) concluded at Geneva on 30 September 1957;</li> </ul> </li> <li>(e) "make-up product" means any substance or mixture intended to be placed in contact with specific external parts of the human body, namely the epidermis, eye brows and eye lashes, with a view to, exclusively or mainly, changing their appearance;</li> </ul> <p>3. Where the concentration of synthetic polymer microparticles covered by this entry cannot be determined by available analytical methods or accompanying documentation, in order to verify the compliance with the concentration limit referred to in paragraph 1, only the particles of at least the following size shall be taken into account:</p> <ul style="list-style-type: none"> <li>(a) 0,1 µm for any dimension, for particles where all dimensions are equal to or smaller than 5 mm;</li> <li>(b) 0,3 µm in length, for particles that have a length that is equal to or smaller than 15 mm and a length to diameter ratio greater than 3.</li> </ul> <p>4. Paragraph 1 shall not apply to the placing on the market of:</p> <ul style="list-style-type: none"> <li>(a) synthetic polymer microparticles, as substances on their own or in mixtures, for use at industrial sites;</li> <li>(b) medicinal products within the scope of Directive 2001/83/EC and veterinary medicinal products within the scope of Regulation (EU) 2019/6 of the European Parliament and of the Council;</li> <li>(c) EU fertilising products within the scope of Regulation (EU) 2019/1009 of the European Parliament and of the Council;</li> <li>(d) food additives within the scope of Regulation (EC) No 1333/2008 of the European Parliament and of the Council;</li> <li>(e) in vitro diagnostic devices, including devices within the scope of Regulation (EU) 2017/746 of the European Parliament and of the Council;</li> <li>(f) food within the meaning of Article 2 of Regulation (EC) No 178/2002, not covered by point (d) of this paragraph, and feed as defined in Article 3(4) of that Regulation.</li> </ul> <p>5. Paragraph 1 shall not apply to the placing on the market of the following synthetic polymer microparticles, as substances on their own or in mixtures:</p> <ul style="list-style-type: none"> <li>(a) synthetic polymer microparticles which are contained by technical means so that releases to the environment are prevented when used in accordance with the instructions for use during the intended end use;</li> <li>(b) synthetic polymer microparticles the physical properties of which are permanently modified during intended end use in such a way that the polymer no longer falls within the scope of this entry;</li> <li>(c) synthetic polymer microparticles which are permanently incorporated into a solid matrix during intended end use.</li> </ul> <p>6. Paragraph 1 shall apply as follows regarding the following uses:</p> <ul style="list-style-type: none"> <li>(a) from 17 October 2029 to synthetic polymer microparticles for use in the encapsulation of fragrances;</li> <li>(b) from 17 October 2027 for "rinse-off products" as defined in point (1)(a) of the Preamble to Annexes II to VI to Regulation (EC) No 1223/2009 unless such products are covered by point (a) of this paragraph or contain synthetic polymer microparticles for use as an abrasive, i.e. namely to exfoliate, polish or clean ("microbeads");</li> <li>(c) from 17 October 2035 for lip products as defined in point (1)(e) of the Preamble to Annexes II to VI to Regulation (EC) No 1223/2009, nail products as defined in point (1)(g) of the Preamble to Annexes II to VI to that Regulation, and make-up products within the scope of that Regulation, unless such products are covered by points (a) or (b) of this paragraph or contain microbeads;</li> <li>(d) from 17 October 2029 for leave-on products, as defined in point (1)(b) of the Preamble to Annexes II to VI to Regulation (EC) No 1223/2009, unless such products are covered by points (a) or (c) of this paragraph;</li> <li>(e) from 17 October 2028 for detergents, as defined in Article 2(1) of Regulation (EC) No 648/2004, waxes, polishes and air care products, unless those products are covered by point (a) of this paragraph or contain microbeads;</li> <li>(f) from 17 October 2029 for "devices", within the scope of Regulation (EU) 2017/745 of the European Parliament and of the Council;</li> <li>(g) from 17 October 2028 for "fertilising products", as defined in Article 2, point (1), of Regulation (EU) 2019/1009, which do not fall within the scope of that Regulation;</li> <li>(h) from 17 October 2031 for plant protection products within the meaning of Article 2(1) of Regulation (EC) No 1107/2009 of the European Parliament and of the Council and seed treated with those products, and biocidal products as defined in Article 3(1), point (a), of Regulation (EU) No 528/2012 of the European Parliament and of the Council;</li> <li>(i) from 17 October 2028 for products for agricultural and horticultural uses not covered by points (g) or (h);</li> <li>(j) from 17 October 2031 for granular infill for use on synthetic sports surfaces.</li> </ul> <p>7. From 17 October 2025 suppliers of synthetic polymer microparticles referred to in paragraph 4, point (a), shall provide the following information:</p> <ul style="list-style-type: none"> <li>(a) instructions for use and disposal explaining to industrial downstream users how to prevent releases of synthetic polymer microparticles to the environment;</li> <li>(b) the following statement: "The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council";</li> <li>(c) the information on quantity or, as applicable, concentration of synthetic polymer microparticles in the substance or mixture;</li> <li>(d) generic information on the identity of the polymers contained in the substance or mixture that enables manufacturers, industrial downstream users and other suppliers to comply with their obligations laid down in paragraphs 11 and 12.</li> </ul> | 78                                    |

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

Table2-3. REACH Annex XVII, substances restricted to use in articles

| No. | Substance Name                    | Specified Conditions or Applications   | Entry numbers in the REACH Annex XVII |
|-----|-----------------------------------|--|---------------------------------------|
| 19  | Synthetic polymer microparticles: | <p>8.From 17 October 2026 suppliers of products containing synthetic polymer microparticles referred to in paragraph 4, point (e), and from 17 October 2025 suppliers of products containing synthetic polymer microparticles referred to in paragraph 4, point (d), and paragraph 5, shall provide instructions for use and disposal explaining to professional users and the general public how to prevent releases of synthetic polymer microparticles to the environment.</p> <p>9.From 17 October 2031 until 16 October 2035 suppliers of products referred to in paragraph 6, point (c), containing synthetic polymer microparticles shall provide the following statement: "This product contains microplastics." However, products placed on the market before 17 October 2031 are not required to bear that statement until 17 December 2031.</p> <p>10.The information referred to in paragraphs 7, 8 and 9 shall be provided in the form of clearly visible, legible and indelible text or, where appropriate regarding the information in paragraphs 7 and 8, in the form of pictograms. The text or pictograms shall be placed on the label, the packaging, or the package leaflet of the products containing synthetic polymer microparticles or, regarding the information in paragraph 7, on the safety data sheet. In addition to the text or pictograms, suppliers may provide a digital tool that gives access to an electronic version of that information.</p> <p>Where instructions for use and disposal are provided in accordance with paragraphs 7, 8 and 9 in the form of a text, they shall be in the official languages of the Member States where the substance or mixture is placed on the market, unless the Member States concerned provide otherwise.</p> <p>11.Starting from 2026 manufacturers and industrial downstream users of synthetic polymer microparticles in the form of pellets, flakes, and powders used as feedstock in plastic manufacturing at industrial sites, and, starting from 2027, other manufacturers of synthetic polymer microparticles and other industrial downstream users using synthetic polymer microparticles at industrial sites shall submit the following information to the Agency by 31 May of each year:</p> <p>(a) a description of the uses of synthetic polymer microparticles in the previous calendar year;</p> <p>(b) for each use of synthetic polymer microparticles, generic information on the identity of the polymers used;</p> <p>(c) for each use of synthetic polymer microparticles, an estimate of the quantity of synthetic polymer microparticles released to the environment in the previous calendar year, which shall include also the quantity of synthetic polymer microparticles released to the environment during transportation.</p> <p>(d) for each use of synthetic polymer microparticles, a reference to the derogation laid down in paragraph 4, point (a).</p> <p>12.From 2027, suppliers of products containing synthetic polymer microparticles referred to in paragraphs 4, points (b), (d) and (e), and paragraph 5, placed on the market for the first time to professional users and the general public, shall submit the following information to the Agency by 31 May of each year:</p> <p>(a) a description of the end uses for which the synthetic polymer microparticles were placed on the market in the previous calendar year;</p> <p>(b) for each end use for which the synthetic polymer microparticles were placed on the market, generic information on the identity of the polymers placed on the market in the previous calendar year;</p> <p>(c) for each end use for which the synthetic polymer microparticles were placed on the market, an estimate of the quantity of synthetic polymer microparticles released to the environment in the previous calendar year, which shall include also the quantity of synthetic polymer microparticles released to the environment during transportation.</p> <p>(d) for each use of synthetic polymer microparticles, a reference to the applicable derogation or derogations laid down in paragraph 4, point (b), (d) or (e), or 5 point (a), (b) or (c).</p> <p>13.The Agency shall make the information submitted under paragraphs 11 and 12 available to the Member States.</p> <p>14.Manufacturers, importers and industrial downstream users of products containing synthetic polymer microparticles shall provide specific information on the identity of polymers covered by this entry contained in those products and the function of those polymers in the products to competent authorities upon their request. The specific information on the polymer identity shall be sufficient to unequivocally identify polymers and shall at least include the information laid down in points 2.1 to 2.2.3 and points 2.3.5, 2.3.6 and 2.3.7 of Annex VI, where applicable. If the information is not available to industrial downstream users, they shall request it from their supplier within 7 days from the receipt of the request from the competent authorities and shall inform the authorities of the request made without delay. Having received the request referred to in the second subparagraph, the suppliers shall provide the requested information within 30 days to the industrial downstream user or directly to the competent authority requesting it. Where the supplier provides the information to the industrial downstream user, the industrial downstream user shall forward that information to the competent authorities without delay. Where the supplier provides the information directly to the authority, it shall without delay inform the industrial downstream user concerned to that effect.</p> <p>15.Manufacturers, importers and industrial downstream users of products containing polymers claimed to be excluded from the designation of synthetic polymer microparticles on grounds of degradability or solubility shall provide, without delay, information proving that those polymers are degradable in accordance with Appendix 15 or soluble in accordance with Appendix 16, as applicable, to competent authorities upon their request.</p> <p>16.Paragraph 1 shall not apply to placing on the market of synthetic polymers microparticles, on their own or in mixtures, placed on the market before 17 October 2023. However, the first subparagraph shall not apply to the placing on the market of synthetic polymers microparticles for uses listed in paragraph 6.</p> | 78                                    |



Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

**Table2-4. TSCA PBT Chemicals ( § 751.405, § 751.407, § 751.409, § 751.411, § 751.413)**

| No. | Substance Name | Specified Conditions or Applications   |
|-----|----------------|--|
| 1   | decaBDE        | <p>(a) Prohibition</p> <p>(1) General.<br/>Except as provided in paragraphs (a)(2) and (b) of this section, all persons are prohibited from all manufacturing and processing of decaBDE or decaBDE-containing products or articles after March 8, 2021, and all persons are prohibited from all distribution in commerce of decaBDE or decaBDE-containing products or articles after January 6, 2022.</p> <p>(2) Phase-in of Prohibitions for Specific Uses of decaBDE and decaBDE-containing Products or Articles.</p> <p>(i) After July 6, 2022, all persons are prohibited from all manufacturing, processing, and distribution in commerce decaBDE for use in curtains in the hospitality industry, and the curtains to which decaBDE has been added.</p> <p>(ii) After January 6, 2023, all persons are prohibited from all processing and distribution in commerce of decaBDE for use in wire and cable insulation in nuclear power generation facilities, and decaBDE-containing wire and cable insulation.</p> <p>(iii) After January 8, 2024, all persons are prohibited from all manufacturing, processing, and distribution in commerce of decaBDE for use in parts installed in and distributed as part of new aerospace vehicles, and the parts to which decaBDE has been added for such vehicles.<br/>After the end of the aerospace vehicles service lives, all persons are prohibited from all importing, processing, and distribution in commerce of aerospace vehicles manufactured before January 8, 2024 that contain decaBDE in any part.<br/>After the end of the aerospace vehicles service lives, all persons are prohibited from all manufacture, processing and distribution in commerce of decaBDE for use in replacement parts for aerospace vehicles, and the replacement parts to which decaBDE has been added for such vehicles.</p> <p>(iv) After the end of the vehicles service lives or 2036, whichever is earlier, all persons are prohibited from all manufacture, processing and distribution in commerce of decaBDE for use in replacement parts for motor vehicles, and the replacement parts to which decaBDE has been added for such vehicles.</p> <p>(v) After the end of the pallets' service life, all persons are prohibited from all distribution in commerce of plastic shipping pallets that contain decaBDE and were manufactured prior March 8, 2021.</p> <p>(b) Exclusions to the Prohibition.<br/>Processing and distribution in commerce for recycling of decaBDE-containing plastic from products or articles and decaBDE-containing products or articles made from such recycled plastic, where no new decaBDE is added during the recycling or production processes is not subject to the prohibition in paragraph (a) of this section.</p>   |
| 2   | PIP (3:1)      | <p>(a) Prohibitions</p> <p>(1) General.<br/>Except as provided in paragraphs (a)(2) and (b) of this section, all persons are prohibited from all processing and distributing in commerce of PIP (3:1), including in PIP (3:1)-containing products or articles after March 8, 2021.</p> <p>(2) Phase-in Prohibitions for Specific uses of PIP (3:1) and PIP (3:1)-containing products and articles.</p> <p>(i) After January 6, 2025, all persons are prohibited from all processing and distributing in commerce of PIP (3:1) for use in adhesives and sealants, PIP (3:1)-containing products for use in adhesives and sealants, and PIP (3:1)-containing adhesives and sealants.</p> <p>(ii) After January 1, 2022, all persons are prohibited from all processing and distributing in commerce of PIP (3:1) for use in photographic printing articles and PIP (3:1)-containing photographic printing articles.</p> <p>(iii) After October 31, 2024, except as provided in paragraphs (a)(2)(ii) and (b) of this section, all persons are prohibited from all processing and distribution in commerce of PIP (3:1) for use in articles and PIP (3:1)-containing articles.</p> <p>(b) Exclusions.<br/>The following activities are not subject to the prohibitions in paragraph (a) of this section.</p> <p>(1) Processing and distribution in commerce of:</p> <p>(i) PIP (3:1) for use in hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements, PIP (3:1)-containing products for use in such hydraulic fluids, and PIP (3:1)-containing hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements.</p> <p>(ii) PIP (3:1) for use in lubricants and greases, PIP (3:1) containing products for use in lubricants and greases, and PIP (3:1)-containing lubricants and greases.</p> <p>(iii) PIP (3:1) and PIP (3:1)-containing products for use in new and replacement parts for motor and aerospace vehicles, the new and replacement parts to which PIP (3:1) has been added for such vehicles, and the motor and aerospace vehicles that contain new and replacement parts to which PIP (3:1) has been added;</p> <p>(iv) PIP (3:1) and PIP (3:1)-containing products for use as an intermediate in a closed system to produce cyanoacrylate adhesives;</p> <p>(v) PIP (3:1) for use in specialized engine air filters for locomotive and marine applications, PIP (3:1) containing products for use in specialized engine air filters for locomotive and marine applications, and PIP (3:1)-containing specialized engine air filters for locomotive and marine applications;</p> <p>(vi) Plastic for recycling from products or articles containing PIP (3:1), where no new PIP (3:1) is added during the recycling process; and</p> <p>(vii) Finished products or articles made of plastic recycled from products or articles containing PIP (3:1), where no new PIP (3:1) was added during the production of the products or articles made of recycled plastic.</p> |
| 3   | 2,4,6-TTBP     | <p>(a) Prohibitions.</p> <p>(1) After January 6, 2026, all persons are prohibited from all distribution in commerce of 2,4,6-TTBP, at any concentration above 0.3 percent by weight, in containers with a volume less than 35 gallons.</p> <p>(2) After January 6, 2026, all persons are prohibited from all processing and distribution in commerce of 2,4,6-TTBP oil and lubricant additives at any concentration above 0.3 percent by weight.</p>   |
| 4   | PCTP           | <p>(a) Prohibition.<br/>After March 8, 2021, all persons are prohibited from all manufacturing and processing of PCTP or PCTP-containing products or articles, unless PCTP concentrations are at or below 1% by weight. After January 6, 2022, all persons are prohibited from all distribution in commerce of PCTP or PCTP-containing products or articles, unless PCTP concentrations are at or below 1% by weight.</p>  |
| 5   | HCBD           | <p>(a) Prohibition.<br/>After March 8, 2021, all persons are prohibited from all manufacturing, processing and distribution in commerce of HCBD and HCBD-containing products or articles, except for the following:</p> <p>(1) Unintentional production of HCBD as a byproduct in the production of chlorinated solvents; and</p> <p>(2) Processing and distribution in commerce of HCBD for burning as a waste fuel.</p>  |

Attached Table I-A : RoHS Exemptions List Annex III

| No.         | Exemption  | Scope and dates of applicability   |
|-------------|--|--|
| 1           | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):   |  |
| 1(a)        | For general lighting purposes < 30 W: 5 mg   | Expires on 24 February 2023  |
| 1(b)        | For general lighting purposes $\geq$ 30 W and < 50 W: 5 mg   | Expires on 24 February 2023  |
| 1(c)        | For general lighting purposes $\geq$ 50 W and < 150 W: 5 mg  | Expires on 24 February 2023  |
| 1(d)        | For general lighting purposes $\geq$ 150 W: 15 mg  | Expires on 24 February 2023  |
| 1(e)        | For general lighting purposes with circular or square structural shape and tube diameter $\leq$ 17 mm  | Expires on 24 February 2023  |
| 1(f)-1      | For lamps designed to emit mainly light in the ultraviolet spectrum: 5 mg  | Expires on 24 February 2027  |
| 1(f)-2      | For special purposes: 5 mg   | Expires on 24 February 2025  |
| 1(g)        | For general lighting purposes < 30 W with a lifetime equal or above 20 000 h: 3,5 mg   | Expires on 24 February 2023  |
| 2(a)        | Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):  |  |
| 2(a)(1)     | Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg  | Expires on 24 February 2023  |
| 2(a)(2)     | Tri-band phosphor with normal lifetime and a tube diameter $\geq$ 9 mm and $\leq$ 17 mm (e.g. T5): 5 mg  | Expires on 24 February 2023  |
| 2(a)(3)     | Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and $\leq$ 28 mm (e.g. T8): 5 mg  | Expires on 24 February 2023  |
| 2(a)(4)     | Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg  | Expires on 24 February 2023  |
| 2(a)(5)     | Tri-band phosphor with long lifetime ( $\geq$ 25 000 h): 8 mg  | Expires on 24 February 2023  |
| 2(b)        | Mercury in other fluorescent lamps not exceeding (per lamp):   |  |
| 2(b)(1)     | Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg   | Expires on 13 April 2012   |
| 2(b)(2)     | Non-linear halophosphate lamps (all diameters): 15 mg  | Expires on 13 April 2016   |
| 2(b)(3)     | Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)  | Expires on 24 February 2023; 10 mg may be used per lamp from 25 February 2023 until 24 February 2025 |
| 2(b)(4)-I   | Lamps for other general lighting and special purposes (e.g. induction lamps): 15 mg  | Expires on 24 February 2025  |
| 2(b)(4)-II  | Lamps emitting mainly light in the ultraviolet spectrum: 15mg  | Expires on 24 February 2027  |
| 2(b)(4)-III | Emergency lamps: 15 mg   | Expires on 24 February 2027  |
| 3           | Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):  |  |
| 3(a)        | Short length ( $\leq$ 500 mm)  | Expires on 24 February 2025  |
| 3(b)        | Medium length (> 500 mm and $\leq$ 1 500 mm)   | Expires on 24 February 2025  |
| 3(c)        | Long length (> 1 500 mm)   | Expires on 24 February 2025  |
| 4(a)        | Mercury in other low pressure discharge lamps (per lamp): 15 mg  | Expires on 24 February 2023  |
| 4(a)-I      | Mercury in low pressure non-phosphor coated discharge lamps, where the application requires the main range of the lamp-spectral output to be in the ultraviolet spectrum: up to 15 mg mercury may be used per lamp | Expires on 24 February 2027  |
| 4(b)        | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index $R_a > 60$ :   | Expires on 24 February 2027  |
| 4(b)-I      | $P \leq 155$ W   | Expires on 24 February 2023  |
| 4(b)-II     | $155$ W < $P \leq 405$ W   | Expires on 24 February 2023  |
| 4(b)-III    | $P > 405$ W  | Expires on 24 February 2023  |
| 4(c)        | Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):   |  |
| 4(c)-I      | $P \leq 155$ W   | Expires on 24 February 2027  |
| 4(c)-II     | $155$ W < $P \leq 405$ W   | Expires on 24 February 2027  |
| 4(c)-III    | $P > 405$ W  | Expires on 24 February 2027  |
| 4(d)        | Mercury in High Pressure Mercury (vapour) lamps (HPMV)   | Expires on 13 April 2015   |
| 4(e)        | Mercury in metal halide lamps (MH)   | Expires on 24 February 2027  |
| 4(f)-I      | Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex   | Expires on 24 February 2025  |
| 4(f)-II     | Mercury in high pressure mercury vapour lamps used in projectors where an output $\geq 2000$ lumen ANSI is required  | Expires on 24 February 2027  |
| 4(f)-III    | Mercury in high pressure sodium vapour lamps used for horticulture lighting  | Expires on 24 February 2027  |
| 4(f)-IV     | Mercury in lamps emitting light in the ultraviolet spectrum  | Expires on 24 February 2027  |



Attached Table I-A : RoHS Exemptions List Annex III

| No.      | Exemption   | Scope and dates of applicability   |
|----------|---|--|
| 4(g)     | Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, <u>where the mercury content shall be limited as follows:</u><br>(a) 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C;<br>(b) 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications. | Expires on 31 December 2018  |
| 5(a)     | Lead in glass of cathode ray tubes  | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.         |
| 5(b)     | Lead in glass of fluorescent tubes not exceeding 0,2 % by weight  | Expires on:<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.  |
| 6(a)     | Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight  |  |
| 6(a)-I   | Lead as an alloying element in steel for machining purposes containing up to 0,35 % lead by weight and in batch hot dip galvanised steel components containing up to 0,2 % lead by weight   |  |
| 6(b)     | Lead as an alloying element in aluminium containing up to 0,4 % lead by weight  |  |
| 6(b)-I   | Lead as an alloying element in aluminium containing up to 0,4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling   |  |
| 6(b)-II  | Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4 % by weight   |  |
| 6(c)     | Copper alloy containing up to 4 % lead by weight  |  |
| 7(a)     | Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)   |  |
| 7(b)     | Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications   |  |
| 7(c)-I   | Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound  |  |
| 7(c)-II  | Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher  |  |
| 7(c)-III | Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC  |  |
| 7(c)-IV  | Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors  | Expires on:<br>— 21 July 2021 for categories 1-7 and 10;<br>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>— 21 July 2023 for category 8 in vitro diagnostic medical devices;<br>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11. |
| 8(a)     | Cadmium and its compounds in one shot pellet type thermal cut-offs  | Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012  |
| 8(b)     | Cadmium and its compounds in electrical contacts  |  |

Attached Table I-A : RoHS Exemptions List Annex III

| No.         | Exemption   | Scope and dates of applicability  |
|-------------|---|---|
| 8(b)-I      | Cadmium and its compounds in electrical contacts used in: <ul style="list-style-type: none"> <li>— circuit breakers,</li> <li>— thermal sensing controls,</li> <li>— thermal motor protectors (excluding hermetic thermal motor protectors),</li> <li>— AC switches rated at:                             <ul style="list-style-type: none"> <li>— 6 A and more at 250 V AC and more, or</li> <li>— 12 A and more at 125 V AC and more,</li> </ul> </li> <li>— DC switches rated at 20 A and more at 18 V DC and more, and</li> <li>— switches for use at voltage supply frequency <math>\geq</math> 200 Hz.</li> </ul> |   |
| 9           | Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution   | Applies to categories 8, 9 and 11 and expires on: <ul style="list-style-type: none"> <li>—21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments,</li> <li>—21 July 2023 for category 8 in vitro diagnostic medical devices,</li> <li>—21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.</li> </ul> |
| 9(a)-I      | Up to 0,75 % hexavalent chromium by weight, used as an anticorrosion agent in the cooling solution of carbon steel cooling systems of absorption refrigerators (including minibars) designed to operate fully or partly with electrical heater, having an average utilised power input < 75 W at constant running conditions  | Applies to categories 1-7 and 10 and expires on 5 March 2021.   |
| 9(a)-II     | Up to 0,75 % hexavalent chromium by weight, used as an anticorrosion agent in the cooling solution of carbon steel cooling systems of absorption refrigerators (including minibars) designed to operate fully or partly with electrical heater, having an average utilised power input < 75 W at constant running conditions <ul style="list-style-type: none"> <li>— designed to operate fully or partly with electrical heater, having an average utilised power input <math>\geq</math> 75 W at constant running conditions,</li> <li>— designed to fully operate with non-electrical heater.</li> </ul>             |   |
| 9(b)        | Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications  | Applies to categories 8, 9 and 11; expires on: <ul style="list-style-type: none"> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices,</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments and for category 11,</li> <li>— 21 July 2021 for other subcategories of categories 8 and 9.</li> </ul>  |
| 9(b)-(I)    | Lead in bearing shells and bushes for refrigerant-containing hermetic scroll compressors with a stated electrical power input equal or below 9 kW for heating, ventilation, air conditioning and refrigeration (HVACR) applications   | Applies to category 1; expires on 21 July 2019.   |
| 11(a)       | Lead used in C-press compliant pin connector systems  | May be used in spare parts for EEE placed on the market before 24 September 2010  |
| 11(b)       | Lead used in other than C-press compliant pin connector systems   | Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013   |
| 12          | Lead as a coating material for the thermal conduction module C-ring   | May be used in spare parts for EEE placed on the market before 24 September 2010  |
| 13(a)       | Lead in white glasses used for optical applications   |   |
| 13(b)       | Cadmium and lead in filter glasses and glasses used for reflectance standards   |   |
| 13(b)-(I)   | Lead in ion coloured optical filter glass types   |   |
| 13(b)-(II)  | Cadmium in striking optical filter glass types; excluding applications falling under point 39 of this Annex   |   |
| 13(b)-(III) | Cadmium and lead in glazes used for reflectance standards   |   |
| 14          | Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight  | Expired on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011   |
| 15          | Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages   |   |

Attached Table I-A : RoHS Exemptions List Annex III

| No.     | Exemption   | Scope and dates of applicability  |
|---------|---|---|
| 15(a)   | Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies:<br>— a semiconductor technology node of 90 nm or larger;<br>— a single die of 300 mm <sup>2</sup> or larger in any semiconductor technology node;<br>— stacked die packages with die of 300 mm <sup>2</sup> or larger, or silicon interposers of 300 mm <sup>2</sup> or larger. |   |
| 16      | Lead in linear incandescent lamps with silicate coated tubes  | Expires on 1 September 2013   |
| 17      | Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications   | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.  |
| 18(a)   | Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba) <sub>2</sub> MgSi <sub>2</sub> O <sub>7</sub> :Pb)   | Expired on 1 January 2011   |
| 18(b)   | Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi <sub>2</sub> O <sub>5</sub> :Pb)  |   |
| 18(b)-I | Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps containing phosphors such as BSP (BaSi <sub>2</sub> O <sub>5</sub> :Pb) when used in medical phototherapy equipment   | Excluding applications covered by entry 34 of Annex IV  |
| 19      | Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)  | Expires on 1 June 2011  |
| 20      | Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)  | Expires on 1 June 2011  |
| 21      | Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses   | Applies to categories 8, 9 and 11 and expires on:<br>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>— 21 July 2023 for category 8 in vitro diagnostic medical devices;<br>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11. |
| 21(a)   | Cadmium when used in colour printed glass to provide filtering functions, used as a component in lighting applications installed in displays and control panels of EEE  | Applies to categories 1 to 7 and 10 except applications covered by entry 21(b) or entry 39 and expires on 21 July 2021.   |
| 21(b)   | Cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses  | Applies to categories 1 to 7 and 10 except applications covered by entry 21(a) or 39 and expires on 21 July 2021.   |
| 21(c)   | Lead in printing inks for the application of enamels on other than borosilicate glasses   | Applies to categories 1 to 7 and 10 and expires on 21 July 2021.  |
| 23      | Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less  | May be used in spare parts for EEE placed on the market before 24 September 2010  |
| 24      | Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors   | Expires on:<br>21 July 2024 for category 11.  |
| 25      | Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring  | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.  |
| 26      | Lead oxide in the glass envelope of black light blue lamps  | Expires on 1 June 2011  |

Attached Table I-A : RoHS Exemptions List Annex III

| No.   | Exemption  | Scope and dates of applicability   |
|-------|--|--|
| 27    | Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers   | Expired on 24 September 2010   |
| 29    | Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (3)   | Expires on:<br>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>— 21 July 2023 for category 8 in vitro diagnostic medical devices;<br>— 21 July 2024 for category 9 industrial monitoring and control instruments.   |
| 30    | Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.         |
| 31    | Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)   | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11          |
| 32    | Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes  | Expires on:<br>— 21 July 2023 for category 8 in vitro diagnostic medical devices,<br>— 21 July 2024 for category 11.   |
| 33    | Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers   | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.         |
| 34    | Lead in cermet-based trimmer potentiometer elements  |  |
| 36    | Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display  | Expired on 1 July 2010   |
| 37    | Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body  | Expires on:<br>— 21 July 2021 for categories 1-7 and 10;<br>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>— 21 July 2023 for category 8 in vitro diagnostic medical devices;<br>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11. |
| 38    | Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide  | Expires on:<br>21 July 2016 for categories 1-7 and 10;<br>21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>21 July 2023 for category 8 in vitro diagnostic medical devices;<br>21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.         |
| 39(a) | Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm <sup>2</sup> of display screen area)                              |  |
| 40    | Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment  | Expires on 31 December 2013  |

Attached Table I-A : RoHS Exemptions List Annex III

| No. | Exemption   | Scope and dates of applicability  |
|-----|---|---|
| 41  | Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council (2))   | Applies to all categories and expires on:<br>—31 March 2022 for categories 1 to 7, 10 and 11;<br>—21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;<br>—21 July 2023 for category 8 in vitro diagnostic medical devices;<br>—21 July 2024 for category 9 industrial monitoring and control instruments. |
| 42  | Lead in bearings and bushes of diesel or gaseous fuel powered internal combustion engines applied in non-road professional use equipment:<br>— with engine total displacement >= 15 litres;<br>— or<br>— with engine total displacement < 15 litres and the engine is designed to operate in applications where the time between signal to start and full load is required to be less than 10 seconds; or regular maintenance is typically performed in a harsh and dirty outdoor environment, such as mining, construction, and agriculture applications.  |   |
| 43  | Bis(2-ethylhexyl) phthalate in rubber components in engine systems, designed for use in equipment that is not intended solely for consumer use and provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin and the concentration value of bis(2-ethylhexyl) phthalate does not exceed:<br>(a) 30 % by weight of the rubber for<br>(i) gasket coatings;<br>(ii) solid-rubber gaskets; or<br>(iii) rubber components included in assemblies of at least three components using electrical, mechanical or hydraulic energy to do work, and attached to the engine.<br>(b) 10 % by weight of the rubber for rubber- containing components not referred to in point (a).<br>For the purposes of this entry, 'prolonged contact with human skin' means continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day. | Applies to category 11 and expires on 21 July 2024.   |
| 44  | Lead in solder of sensors, actuators, and engine control units of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council (4), installed in equipment used at fixed positions while in operation which is designed for professionals, but also used by non-professional users  |   |
| 45  | Lead diazide, lead styphnate, lead dipicramate, orange lead (lead tetroxide), lead dioxide in electric and electronic initiators of explosives for civil (professional) use and barium chromate in long time pyrotechnic delay charges of electric initiators of explosives for civil (professional) use  | Applies to category 11 and expires on 20 April 2026   |

(1) OJ L 326, 29.12.1969, p. 36.

(2) Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of

(3) Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal

(4) Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating

| No.   | Exemption   | Scope and dates of applicability |
|---|---|----------------------------------|
| Equipment utilising or detecting ionising radiation |   |                                  |
| 1   | Lead, cadmium and mercury in detectors for ionising radiation.  |                                  |
| 2   | Lead bearings in X-ray tubes.   |                                  |
| 3   | Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.   |                                  |
| 4   | Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons.                 |                                  |
| 5   | Lead in shielding for ionising radiation.   |                                  |
| 6   | Lead in X-ray test objects.   |                                  |
| 7   | Lead stearate X-ray diffraction crystals.   |                                  |
| 8   | Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers.   |                                  |
| Sensors, detectors and electrodes                   |   |                                  |
| 1a  | Lead and cadmium in ion selective electrodes including glass of pH electrodes.  |                                  |
| 1b  | Lead anodes in electrochemical oxygen sensors.  |                                  |
| 1c  | Lead, cadmium and mercury in infra-red light detectors.   |                                  |
| 1d  | Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide.   |                                  |
| Others  |   |                                  |
| 9   | Cadmium in helium-cadmium lasers.   |                                  |
| 10  | Lead and cadmium in atomic absorption spectroscopy lamps.   |                                  |
| 11  | Lead in alloys as a superconductor and thermal conductor in MRI.  |                                  |
| 12  | Lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR (Nuclear Magnetic Resonance) or FTMS (Fourier Transform Mass Spectrometer) detectors                         | Expires on 30 June 2021.         |
| 13  | Lead in counterweights.   |                                  |
| 14  | Lead in single crystal piezoelectric materials for ultrasonic transducers.  |                                  |
| 15  | Lead in solders for bonding to ultrasonic transducers.  |                                  |
| 16  | Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay. |                                  |
| 17  | Lead in solders in portable emergency defibrillators.   |                                  |
| 18  | Lead in solders of high performance infrared imaging modules to detect in the range 8-14 $\mu\text{m}$ .  |                                  |
| 19  | Lead in Liquid crystal on silicon (LCoS) displays.  |                                  |
| 20  | Cadmium in X-ray measurement filters.   |                                  |
| 21  | Cadmium in phosphor coatings in image intensifiers for X-ray images until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020.                                | Before 1 January 2020.           |

| No. | Exemption  | Scope and dates of applicability |
|-----|--|----------------------------------|
| 22  | Lead acetate marker for use in stereotactic head frames for use with CT and MRI and in positioning systems for gamma beam and particle therapy equipment.  | Expires on 30 June 2021.         |
| 23  | Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation.   | Expires on 30 June 2021.         |
| 24  | Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers.  | Expires on 31 December 2019.     |
| 25  | Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below – 20 °C under normal operating and storage conditions.  | Expires on 30 June 2021.         |
| 26  | <p>Lead in the following applications that are used durably at a temperature below – 20 °C under normal operating and storage conditions:</p> <p>(a) solders on printed circuit boards;</p> <p>(b) termination coatings of electrical and electronic components and coatings of printed circuit boards;</p> <p>(c) solders for connecting wires and cables;</p> <p>(d) solders connecting transducers and sensors.</p> <p>Lead in solders of electrical connections to temperature measurement sensors in devices which are designed to be used periodically at temperatures below – 150 °C.</p>   |                                  |
| 27  | <p>Lead in</p> <ul style="list-style-type: none"> <li>— solders,</li> <li>— termination coatings of electrical and electronic components and printed circuit boards,</li> <li>— connections of electrical wires, shields and enclosed connectors,</li> </ul> <p>which are used in</p> <p>(a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or</p> <p>(b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.</p> | Expires on 30 June 2020.         |
| 28  | Lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards.   | Expires on 31 December 2017.     |
| 29  | Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments.   | Expires on 30 June 2021.         |
| 30  | Hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020  | Before 1 January 2020            |



| No. | Exemption   | Scope and dates of applicability  |
|-----|---|---|
| 31a | Lead, cadmium, hexavalent chromium, and polybrominated diphenyl ethers (PBDE) in spare parts recovered from and used for the repair or refurbishment of medical devices, including <i>in vitro</i> diagnostic medical devices, or electron microscopes and their accessories, provided that the reuse takes place in auditable closed-loop business-to-business return systems and that each reuse of parts is notified to the customer.  |   |
| 32  | Lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment.  | Expires on 31 December 2019.  |
| 33  | Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators. Expires on 30 June 2016 for class IIa and on 31 December 2020 for class IIb.   |   |
| 34  | Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi2O5:Pb) phosphors.   | Expires on 22 July 2021.  |
| 35  | Mercury in cold cathode fluorescent lamps for back-lighting liquid crystal displays, not exceeding 5 mg per lamp, used in industrial monitoring and control instruments placed on the market before 22 July 2017  | Expires on 21 July 2024.  |
| 36  | Lead used in other than C-press compliant pin connector systems for industrial monitoring and control instruments.  | Expires on 31 December 2020. May be used after that date in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021. |
| 37  | Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies:<br><br>(a) wide-range measurements with a conductivity range covering more than 1 order of magnitude (e.g. range between 0,1 mS/m and 5 mS/m) in laboratory applications for unknown concentrations;<br>(b) measurements of solutions where an accuracy of +/- 1 % of the sample range and where high corrosion resistance of the electrode are required for any of the following:<br>(i) solutions with an acidity < pH 1;<br>(ii) solutions with an alkalinity > pH 13;<br>(iii) corrosive solutions containing halogen gas;<br>(c) measurements of conductivities above 100 mS/m that must be performed with portable instruments. | Expires on 31 December 2025.  |
| 38  | Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in X-ray detectors of computed tomography and X-ray systems.   | Expires on 31 December 2019. May be used after that date in spare parts for CT and X-ray systems placed on the market before 1 January 2020.                          |



| No. | Exemption   | Scope and dates of applicability  |
|-----|---|---|
| 39  | <p>Lead in micro-channel plates (MCPs) used in equipment where at least one of the following properties is present:</p> <p>(a) a compact size of the detector for electrons or ions, where the space for the detector is limited to a maximum of 3 mm/MCP (detector thickness + space for installation of the MCP), a maximum of 6 mm in total, and an alternative design yielding more space for the detector is scientifically and technically impracticable;</p> <p>(b) a two-dimensional spatial resolution for detecting electrons or ions, where at least one of the following applies:</p> <p>(i) a response time shorter than 25 ns;</p> <p>(ii) a sample detection area larger than 149 mm<sup>2</sup>;</p> <p>(iii) a multiplication factor larger than <math>1,3 \times 10^3</math>.</p> <p>(c) a response time shorter than 5 ns for detecting electrons or ions;</p> <p>(d) a sample detection area larger than 314 mm<sup>2</sup> for detecting electrons or ions;</p> <p>(e) a multiplication factor larger than <math>4,0 \times 10^7</math>.</p> |   |
| 40  | Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC for industrial monitoring and control instruments.   | Expires on 31 December 2020. May be used after that date in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021. |
| 41  | Lead as a thermal stabiliser in polyvinyl chloride (PVC) used as base material in amperometric, potentiometric and conductometric electrochemical sensors which are used in in-vitro diagnostic medical devices for the analysis of blood and other body fluids and body gases.   | Expires on 31 March 2022.   |
| 42  | Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (> 50 MHz) modes of operation.   | Expires on 30 June 2019.  |
| 43  | Cadmium anodes in HerschC19:C53+C49:C53 cells for oxygen sensors used in industrial monitoring and control instruments, where sensitivity below 10 ppm is required.   | Expires on 15 July 2023.  |
| 44  | Cadmium in radiation tolerant video camera tubes designed for cameras with a centre resolution greater than 450 TV lines which are used in environments with ionising radiation exposure exceeding 100 Gy/hour and a total dose in excess of 100kGy.  | Applies to category 9. Expires on 31 March 2027.  |

Table 3 : Substances to be Controlled

Substances specified by the regulatory control etc. of Table 3 except substances listed in Table 1 and Table 2 should be recognized their presence in the products or use in the production process.

| No. | Name of the regulatory control etc.   |
|-----|---|
| 3-1 | PRTR Law: Specific Class I Designated Chemical Substance  |
| 3-2 | PRTR Law: Class I Designated Chemical Substance   |
| 3-3 | Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. of Japan (Chemical Substances Control Law): Class II Specified Chemical Substances |
| 3-4 | Poisonous and Deleterious Substances Control Law of Japan: Poisonous Substances   |
| 3-5 | EU REACH: Substances in the Candidate List for Authorization (SVHC)   |
| 3-6 | EU REACH: Substances in the Authorization List (Annex XIV)  |
| 3-7 | EU REACH: Restricted Substances (Annex XVII)  |
| 3-8 | GADSL *1  |
| 3-9 | chemSHERPA Declarable Substances List *2  |

\*1 GADSL: Global Automotive Declarable Substance List

It is a declarable substance list which Global Automotive Stakeholder Group (GASG) provides as a standard for automobile industry to exchange information regarding the material and substance composition of automotive parts.

\*2 chemSHERPA Declarable Substances List is a list which JAMP (Joint Article

Management Promotion-consortium) provides as a cross-industrial standard to exchange chemical information.