



< KUBOTA Group Green Procurement Guidelines Appendix >

Substances of Concern List

January 2023

KUBOTA Corporation

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 2023.

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[Revision History]

Date of revision	Table Number	Revision
2023.1.1	Table2-4. TSCA PBT Chemicals	Phase-in Prohibition for PIP (3:1) was revised according to the Federal Register (87 FR 12875)03/08/2022.
2022.1.1	Table 1: Prohibited	· "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, et
	Table1-5. EU Regulation- on persistent organic pollutants (EC)	· Addition of CAS No. · 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.
2021.1.1	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.
	Table 1: Prohibited	Addition of "PFOA"
	Table 2: Restricted	Additions and reviews were made as a consequence of the amendment to the REACH Annex XVII (Restricted substances).
	Attached Table I-A, B: RoHS exemptions list Annex III, IV	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	Changed to list of substances by legislation and protocol.
	Table 2: Restricted	Amended as Commission Regulation 2019/178/EU of 5 February 2019.
	Attached Table I-A: RoHS exemptions list	
2019.1.1	Table 3: Controlled	Annex IV to the European CLP Regulation CMR Categories 1 and 2 were excluded.
	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." · Changed "chlorinated paraffin" to "polychlorinated normal paraffin" and added CAS numbers and related laws. · 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). · 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" - Addition of CAS number and Related laws and ordinances of "Hexabromocyclododecane" - 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. - 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-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, Dicofof
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 pyrophosphoramide	
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 pyrophosphoramide	
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 (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	

No.	Substance Name	Synonym
50	Dibromodifluoropropane	
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. 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 2795-39-3 29457-72-5 29081-56-9 70225-14-8 56773-42-3 251099-16-8 4151-50-2 31506-32-8 1691-99-2 24448-09-7 307-35-7 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	58-89-9 319-84-6 319-85-7 608-73-1
10	Dieldrin	60-57-1
11	Endrin	72-20-8
12	Heptachlor	76-44-8
13	Endosulfan	115-29-7 959-98-8 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, 3194-55-6, 134237-50-6, 134237-51-7, 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

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"> •Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material. •However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)
2	Mercury	<ul style="list-style-type: none"> •Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material. •However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A) •Import and export prohibitions of specified products with mercury due to Foreign Exchange and Foreign Trade Control Law <p>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.</p>
3	Cadmium	<ul style="list-style-type: none"> •Should not be contained intentionally or as impurities in concentrations greater than 0.01% by weight per homogeneous material. •However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)
4	Hexavalent chromium	<ul style="list-style-type: none"> •Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material. •However, the uses specified in the RoHS Annex are excluded. (see Attached Table I-A)
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

No.	Substance Name	Synonym
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
1	Polychlorinated terphenyls (PCTs) CAS No 75-01-4	Shall not be placed on the market, or used: — as substances, — in mixtures, including waste oils, or in equipment, in concentrations greater than 50 mg/kg (0,005 % by weight).
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>treatment of industrial waters.</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> <p>— one-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) and adhesives,</p> <p>— paints and coatings containing DBT compounds as catalysts when applied on articles,</p> <p>— soft polyvinyl chloride (PVC) profiles whether by themselves or coextruded with hard PVC,</p> <p>— fabrics coated with PVC containing DBT compounds as stabilisers when intended for outdoor applications,</p> <p>— outdoor rainwater pipes, gutters and fittings, as well as covering material for roofing and façades,</p> <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> <p>— textile articles intended to come into contact with the skin,</p> <p>— gloves,</p> <p>— footwear or part of footwear intended to come into contact with the skin,</p> <p>— wall and floor coverings,</p> <p>— childcare articles,</p> <p>— female hygiene products,</p> <p>— nappies,</p> <p>— two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits).</p> <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>
3	Cadmium and its compounds 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> <p>— polymers or copolymers of vinyl chloride (PVC) [3904 10] [3904 21]</p> <p>— polyurethane (PUR) [3909 50]</p> <p>— low-density polyethylene (LDPE), with the exception of low-density polyethylene used for the production of coloured masterbatch [3901</p> <p>— cellulose acetate (CA) [3912 11]</p> <p>— cellulose acetate butyrate (CAB) [3912 11]</p> <p>— epoxy resins [3907 30]</p> <p>— melamine-formaldehyde (MF) resins [3909 20]</p> <p>— urea-formaldehyde (UF) resins [3909 10]</p> <p>— unsaturated polyesters (UP) [3907 91]</p> <p>— polyethylene terephthalate (PET) [3907 60]</p> <p>— polybutylene terephthalate (PBT)</p> <p>— transparent/general-purpose polystyrene [3903 11]</p> <p>— acrylonitrile methacrylate (AMMA)</p> <p>— cross-linked polyethylene (VPE)</p> <p>— high-impact polystyrene</p> <p>— polypropylene (PP) [3902 10]</p> <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.</p> <p>The first and second subparagraphs apply without prejudice to Council Directive 94/62/EC (13) and acts adopted on its basis.</p> <p>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>

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.

Table 2-3. REACH Annex XVII, substances restricted to use in articles


No.	Substance Name	Specified Conditions or Applications
3	Cadmium and its compounds (Continued)	<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> <p>4. By way of derogation, paragraph 1, second subparagraph shall not apply to:</p> <ul style="list-style-type: none"> — mixtures produced from PVC waste, hereinafter referred to as 'recovered PVC'; — 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: <p>—</p> <ul style="list-style-type: none"> (a) profiles and rigid sheets for building applications; (b) doors, windows, shutters, walls, blinds, fences, and roof gutters; (c) decks and terraces; (d) cable ducts; (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. <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"> (a) equipment and machinery for: <ul style="list-style-type: none"> — food production [8210] [8417 20] [8419 81] [8421 11] [8421 22] [8422] [8435] [8437] [8438] [8476 11] — agriculture [8419 31] [8424 81] [8432] [8433] [8434] [8436] — cooling and freezing [8418] — printing and book-binding [8440] [8442] [8443] (b) equipment and machinery for the production of: <ul style="list-style-type: none"> — household goods [7321] [8421 12] [8450] [8509] [8516] — furniture [8465] [8466] [9401] [9402] [9403] [9404] — sanitary ware [7324] — central heating and air conditioning plant [7322] [8403] [8404] [8415] <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"> (a) equipment and machinery for the production of: <ul style="list-style-type: none"> — paper and board [8419 32] [8439] [8441] textiles and clothing [8444] [8445] [8447] [8448] [8449] [8451] [8452] (b) equipment and machinery for the production of: <ul style="list-style-type: none"> — industrial handling equipment and machinery [8425] [8426] [8427] [8428] [8429] [8430] [8431] — road and agricultural vehicles [chapter 87] — rolling stock [chapter 86] — vessels [chapter 89] <p>7. However, the restrictions in paragraphs 5 and 6 shall not apply to:</p> <ul style="list-style-type: none"> — 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, — electrical contacts in any sector of use, where that is necessary to ensure the reliability required of the apparatus on which they are installed. <p>8. Shall not be used in brazing fillers in concentration equal to or greater than 0,01 % by weight.</p> <p>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.</p> <p>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"> (i) metal beads and other metal components for jewellery making; (ii) metal parts of jewellery and imitation jewellery articles and hair accessories, including: <ul style="list-style-type: none"> — bracelets, necklaces and rings, — piercing jewellery, — wrist-watches and wrist-wear, — brooches and cufflinks. <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>

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
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"> — clothing, bedding, towels, hairpieces, wigs, hats, nappies and other sanitary items, sleeping bags, — footwear, gloves, wristwatch straps, handbags, purses/wallets, briefcases, chair covers, purses worn round the neck, — textile or leather toys and toys which include textile or leather garments, — yarn and fabrics intended for use by the final consumer. <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>
5	Diphenylether, octabromo derivative	<p>1. Shall not be placed on the market, or used:</p> <ul style="list-style-type: none"> — as a substance, — as a constituent of other substances, or in mixtures, in concentrations greater than 0,1 % by weight. <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"> — to articles that were in use in the Community before 15 August 2004, — to electrical and electronic equipment within the scope of Directive 2002/95/EC.
6	Polycyclic-aromatic hydrocarbons (PAH) (a) Benzo[a]pyrene (BaP) CAS No 50-32-8 (b) Benzo[e]pyrene (BeP) CAS No 192-97-2 (c) Benzo[a]anthracene (BaA) CAS No 56-55-3 (d) Chrysen (CHR) CAS No 218-01-9 (e) Benzo[b]fluoranthene (BbFA) CAS No 205-99-2 (f) Benzo[j]fluoranthene (BjFA) CAS No 205-82-3 (g) Benzo[k]fluoranthene (BkFA) CAS No 207-08-9 (h) Dibenzo[a,h]anthracene (DBAhA) CAS No 53-70-3	<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"> — more than 1 mg/kg (0,0001 % by weight) BaP, or, — more than 10 mg/kg (0,001 % by weight) of the sum of all listed PAHs. <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"> — 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 , — 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 — 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 . <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"> — sport equipment such as bicycles, golf clubs, racquets — household utensils, trolleys, walking frames — tools for domestic use — clothing, footwear, gloves and sportswear — watch-straps, wrist-bands, masks, head-bands <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>

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
7	<p>Following phthalates</p> <p>(a) Bis(2-ethylhexyl) phthalate (DEHP) CAS No.: 117-81-7</p> <p>(b) Dibutyl phthalate (DBP) CAS No.: 84-74-2</p> <p>(c) Benzyl butyl phthalate (BBP) CAS No.: 85-68-7</p> <p>(d) Diisobutyl phthalate (DIBP) CAS No.: 84-69-5</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>4. Paragraph 3 shall not apply to:</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(d) articles placed on the market before 7 July 2020;</p> <p>(e) measuring devices for laboratory use, or parts thereof;</p> <p>(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);</p> <p>(g) medical devices within the scope of Directives 90/385/EEC, 93/42/EEC or 98/79/EC, or parts thereof;</p> <p>(h) electrical and electronic equipment within the scope of Directive 2011/65/EU;</p> <p>(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;</p> <p>(j) toys and childcare articles covered by paragraphs 1 or 2.</p> <p>5. For the purposes of paragraphs 1, 2, 3 and 4(a),</p> <p>(a) 'plasticised material' means any of the following homogeneous materials:</p> <ul style="list-style-type: none"> — polyvinyl chloride (PVC), polyvinylidene chloride (PVDC), polyvinyl acetate (PVA), polyurethanes, — any other polymer (including, inter alia, polymer foams and rubber material) except silicone rubber and natural latex coatings, — surface coatings, non-slip coatings, finishes, decals, printed designs, — adhesives, sealants, paints and inks. <p>(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.</p> <p>(c) 'childcare article' shall mean any product intended to facilitate sleep, relaxation, hygiene, the feeding of children or sucking on the part of children.</p> <p>6. For the purposes of paragraph 4(b), 'aircraft' means one of the following:</p> <p>(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;</p> <p>(b) a military aircraft.</p>
8	<p>Dimethylfumarate (DMF) CAS No 624-49-7</p>	<p>Shall not be used in articles or any parts thereof in concentrations greater than 0,1 mg/kg.</p> <p>Articles or any parts thereof containing DMF in concentrations greater than 0,1 mg/kg shall not be placed on the market.</p>
9	<p>Phenylmercury compound</p> <p>(a) Phenylmercury acetate CAS No: 62-38-4</p> <p>(b) Phenylmercury propionate CAS No: 103-27-5</p> <p>(c) Phenylmercury 2-ethylhexanoate CAS No: 13302-00-6</p> <p>(d) Phenylmercury octanoate CAS No: 13864-38-5</p> <p>(e) Phenylmercury neodecanoate CAS No: 26545-49-3</p>	<p>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.</p> <p>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.</p>
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 ³) under the test conditions.
11	Chromium VI compounds	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

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
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:</p> <ul style="list-style-type: none"> — the hulls of boats, — cages, floats, nets and any other appliances or equipment used for fish or shellfish farming, — any totally or partly submerged appliances or equipment; <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>
13	Polybromobiphenyls; Polybrominatedbiphenyls (PBB) 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>
14	Methanol 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.
15	Lead carbonates: (a) Neutral anhydrous carbonate (PbCO ₃) CAS No 598-63-0 (b) Trilead-bis(carbonate)-dihydroxide 2Pb CO ₃ -Pb(OH) ₂ CAS No 1319-46-6	<p>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.</p> <p>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.</p>
16	Lead sulphates: (a)PbSO ₄ CAS No 7446-14-2 (b)PbXSO ₄ CAS No 15739-80-7	<p>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.</p> <p>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.</p>

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. 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. 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. 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. 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. 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)(i) 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. 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. 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. 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
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

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 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes \geq 30 W and < 50 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011
1(c)	For general lighting purposes \geq 50 W and < 150 W: 5 mg	
1(d)	For general lighting purposes \geq 150 W: 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter \leq 17 mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1(f)	For special purposes: 5 mg	
1(g)	For general lighting purposes < 30 W with a lifetime equal or above 20 000 h: 3,5 mg	Expires on 31 December 2017
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 31 December 2011; 4 mg may be used per lamp after 31 December 2011
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter \leq 9 mm and \leq 17 mm (e.g. T5): 5 mg	Expires on 31 December 2011; 3 mg may be used per lamp after 31 December 2011
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 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5)	Tri-band phosphor with long lifetime \geq 25 000 h): 8 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
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)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
3(a)	Short length (≤ 500 mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length (> 500 mm and $\leq 1\,500$ mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length ($> 1\,500$ mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a)	Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index $R_a > 60$:	
4(b)-I	$P \leq 155$ W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(b)-II	155 W $< P \leq 405$ W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b)-III	$P > 405$ W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
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	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II	155 W $< P \leq 405$ W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III	$P > 405$ W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	
4(g)	Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, where the mercury content shall be limited as follows:	Expires on 31 December 2018
	(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;	
	(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.	

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	Expires on: — 21 July 2024 for category 11.
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	Expires on: — 21 July 2024 for category 11.
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	Expires on: — 21 July 2024 for category 11.
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	Expires on: — 21 July 2024 for category 11.
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	Expires on: — 21 July 2024 for category 11.
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Does not apply to applications covered by point 7(c)-I and 7(c)-IV of this Annex. Expires on: — 21 July 2024 for category 11.
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	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
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors	Expires on: — 21 July 2021 for categories 1-7 and 10; — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
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	Expires on: — 21 July 2024 for category 11.
8(b)-I	Cadmium and its compounds in electrical contacts used in: — circuit breakers, — thermal sensing controls, — thermal motor protectors (excluding hermetic thermal motor protectors), — AC switches rated at: — 6 A and more at 250 V AC and more, or — 12 A and more at 125 V AC and more, — DC switches rated at 20 A and more at 18 V DC and more, and — switches for use at voltage supply frequency \geq 200 Hz.	
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: — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic medical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.
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 — designed to operate fully or partly with electrical heater, having an average utilised power input \geq 75 W at constant running conditions, — designed to fully operate with non-electrical heater.	Applies to categories 1-7 and 10 and expires on 21 July 2021.
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: — 21 July 2023 for category 8 in vitro diagnostic medical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments and for category 11, — 21 July 2021 for other subcategories of categories 8 and 9.
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

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
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	
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: — a semiconductor technology node of 90 nm or larger; — a single die of 300 mm ² or larger in any semiconductor technology node; — stacked die packages with die of 300 mm ² or larger, or silicon interposers of 300 mm ² 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	
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) ₂ MgSi ₂ O ₇ :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 ₂ O ₅ :Pb)	Expires on: — 21 July 2021 for categories 1-4,6,7 and 10 — 21 July 2024 for category 11.
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 ₂ O ₅ :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

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
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: — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 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: — 21 July 2021 for categories 1-7 and 10, — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic medical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and 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	
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
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: — 21 July 2021 for categories 1,2,6,7 and 10; — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 21 July 2024 for category 9 industrial monitoring and control instruments

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
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	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	Expires on: — 21 July 2021 for categories 1-5, 7 and 10, — 21 July 2023 for category 8 in vitro diagnostic medical devices, — 21 July 202 for category 11.
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	Expires on: — 21 July 2024 for category 11.
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: — 21 July 2021 for categories 1-7 and 10; — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 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	
39(a)	Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm ² of display screen area)	Expires for all categories on 31 October 2019
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013
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: —31 March 2022 for categories 1 to 7, 10 and 11; —21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; —21 July 2023 for category 8 in vitro diagnostic medical devices; —21 July 2024 for category 9 industrial monitoring and control instruments.

Attached Table I-A : RoHS Exemptions List Annex III
(reflected to the Commission Directive announced on 15 January 2021 2021/647/EU.)

No.	Exemption	Scope and dates of applicability
42	Lead in bearings and bushes of diesel or gaseous fuel powered internal combustion engines applied in non-road professional use equipment: — with engine total displacement ≥ 15 litres; — or — 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.	Applies to category 11, excluding applications covered by entry 6(c) of this Annex. Expires on 21 July 2024.
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: (a) 30 % by weight of the rubber for (i) gasket coatings; (ii) solid-rubber gaskets; or (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. (b) 10 % by weight of the rubber for rubber- containing components not referred to in point (a). 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	Applies to category 11 and expires on 21 July 2024.
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 the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).

(³) Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).

(⁴) Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).

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.	
Table2-2. Montreal Protocol/	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 µm.	

Attached Table I-B : RoHS Exemptions List Annex IV
(reflected to the Commission Directive announced on 5 March 2020 2020/366/EU.)

No.	Exemption	Scope and dates of applicability
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.
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> <ul style="list-style-type: none"> (a) solders on printed circuit boards; (b) termination coatings of electrical and electronic components and coatings of printed circuit boards; (c) solders for connecting wires and cables; (d) solders connecting transducers and sensors. <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"> — solders, — termination coatings of electrical and electronic components and printed circuit boards, — connections of electrical wires, shields and enclosed connectors, <p>which are used in</p> <ul style="list-style-type: none"> (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 (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. 	Expires on 30 June 2020.

Attached Table I-B : RoHS Exemptions List Annex IV
(reflected to the Commission Directive announced on 5 March 2020 2020/366/EU.)

No.	Exemption	Scope and dates of applicability
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
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.

Attached Table I-B : RoHS Exemptions List Annex IV
(reflected to the Commission Directive announced on 5 March 2020 2020/366/EU.)

No.	Exemption	Scope and dates of applicability
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	<p>Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies:</p> <p>(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;</p> <p>(b) measurements of solutions where an accuracy of $\pm 1\%$ of the sample range and where high corrosion resistance of the electrode are required for any of the following:</p> <p>(i) solutions with an acidity $< \text{pH } 1$;</p> <p>(ii) solutions with an alkalinity $> \text{pH } 13$;</p> <p>(iii) corrosive solutions containing halogen gas;</p> <p>(c) measurements of conductivities above 100 mS/m that must be performed with portable instruments.</p>	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.
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 mm²;</p> <p>(iii) a multiplication factor larger than $1,3 \times 10^3$.</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 mm² for detecting electrons or ions;</p> <p>(e) a multiplication factor larger than $4,0 \times 10^7$.</p>	

Attached Table I-B : RoHS Exemptions List Annex IV
(reflected to the Commission Directive announced on 5 March 2020 2020/366/EU.)

No.	Exemption	Scope and dates of applicability
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.