

List of Relevant Chemical Substances

Ver. 6th

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December 25th, 2023

Mitutoyo Corporation

【Revision history】

Ver.	Revision date	Revised content
Ver.1st	July 1, 2012	New publication
Ver.1.1	Nov. 21,2012	Clerical corrections
Ver. 2nd	August 25, 2017	<p>1. Management Standards for Chemical Substances</p> <ul style="list-style-type: none"> • Add No. • (2)Additional prohibited scheduled substance <p>(1)Prohibited substances No.2, No.3, No.11, and No.12 Revised laws and regulations (examples) No.6 Changed substance name from "some tributyltins (TBTs) and triphenyltins (TPTs)" to "trisubstituted organotin compounds" No.11 Change the number of chlorine from 3 or more to 2 or more No.18 to No.26 Add new</p> <p>(2)Additional prohibited scheduled substance No.1 to No.2 Add new</p> <p>(3)Controlled substances No.1 Changed substance name from "Beryllium" to "Beryllium Oxide" No.4 Addition of laws and regulations (examples) No.5 to No.7 Add new</p> <p>2. Restrictions on the use of prohibited substances Addition of new substances</p> <p>4. Prohibited substances for batteries Deleted "Button battery 2% or less" according to revised battery directive</p> <p>5-1. The exemptions of RoHS II (2011/65/EU) Annex III Updated as of the end of July 2017</p> <p>5-2. The exemptions of RoHS II (2011/65/EU) Annex IV Updated as of the end of July 2017</p> <p>6. Detailed lists of relevant chemical substances</p> <ul style="list-style-type: none"> • Add No. • Addition of new substance
Ver.3rd	March 1, 2019	<p>1. Management Standards for Chemical Substances</p> <p>(2)Delete prohibited substances, (1)Migration to prohibited substances</p> <p>2. Restrictions on the use of prohibited substances Removed restrictions on the use of prohibited scheduled substance and moved to use restrictions on prohibited substances</p> <p>5-1. The exemptions of RoHS II (2011/65/EU) Annex III Updated as of the end of February 2019</p> <p>5-2. The exemptions of RoHS II (2011/65/EU) Annex IV Updated as of the end of February 2019</p>
Ver.4th	June 9, 2021	<p>1. Management Standards for Chemical Substances</p> <p>(1)Prohibited substances</p> <ul style="list-style-type: none"> • Addition of item subject to scope • Addition of relevant regulations • Unification of words (Intentional addition) • No.27 to 30 divided in 4 Phthalates • No.32 add PFOA-related compounds • No.8, No.35 to 38 Addition of substances from US TSCA PBT final rules <p>(2)Controlled substances</p> <ul style="list-style-type: none"> • Addition of No.6 Di-n-octyl phthalate(DNOP) and No.8 Di-isodecyl phthalate (DIDP) • Revision of the date from February 2019 to May 2021

Ver.	Revision date	Revised content
Ver.4th	June 9, 2021	(Continue) 2. Restrictions on the use of prohibited substances <ul style="list-style-type: none"> • Addition of prohibited applications and exemptions 4. Prohibited substances for batteries <ul style="list-style-type: none"> • Addition of lead • Revision of scope • Revision of restricted value 5-1. The exemptions of RoHS II (2011/65/EU) Annex III <ul style="list-style-type: none"> • Updated to the latest information as of the end of May 2021. 5-2. The exemptions of RoHS II (2011/65/EU) Annex IV <ul style="list-style-type: none"> • Updated to the latest information as of the end of May 2021. 6. Detailed lists of relevant chemical substances (1) Prohibited substances <ul style="list-style-type: none"> • No.27 to 30 divided in each of 4 Phthalates • No.8, No.35 to 38 Addition of substances from US TSCA PBT final rules (2) Controlled substances <ul style="list-style-type: none"> • Addition of No.6 Di-n-octyl phthalate(DNOP) and No.8 Di-isodecyl phthalate(DIDP)
Ver.5th	November 7, 2022	Added the table of contents Changed the construction (Management Standards for Chemical Substances and Reference information) 1. Management Standards for Chemical Substances <ol style="list-style-type: none"> 1) Restrictions on the use of prohibited substances <ul style="list-style-type: none"> No.31 (PFOA and its salts), No.32 (PFOA-related substances) EU REACH Regulation → EU POPs Regulation (Correction of errors) 2) Controlled substances <ul style="list-style-type: none"> Added the URL which the substances list of REACH regulation by ECHA. 3) Added the substances list that may have added to some regulations by the next. Reference (4)-1 List of exemptions [RoHS Directive (2011/65/EU) Annex III] Updated Reference (4)-2 List of exemptions [RoHS Directive (2011/65/EU) Annex IV] Updated
Ver.6th	December 25th,	1. Management Standards for Chemical Substances (1) Prohibited substances <ol style="list-style-type: none"> 1. New substances <ul style="list-style-type: none"> • MOAH (France the prohibition of the use of mineral oils) • PFHxS (EU POPs regulation) 2. Modify <ul style="list-style-type: none"> • Review of Battery regulations <ul style="list-style-type: none"> EU Battery Directive (2006/66/EC) → EU Battery Regulation ((EU) 2023/1542) China GB 24427-2009 → China GB 24427-2021 • Removed the phrase "more than 2 chlorine atoms" from the section on Polychlorinated Naphthalenes and Other polychlorinated Naphthalenes. 3. Added <ul style="list-style-type: none"> • PFOS (China 2023 List of Key Controlled New Pollutants) • PFOA (China 2023 List of Key Controlled New Pollutants) • PFHxS (EU REACH Regulation (SVHC), POPs regulation, China 2023 List of Key Controlled New Pollutants) (3) Upcoming regulated substances <ol style="list-style-type: none"> 1. New substances <ul style="list-style-type: none"> • Trixylyl phosphate (EU REACH regulation, restricted substances) • Creosote (EU REACH regulation, restricted substances) • MOSH (France the prohibition of the use of mineral oils) • Microplastic (EU REACH regulation, restricted substances)

Ver.	Revision date	Revised content
Ver.6th	December 25th,	<p>(Continue)</p> <p>2. Modify •added some text to "Reference laws and regulations" and "notes"</p> <p>Reference 1. Restrictions on the use of prohibited substances</p> <p>1. New substances •(39) MOAH •(40) PFHxS</p> <p>2. Modify •Removed the phrase "more than 2 chlorine atoms" from the section on Polychlorinated Naphthalenes and Other polychlorinated Naphthalenes.</p> <p>Reference 3. Prohibited substances for batteries</p> <p>1. Modify •Revision of lead regulatory limits in response to updates in European battery regulations. •Revision of Classification of batteries</p> <p>Reference 4-1 The exemptions of EU RoHS Directive(2011/65/EU) (ANNEX III of EU RoHS)</p> <p>1. Revision and added •39(a), 39(b)</p> <p>Reference 5. Detailed Substances List (These lists are not comprehensive)</p> <p>1. New substances •MOAH •PFHxS</p> <p>2. Modify Removed the phrase "more than 2 chlorine atoms" from the section on Polychlorinated Naphthalenes and Other polychlorinated Naphthalenes.</p>

1. Management Standards for Chemical Substances

(1) Prohibited substances

No.	Substance name	Scope	Control Value	Reference laws and regulations
1	Cadmium/Cadmium compounds	All, except batteries	100ppm	EU REACH Regulation (No.1907/2006) EU RoHS Directive (2011/65/EU) Law for the Promotion of Effective Utilization of Resources (Japan) Rules on the Restriction of Hazardous Substances in Electrical Appliances and Electronic Products (China) Electronic Waste Recycling Act (California RoHS)
		Batteries	10ppm	EU Battery Regulation (2006/66/EC) China GB 24427-2021, Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries
2	Chromium (VI) Compounds	All	1,000ppm	EU RoHS Directive(2011/65/EU) Law for the Promotion of Effective Utilization of Resources (Japan) Rules on the Restriction of Hazardous Substances in Electrical Appliances and Electronic Products (China) Electronic Waste Recycling Act (California RoHS)
3	Lead/LeadCompounds	All, except batteries and Cables/cords with thermoset or thermoplastic coatings	1,000ppm	EU REACH Regulation (No.1907/2006) EU RoHS Directive(2011/65/EU) Law for the Promotion of Effective Utilization of Resources (Japan) Rules on the Restriction of Hazardous Substances in Electrical Appliances and Electronic Products (China)
		Cables/cords with thermoset or thermoplastic coatings	300ppm of surface coating material	Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) Case Law
		Batteries	40ppm	EU Battery Regulation (2006/66/EC) China GB 24427-2021, Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries
4	Mercury/Mercury Compounds	All, except batteries	1,000ppm	EU RoHS Directive(2011/65/EU) Law for the Promotion of Effective Utilization of Resources (Japan) Rules on the Restriction of Hazardous Substances in Electrical Appliances and Electronic Products (China) Electronic Waste Recycling Act (California RoHS)
		Batteries	1ppm	EU Battery Regulation (2006/66/EC) Products containing Mercury Regulations SOR/2014-254 (Canada) Restrictions on the Manufacture, Import, and Sale of Dry Cell Batteries (Taiwan) China GB 24427-2021, Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries
5	Tributyltin oxide(TBTO)	All	Intentionally added	EU REACH Regulation (No.1907/2006) Japan Chemical Substance Control Law
6	Tri-substituted organostannic compounds	All	Intentionally added	EU REACH Regulation (No.1907/2006) Japan Chemical Substance Control Law
7	Polybrominated Biphenyls (PBBs)	All	1,000ppm	EU REACH Regulation (No.1907/2006) EU RoHS Directive(2011/65/EU) Law for the Promotion of Effective Utilization of Resources (Japan) Rules on the Restriction of Hazardous Substances in Electrical Appliances and Electronic Products (China)

(1) Prohibited substances

No.	Substance name	Scope	Control Value	Reference laws and regulations
8	Polybrominated Diphenyl Ethers (PBDEs)	All	1,000ppm Intentionally added*3 (DecaBDE)	EU REACH Regulation (No.1907/2006) EU RoHS Directive(2011/65/EU) Stockholm convention on Persistent Organic Pollutants Law for the Promotion of Effective Utilization of Resources (Japan) Japan Chemical Substance Control Law Rules on the Restriction of Hazardous Substances in Electrical Appliances and Electronic Products (China) TSCA PBT Regulation (USA)
9	Polychlorinated Biphenyls (PCBs)	All	Intentionally added	Stockholm convention on Persistent Organic Pollutants EU Persistent Organic Pollutants (POPs) Regulation (No.2019/1021) EU REACH Regulation (No.1907/2006) Japan Chemical Substance Control Law USA Toxic Substances Control Act (TSCA)
10	Polychlorinated Terphenyls (PCTs)	All	Intentionally added	EU REACH Regulation (No.1907/2006)
11	Polychlorinated Naphthalenes and Other polychlorinated Naphthalenes	All	Intentionally added	Stockholm convention on Persistent Organic Pollutants EU Persistent Organic Pollutants (POPs) Regulation (No.2019/1021) Japan Chemical Substance Control Law
12	Short Chain Chlorinated Paraffins (SCCPs)(C10-13)	All	1,000ppm	EU REACH Regulation (No.1907/2006) Stockholm convention on Persistent Organic Pollutants EU Persistent Organic Pollutants (POPs) Regulation (No.2019/1021)
13	Asbestos	All	1,000ppm	EU REACH Regulation (No.1907/2006) Japan Industrial Safety and Health Law USA Toxic Substances Control Act (TSCA)
14	Azocolourants and azodyes which form certain aromatic amines	Textiles and Leather	30ppm	EU REACH Regulation (No.1907/2006)
15	Ozone Depleting Substances	All	Intentionally added	Montreal Protocol on Substances that Deplete the Ozone Layer EU Regulation on substances that deplete the ozone layer (No.1005/2009) Japan Ozone Layer Protection Law USA Clean Air Act
16	Formaldehyde	All	Intentionally added	Germany Chemikalien-Verbotsverordnung, Section 3 Denmark Statutory Order No. 289 of June 22, 1983 USA/California CARB rule
		Textiles	75ppm	Austria BGB 1 1990/194: Formaldehydverordnung §2, 12/2/1990
17	Radioactive Substances	All	Intentionally added	EU-D 【96/29/Euratom】 EU Directive 2013/59/Euratom Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors Japan Law Concerning Prevention from Radiation Hazards due to Radio-Isotopes, etc.
18	Hexabromocyclododecane (HBCD)	All	Intentionally added and 100ppm	Stockholm convention on Persistent Organic Pollutants EU Persistent Organic Pollutants (POPs) Regulation (No.2019/1021) Japan Chemical Substance Control Law
19	Dibutyltin compounds (DBT)	All	1,000ppm	EU REACH Regulation (No.1907/2006)

(1) Prohibited substances

No.	Substance name	Scope	Control Value	Reference laws and regulations
20	Diocetyl compounds (DOT)	<ul style="list-style-type: none"> textile and leather articles intended to come into contact with the skin, two-component room temperature vulcanisation moulding kits 	1,000ppm	EU REACH Regulation (No.1907/2006)
21	Perfluorooctane sulfonates (PFOS)	All	Intentionally added and 1,000ppm	Stockholm convention on Persistent Organic Pollutants EU Persistent Organic Pollutants (POPs) Regulation (No.2019/1021) Japan Chemical Substance Control Law China 2023 List of Key Controlled New Pollutants
22	Fluorinated greenhouse gases (HFC, PFC, SF6)	All	Intentionally added	EU REGULATION No 517/2014 on fluorinated greenhouse gases
23	2-Benzotriazol-2-yl-4,6-di-tert-butylphenyl	All	Intentionally added	EU REACH Regulation (No.1907/2006) Japan Chemical Substance Control Law
24	Dimethyl Fumarate(Fumaric Acid Dimethyl Ester)(DMF)	All	0.1ppm	EU REACH Regulation (No.1907/2006)
25	Polycyclic Aromatic Hydrocarbons (PAH)	Rubber or plastic parts of articles that come into direct, prolonged or repetitive skin or oral cavity contact	1ppm	EU REACH Regulation (No.1907/2006)
26	N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene (BNST)	All	Intentionally added	Canada Prohibition of Certain Toxic Substances. Regulations,2012 (SOR/212-282)
27	Di(2-ethylhexyl) phthalate (DEHP)	All	1,000ppm	EU RoHS Directive(2011/65/EU) EU REACH Regulation (No.1907/2006)
28	Butylbenzyl phthalate (BBP)	All	1,000ppm	EU RoHS Directive(2011/65/EU) EU REACH Regulation (No.1907/2006)
29	Dibutyl phthalate (DBP)	All	1,000ppm	EU RoHS Directive(2011/65/EU) EU REACH Regulation (No.1907/2006)
30	Diisobutyl phthalate (DIBP)	All	1,000ppm	EU RoHS Directive(2011/65/EU) EU REACH Regulation (No.1907/2006)
31	Perfluorooctanoic acid (PFOA) and its salts	All	25ppb of PFOA including its salts in article or mixture	Stockholm convention on Persistent Organic Pollutants Japan Chemical Substance Control Law EU POPs Regulation (No.2019/1021)
32	PFOA-related substances	All	1,000ppb of one or a combination of PFOA related substances, in article or mixture	USA PFOA Stewardship Program China 2023 List of Key Controlled New Pollutants
33	Restricted substances regulated by ANNEX XVII of REACH Regulation (EC) No 1907/2006*1	Conforms to the regulations	Conforms to the regulations	EU REACH Regulation (No.1907/2006) https://echa.europa.eu/substances-restricted-under-reach
34	Substances subject to authorisation of Annex XIV of REACH Regulation (EC) No 1907/2006*1	All	Intentionally added	EU REACH Regulation (No.1907/2006) https://echa.europa.eu/authorisation-list
35	2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)*3	All	Intentionally added	Japan Chemical Substance Control Law TSCA PBT Regulation (USA)
36	Phenol, isopropylated phosphate (3:1) (PIP (3:1))*3	All	Intentionally added	TSCA PBT Regulation (USA)

(1) Prohibited substances

No.	Substance name	Scope	Control Value	Reference laws and regulations
37	Pentachlorothiophenol (PCTP)*3	All	10,000ppm	TSCA PBT Regulation (USA)
38	Hexachlorobutadiene (HCBd)*3	All	Intentionally added	Stockholm convention on Persistent Organic Pollutants Japan Chemical Substance Control Law TSCA PBT Regulation (USA)
39	MOAH	Oils produced from feedstock derived from petroleum hydrocarbons used in the manufacture of inks. Printed packaging and paper manufactured or imported.	1%	France the prohibition of the use of mineral oils
40	PFHxS	All	Intentionally added	EU REACH Regulation (No.1907/2006) China 2023 List of Key Controlled New Pollutants EU POPs regulation *For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFHxS or any of its salts equal to or below 0,025 mg/kg (0,000025 % by weight) where they are present in substances, mixtures or articles. *For the purposes of this entry, Article 4(1), point (b), shall apply to the sum of concentrations of all PFHxS-related compounds equal to or below 1 mg/kg (0,0001 % by weight) where they are present in substances, mixtures or articles. *For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFHxS, its salts and PFHxS-related compounds equal to or below 0,1 mg/kg (0,00001 % by weight) where it is present in concentrated firefighting foam mixtures that are to be used or are used in the production of other firefighting foam mixtures. (This exemption shall be reviewed and assessed by the Commission no later than 28 August 2026.)

(2) Controlled substances

No.	Substance name	Reference laws and regulations
1	Beryllium oxide	DIGITALEUROPE/CECED/AeA/EERA Guidance
2	Nickel	EU REACH Regulation (No.1907/2006)
3	Brominated Flame Retardants (other than PBBs, PBDEs or HBCD)	JS709 IPC-4101 IEC 61249-2-21
4	Polyvinyl chloride(PVC)	EU REACH Regulation (No.1907/2006)
5	Chlorine-based fire retardant	JS709 IPC-4101 IEC 61249-2-21
6	Bis(n-octyl) phthalate (DNOP)	Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) Case Law
7	Diisononyl phthalate (DINP)	Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) Case Law
8	Di-isodecyl phthalate (DIDP)	Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) Case Law
9	Perchlorate	Best Management Practices for Perchlorate Materials
99	EU REACH Regulation SVHCs, listed in Candidate list for authorization*1*2	EU REACH Regulation (No.1907/2006) https://echa.europa.eu/candidate-list-table

(3) Added the substances list that may have added to some regulations by the next.

No.	Substance name	Scope	Reference laws and regulations	note
1	Medium-chain chlorinated paraffins (MCCP) (with carbon chain lengths within the range from C14 to C17)	All	It will be added to Annex A in POPs regulation or/and EU RoHS) *MCCP is already added in EU REACH regulation (SVHC)	METI etc. While MCCP is currently identified as an SVHC (under "Controlled substances"), it is important to note that potential amendments to other regulations may lead to its reclassification as a prohibited substance.
2	C9-C21 PFCAs	All	It will be added to Annex A) *C9-14 PFCAs are already added in EU REACH regulation (SVHC)	METI etc. While C9-14 PFCAs are currently identified as an SVHC (under "Controlled substances"), it is important to note that potential amendments to other regulations may lead to its reclassification as a prohibited substance.
3	Tetrabromobisphenol A (TBBPA)	All	It will be added to EU RoHS. *TBBPA is already added in EU REACH regulation (SVHC)	METI etc. While MCCP is currently identified as an SVHC (under "Controlled substances"), it is important to note that potential amendments to other regulations may lead to its reclassification as a prohibited substance.
4	Dechlorane Plus	All	It will be added to Annex A in POPs regulation) *Dechlorane Plus is already added in EU REACH regulation (SVHC)	Stockholm convention on Persistent Organic Pollutants. While Dechlorane Plus is currently identified as an SVHC (under "Controlled substances"), it is important to note that potential amendments to ANNEX A in Stockholm convention on Persistent Organic Pollutants may lead to its reclassification as a prohibited substance.
5	UV-328	All	It will be added to Annex A in POPs regulation) *UV-328 is already added in EU REACH regulation (SVHC)	Stockholm convention on Persistent Organic Pollutants. While UV-328 is currently identified as an SVHC (under "Controlled substances"), it is important to note that potential amendments to ANNEX A in Stockholm convention on Persistent Organic Pollutants may lead to its reclassification as a prohibited substance.
6	perfluoroalkyl substances and polyfluoroalkyl substances ; per- and polyfluoroalkyl substances(PFAS)	All	*It has already been published US TSCA(8(a)(7)) in the Federal Register. It is Under continuing discussions in EU REACH regulation (restriction substances), the Model Toxics in Packaging Legislation, State of Minnesota, State of Maine, etc.	
7	Trixylyl phosphate	All	EU REACH regulation (Restriction substances)	
8	Creosote	treated wood	EU REACH regulation (Restriction substances)	

(3) Added the substances list that may have added to some regulations by the next.

No.	Substance name	Scope	Reference laws and regulations	note
9	MOSH	Oils produced from feedstock derived from petroleum hydrocarbons used in the manufacture of inks. Printed packaging and paper manufactured or imported. 0.1%	France the prohibition of the use of mineral oils	From January 1st, 2023
10	Microplastic	All microplastics measuring 5mm or less, along with their mixtures: Intentional addition.	EU REACH regulation(Restriction substances) [(EU) 2023/2055] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R2055	Depending on the product type, a grace period of up to 12 years may be granted for the development or transition to alternative technologies. Exclusions apply to items used within industrial facilities, pharmaceuticals, in vitro diagnostic equipment, and certain other applications. However, suppliers of these exempted items are required to provide information on handling, including use and disposal.

*1 Complies with the latest information published by the EU REACH Regulation and European Chemical Agency (ECHA).

*2 If any of the SVHC listed in the "Candidate List of Substances of Very High Concern for Authorisation" published by the European Chemicals Agency (ECHA) is found to be contained at a level of "0.1 wt%" or more, please inform to Mitutoyo Corporation.

*3 Restrictions on five persistent, bioaccumulative and toxic (PBT) chemicals, mixtures containing such chemicals, and products/articles under Section 6(h) of the U.S. Toxic Substances Control Act (TSCA). Phase-out prohibited uses and exempted uses are excluded.

Note: Laws and regulations in this list is as of May 2021. For details please refer to the latest version of the respective laws and regulations, as they are subject to change.

Reference

1. Restrictions on the use of prohibited substances

(1) Cadmium/Cadmium compounds

Application	
Prohibited application	Packaging components and materials (See Table 3) Batteries (See Table 4) Other applications except those specified in Exemption e.g. <ul style="list-style-type: none"> - Stabilizers, pigments, dyes contained in plastic materials (Insulation of electrical wire, cord, cable. Resins, labels etc.) - Paints and inks - Solders, whose cadmium concentration is more than 20ppm - Surface treatment (electro plating, electroless plating etc.), coating - Fluorescent lamps (small- sized, straight- tube) - Electrical contact points such as DC motors, switches and relays etc. - Fuses (Fuse elements of thermal fuses) - Glass. Pigments and dyes used for glass - Optical glass - Parts, composed of zinc- containing metal (e.g. brass, hot dip galvanizing, etc.) whose cadmium concentration is more than 100 ppm - Heat stabilizers - Bearing alloys
Exempt applications	Applications specified in exempt application list (See Table 5)

(2) Hexavalent chromium compounds

Application	
Prohibited application	Packaging components and materials (See Table 3) Other applications except those specified in Exemption e.g. <ul style="list-style-type: none"> - Constituents of parts or materials (e.g. inks, paints, additives) - Residues in the surfaces of screws, steel sheets, etc. that are processed with plating or conversion coating - Pigment - Catalyst <p style="text-align: right;">etc.</p>
Exempt application	Applications specified in exempt application list (See Table 5)

(3) Lead/Lead compounds

Application	
Prohibited application	Packaging components and materials (See Table 3) Cables and cords with thermoset or thermoplastic coatings Batteries (See Table 4) Other applications except those specified in Exemption e.g. <ul style="list-style-type: none"> - Paints, pigments, dyes, inks - Stabilizers in plastic or rubber materials. - Solders - Platings (including electroless plating films such as electroless nickel plating and electroless gold plating) - Optical glass, filter glass - External electrodes of parts - Resin additives - Metal alloy - Lubricant - Ferroelectrics - Vulcanizing agent - Curing agent - Free- cutting steels and Free- machining alloy - Materials for battery <p style="text-align: right;">etc.</p>
Exempt application	Applications specified in exempt application list (See Table 5)

(4) Mercury/Mercury compounds

Applications	
Prohibited applications	Packaging components and materials (See Table 3) Batteries (See Table 4) Other applications except those specified in Exemption e.g. <ul style="list-style-type: none"> - Paints, pigments, dyes, inks - Harmonizer in plastics - Fluorescent bulb - Contact point material - Anti-corrosion - Antibacterial treatment - Switches <div style="text-align: right;">etc.</div>
Exempt applications	Applications specified in exempt application list(See Table5)

(5) Tributyltin oxide(TBTO)

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Paints, pigments and preservatives - Antifungal agent - Antistaining - Refrigerant - Foaming agent - Extinguishant - Solvent cleaner <div style="text-align: right;">etc.</div>

(6) Tri- substituted organostannic compounds

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Paints, pigments and stabilizers - Antioxidant - Antibacterial agent - Antifungal agent - Antistaining - Preservatives <div style="text-align: right;">etc.</div>

(7) Polybrominated biphenyls (PBB)

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Flame retardants contained in plastics <div style="text-align: right;">etc.</div>
Exempt applications	Applications specified in exempt application list(See Table5)

(8) Polybrominated diphenylethers (PBDE)

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Flame retardants contained in plastics <div style="text-align: right;">etc.</div>
Exempt applications	Applications specified in exempt application list(See Table5)

(9) Polychlorinated biphenyls (PCB)

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Flame retardants contained in plastics - Electrical insulation medium - Solvent - Electrolytic solution - Plasticizer - Dielectric sealant <div style="text-align: right;">etc.</div>

(10) Polychlorinated terphenyls (PCT)

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Flame retardants contained in plastics - Insulation oil - Lubricant oil - Electrical insulation medium - Solvent - Electrolytic solution - Plasticizer - Dielectric sealant <div style="text-align: right;">etc.</div>

(11) Polychlorinated naphthalenes(PCN) and other Polychlorinated naphthalenes

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Flame retardants contained in plastics - Lubricant oil - Paint - Stabilizer (electric characteristic, flame- resistant, water- resistant) - Insulator <div style="text-align: right;">etc.</div>

(12) Short- chain Chlorinated paraffins (C10- 13)

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Enclosures (Cabinets etc.) - Flame retardants for printed wiring board - Plasticizers <div style="text-align: right;">etc.</div>

(13) Asbestos

Applications	
Prohibited applications	All applications e.g. <ul style="list-style-type: none"> - Insulator - Filler - Pigment and Paint - Talc <div style="text-align: right;">etc.</div>

(14) Azocolourants and azodyes which form certain aromatic amines

Applications	
Prohibited applications	<p>The pigments used in parts or articles which may come into direct and prolonged contact with the human skin (e.g. ear phones, belts, straps etc.) , which release certain aromatic amines listed in Table6 by testing methods according to Annex XVII of RECAH Regulation</p> <p>e.g.</p> <ul style="list-style-type: none"> - Additives for textile, fabrics and leather materials - Pigment, dyes, colorants <p style="text-align: right;">etc.</p>

(15) Ozone depleting substances

Applications	
Prohibited applications	<p>All applications</p> <p>e.g.</p> <ul style="list-style-type: none"> - Components or materials processed with ODS during foaming or other processes. - Refrigerant - Extinguishant - Solvent cleaner <p style="text-align: right;">etc.</p>

(16) Formaldehyde

Applications	
Prohibited applications	- Wooden products made from fiberboard, particleboard
Exempt applications	- Other applications except those specified in prohibited applications

(17) Radioactive substances

Applications	
Prohibited applications	All applications

(18) Hexabromocyclododecane (HBCD)

Applications	
Prohibited applications	<p>All applications</p> <p>e.g.</p> <ul style="list-style-type: none"> - Flame retardants (Mainly used for foam polystyrene and some fibers) <p style="text-align: right;">etc.</p>

(19) Dibutyltin compounds (DBT)

Applications	
Prohibited applications	<p>All applications</p> <p>e.g.</p> <ul style="list-style-type: none"> - Stabilizer for PVC、Curing catalyst for silicone resin and urethane resin <p style="text-align: right;">etc.</p>

(20) Dioctyltin compounds (DOT)

Applications	
Prohibited applications	<p>The following applications;</p> <ol style="list-style-type: none"> (1) Textile articles intended to come into contact with the skin (2) Wall and floor coverings (3) Two- component room temperature vulcanisation moulding kits (RTV- 2 moulding kits) <p style="text-align: right;">etc.</p>

(21) Perfluorooctane sulfonates (PFOS)

Applications	
Prohibited applications	All applications except for the following exemptions
Exempt applications	- Photoresist for photolithography processes - Photographic coatings applied to films, papers, or printing plates

(22) Fluorinated greenhouse gases (HFC、PFC、SF6)

Applications	
Prohibited applications	All applications e.g. - Refrigerant, foaming agent, mounted substrate, cleaner etc.

(23) 2- Benzotriazol- 2- yl- 4,6- di- tert- butylphenyl

Applications	
Prohibited applications	All applications e.g. - Adhesive, Paint、 Printing ink, Plastic, Ink ribbon, putty, Coating etc.

(24) Dimethyl Fumarate (Fumaric Acid Dimethyl Ester) (DMF)

Applications	
Prohibited applications	All applications e.g. - Moisture- proof agent, Antifungal agent etc.

(25) Polycyclic Aromatic Hydrocarbons (PAH)

Applications	
Prohibited applications	The following applications; 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. etc.

(26) N- Phenyl- benzenamine reaction products with styrene and 2,4,4- trimethylpentene (BNST)

Applications	
Prohibited applications	All applications except for the following exemptions
Exempt applications	- Additives to rubber except tires

(27), (28), (29) and (30) Four phthalates

Applications	
Prohibited applications	All applications e.g. Plasticizer, Dye, Pigment, Paint, Ink, adhesive, lubricant etc.

(31) Perfluorooctanoic acid (PFOA) and its salts and (32) PFOA- related substances

Applications	
Prohibited applications	All applications; e.g. - Textiles, photographic coatings applied to films, paper or printing plates and other coated consumer products - Greases, textiles and other coated consumer products, and emulsifiers used for manufacturing the Fluoropolymers and fluoroelastomers etc.

(33) Substance, group of substances or mixtures restricted by Annex XVII of EU REACH Regulation

Applications	
Prohibited applications	All applications or conditions specified by Annex XVII of EU REACH Regulation

(34) Substances subject to authorization of Annex XIV of EU REACH Regulation

Applications	
Prohibited applications	All applications

(35) 2,4,6- Tris(tert- butyl)phenol (2,4,6- TTBP)

Applications	
Prohibited applications	All applications

(36) Phenol, isopropylated phosphate (3:1) (PIP (3:1))

Applications	
Prohibited applications	All except the following excluded applications and progressively prohibited uses
Exempt applications	<ul style="list-style-type: none"> - Use in aviation hydraulic fluid in hydraulic systems and use in specialty hydraulic fluids for military applications - Use in lubricants and greases - Use in new and replacement parts for the aerospace and automotive industries - Use as an intermediate in the manufacture of cyanoacrylate glue - Use in specialized engine air filters for locomotive and marine applications - Plastic for recycling from products or articles containing PIP (3:1), where no new PIP (3:1) is added during the recycling process - 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.

(37) Pentachlorothiophenol (PCTP)

Applications	
Prohibited applications	All applications

(38) Hexachlorobutadiene (HCBd)

Applications	
Prohibited	All applications
Exempt applications	

(39) MOAH

Applications	
Prohibited	Oils produced from feedstock derived from petroleum hydrocarbons used in the manufacture of inks. Printed packaging and paper manufactured or imported.
Exempt applications	The ink printed directly on the product

(40) PFHxS

Applications	
Prohibited	All applications
Exempt applications	<p>For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFHxS or any of its salts equal to or below 0,025 mg/kg (0,000025 % by weight) where they are present in substances, mixtures or articles.</p> <p>For the purposes of this entry, Article 4(1), point (b), shall apply to the sum of concentrations of all PFHxS-related compounds equal to or below 1 mg/kg (0,0001 % by weight) where they are present in substances, mixtures or articles.</p> <p>For the purposes of this entry, Article 4(1), point (b), shall apply to concentrations of PFHxS, its salts and PFHxS-related compounds equal to or below 0,1 mg/kg (0,00001 % by weight) where it is present in concentrated firefighting foam mixtures that are to be used or are used in the production of other firefighting foam mixtures.</p> <p>(This exemption shall be reviewed and assessed by the Commission no later than 28 August 2026.)</p>

Reference

2. Prohibited substances for packaging materials

Substances	Application
Heavy metals ▪ cadmium ▪ lead ▪ hexavalent chromium ▪ mercury	The concentration of lead, cadmium, mercury and hexavalent chromium in each packaging component, ink and paint shall not exceed 100 ppm.

Reference

3. Prohibited substances for batteries

Control level	Substances	Classification of batteries	Threshold level
Prohibition	Cadmium	1. All batteries except those indicated in following 2 and 3	20ppm Exemption The battery of the use of following 1 and 2 1) Emergency and warning system including emergency lamps 2) Medical equipment
		2. Manganese battery, Alkaline battery	10ppm
		3. Nickel hydride (Ni-MH) secondary battery (excluding Button battery)	10ppm
	Lead	1. All batteries except 2 below	100ppm
		2. Alkaline battery	40ppm
	Mercury	1. All batteries except those indicated in following 2-4	5ppm in homogenous material
		2. Manganese battery, Alkaline battery	1) Intentionally added 2) 1ppm in battery or 5ppm in homogenous material
		3. Nickel hydride (Ni-MH) secondary battery (excluding Button battery)	1ppm in battery or 5ppm in homogenous material
		4. Mercury oxide cells, Mercury oxide button cells, Button-type air-zinc cell battery, Button-type silver oxide cell battery, All button batteries used in consumer products (excluding Alkaline button battery and Manganese button battery)	Intentionally added When the substance is contained as impurity, item 1 above shall apply

Reference

4-1 The exemptions of EU RoHS Directive(2011/65/EU) (ANNEX III of EU RoHS)

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: 2.5 mg	Expires on 24 February 2023 May use 2.5mg per burner from 1 January 2013
1(b)	For general lighting purposes \geq 30 W and < 50 W: 3.5 mg	Expires on 24 February 2023 May use 3.5mg per burner from 1 January 2012
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 : 5 mg	Expires on 24 February 2023
1(f)- I	For lamps designed to emit mainly light in the ultraviolet spectrum: 5 mg	Expires on 24 February 2027
1(f)- II	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 2025
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1)	Substances that are prohibited for use and intentional addition to components,	Expires on 24 February 2023
2(a)(2)	materials, and packaging materials that constitute products, depending on their	Expires on 24 August 2023
2(a)(3)	intended application.	Expires on 24 August 2023
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 3.5 mg	Expires on 24 February 2023
2(a)(5)	Substances Requiring Content Monitoring and Management due to Environmental	Expires on 24 February 2023
2(b)	Impact and Proper Disposal Considerations.	
2(b)(3)	Upcoming regulated substances · · · P7	Expires on 24 February 2023; 10 mg may be used per lamp from 25 February 2023 until 24 February 2025
2(b)(4)-I	-Substances undergoing regulatory deliberation with the potential for future	Expires on 24 February 2025
2(b)(4)-II	prohibition. It is advisable to explore alternative solutions prior to their official	Expires on 24 February 2027
2(b)(4)-III	inclusion in legal regulations.	Expires on 24 February 2027
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes used in EEE placed on the market before 24 February 2022 not exceeding (per lamp):	
3(a)	Short length (\leq 500 mm) : 3.5 mg	Expires on 24 February 2025

No.	Exemption	Scope and dates of applicability
3(b)	Medium length (> 500 mm and ≤ 1 500 mm) : 5 mg	Expires on 24 February 2025
3(c)	Long length (> 1 500 mm): 13mg	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 Ra >80: P ≤ 105 W: 16 mg may be used per burner	Expires on 24 February 2027
4(b)-I	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60: P ≤ 155 W: 30 mg may be used per burner	Expires on 24 February 2023
4(b)-II	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60: 155 W < P ≤ 405 W: 40 mg may be used per burner	Expires on 24 February 2023
4(b)-III	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60: P > 405 W: 40 mg may be used per burner	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 ≤ 155 W : 20mg	Expires on 24 February 2027
4(c)-II	155 W < P ≤ 405 W : 25 mg	Expires on 24 February 2027
4(c)-III	P > 405 W : 25 mg	Expires on 24 February 2027
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 ≥ 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

No.	Exemption	Scope and dates of applicability
5(a)	Lead in glass of cathode ray tubes	Categories 8 and 9 except for the following: Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices: Expires on 21 July 2023 Category 9 industrial monitoring and control instruments: Expires on 21 July 2024
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	Categories 1- 7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021 (expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category Cat.11; Expires on 21 July 2024
6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	Categories 8 and 9 except for the following: Expires on 21 July 2021 (expired) Remain in force until the decision on extension application continuously. Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 Industrial monitoring and control instruments: Expires on 21 July 2024
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	Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously.
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	Categories 8 and 9 except for the following: Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously. Category 8 in vitro diagnostic medical devices: Expires on 21 July 2023 Category 9 Industrial monitoring and control instruments: Expires on 21 July 2024
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	Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously
6(b)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4 % by weight	Categories 1-7 and 10; Expires on 18 May 2021(expired) Remain in force until the decision on extension application continuously

No.	Exemption	Scope and dates of applicability
6(c)	Copper alloy containing up to 4 % lead by weight	Categories 1- 7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	Categories 1-7 and 10 (Except applications covered by point 24) and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	Categories 8 and 9 except for the following: Expires on 21 July 2021 (expired) Remain in force until the decision on extension application continuously Category 8 In vitro diagnostic medical devices: Expires on 21 July 2023 Category 9 Industrial monitoring and control instruments: Expires on 21 July 2024
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	Categories 1-7 and 10 (Except applications covered by point 34) and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability
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. Categories 1-7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors	Categories 1-7,10 and categories 8,9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
8(b)	Cadmium and its compounds in electrical contacts	Applies to categories 8, 9 and 11 Categories 8, 9 except for the following; Expires in 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
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.	Applies to Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously

No.	Exemption	Scope and dates of applicability
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 Categorized 8,9 and 11 Categories 8,9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and category 11; Expires on 21 July 2024
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: — designed to operate fully or partly with electrical heater, having an average utilised power input >_ 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. Applies to Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously.
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 Categories 8 and 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
13(a)	Lead in white glasses used for optical applications	Categories 1-7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
13(b)-(I)	Lead in ion coloured optical filter glass types	Applies to Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously
13(b)-(II)	Cadmium in striking optical filter glass types; excluding applications falling under point 39 of this Annex	Applies to Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously
13(b)-(III)	Cadmium and lead in glazes used for reflectance standards	Applies to Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
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.	Applies to Categories 1-7 and 10; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	Applies to Categories 8, 9 and 11 Categories 8 and 9 except for the following; Expires on 21 July 2021(expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Cat,11; Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability
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)	Categories 1-7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
18(b)-I	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps containing phosphors such as BSP (BaSi2O5:Pb) when used in medical phototherapy equipment	Applies to categories 5 and 8 (except applications covered by entry 34 of Annex IV); Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously
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 Categories 8 and 9 except for the following; Expires on 21 July 2021(expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
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. (expired)
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. (expired)
21(c)	Lead in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	expires on 21 July 2021 for categories 1 to 7 and 10 (expired)
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Categories 1-7,10 and Categories 8, 9 except for the following; Expired on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	Categories 8, 9 and 11 except for the following; Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	Categories 1- 7,10 and 8. 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
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	Categories 8 and 9 except for the following; Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)	Categories 8 and 9 except for the following; Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	Categories 1-7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021(expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	Categories 8 and 9 except for the following; Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
34	Lead in cermet-based trimmer potentiometer elements	Categories 1-7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021 (expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	Categories 1-7,10 and Categories 8, 9 except for the following; Expires on 21 July 2021 (expired) Remain in force until the decision on extension application continuously Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	Categories 8 and 9 except for the following; Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
39(a)	Cadmium selenide in downshifting cadmiumbased semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm ² of display screen area)	Remain in force until the decision on extension application continuously Expires for all categories on 31 October 2019 *The information is as of October 20, 2023, when the proposed amendment was notified to the WTO. (G/TBT/N/EU/1022) It will be published in official in January 2024.
39(b)	Cadmium in downshifting semiconductor nanocrystal quantum dots directly deposited on LED semiconductor chips for use in display and projection applications (< 5 µg Cd per mm ² of light emitting LED chip surface) with a maximum amount per device of 1 mg	Expires for all categories on 31 December 2027 *The information is as of October 20, 2023, when the proposed amendment was notified to the WTO. (G/TBT/N/EU/1022) It will be published in official in January 2024.

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	Applies to all categories Categories 1 - 7, 10, 11; Expires on 31 March 2022(expired) Categories 8 and 9 except for the following; Expires on 21 July 2021 (expired) Category 8 in vitro diagnostic medical devices; Expires on 21 July 2023 Category 9 industrial monitoring and control instruments and Category 11; Expires on 21 July 2024
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 (ECUs) of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council , 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'

Reference

4-2.The exemptions of EU RoHS Directive(2011/65/EU)
specific to medical devices and monitoring and control instruments (ANNEX IV of EU RoHS)

No.	Exemption	Scope and dates of applicability
List of Relevant Chemical Substances		
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.	materials, and packaging materials that constitute products, depending on their	
1b.	intended application.	
1c.	Lead, cadmium and mercury in infra-red light detectors.	
1d.	Substances Requiring Content Monitoring and Management due to Environmental	
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.	June 30, 2021 Remain in force until the decision on extension application continuously.
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.	
19	Lead in Liquid crystal on silicon (LCoS) displays.	
20	Cadmium in X-ray measurement filters.	
26	'26. Lead in the following applications that are used durably at a temperature below – 20 °C under normal operating and storage conditions: (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. Lead in solders of electrical connections to temperature measurement sensors in devices which are designed to be used periodically at temperatures below – 150 °C.	June 30, 2021 Remain in force until the decision on extension application continuously.

No.	Exemption	Scope and dates of applicability
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, which are used in <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> <p>Expires on 30 June 2020.</p>	Remain in force until the decision on extension application continuously
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.	Remain in force until the decision on extension application continuously
31a	<p>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 in vitro 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.</p> <p>Expires on:</p> <ul style="list-style-type: none"> (a) 21 July 2021 for the use in medical devices other than in vitro diagnostic medical devices; (b) 21 July 2023 for the use in in vitro diagnostic medical devices; (c) 21 July 2024 for the use in electron microscopes and their accessories. 	<p>(a) medical devices and monitoring and control instruments;</p> <p>Remain in force until the decision on extension application continuously</p> <p>(b) in-vitro diagnostic medical devices;</p> <p>Remain in force until the decision on extension application continuously</p> <p>(c) July 21, 2024 for industrial monitoring and control instruments.</p>
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	21 July 2024
37	<p>Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies:</p> <ul style="list-style-type: none"> (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; (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: <ul style="list-style-type: none"> (i) solutions with an acidity < pH 1; (ii) solutions with an alkalinity > pH 13; (iii) corrosive solutions containing halogen gas; (c) measurements of conductivities above 100 mS/m that must be performed with portable instruments. 	December 31, 2025

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 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>	<p>The exemption expires on the following dates:</p> <p>(a) 21 July 2021 for medical devices and monitoring and control instruments;</p> <p>Remain in force until the decision on extension application continuously</p> <p>(b) July 21, 2023 for in-vitro diagnostic medical devices;</p> <p>(c) July 21, 2024 for industrial monitoring and control instruments.</p>
42	<p>Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (> 50 MHz) modes of operation.</p>	June 30, 2026
43	<p>Cadmium anodes in Hersch cells for oxygen sensors used in industrial monitoring and control instruments, where sensitivity below 10 ppm is required.</p>	July 15, 2023
44	<p>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.</p>	March 31, 2027.
45	<p>Bis(2-ethylhexyl) phthalate (DEHP) in ion-selective electrodes applied in point of care analysis of ionic substances present in human body fluids and/or in dialysate fluids</p>	July 21, 2028
46	<p>Bis(2-ethylhexyl) phthalate (DEHP) in plastic components in MRI detector coils.</p>	January 1, 2024
47	<p>Bis(2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP) and diisobutyl phthalate (DIBP) in spare parts recovered from and used for the repair or refurbishment of medical devices, including in vitro diagnostic medical devices, 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.</p>	July 21, 2028

Reference

5. Detailed Substances List (These lists are not comprehensive)

(1) Prohibited substances

No.	Substance	CAS No.	
1	Cadmium/Cadmium Compounds	Cadmium	7440-43-9
		Cadmium oxide	1306-19-0
		Cadmium sulfide	1306-23-6
		Cadmium chloride	10108-64-2
		Cadmium sulfate	10124-36-4
		Other cadmium compounds	—
2	Chromium VI compounds	Chromium (VI) oxide	1333-82-0
		Barium chromate	10294-40-3
		Calcium chromate	13765-19-0
		Chromium (VI) oxide	1333-82-0
		Lead (II) chromate	7758-97-6
		Sodium chromate	7775-11-3
		Sodium dichromate	10588-01-9
		Strontium chromate	7789-06-2
		Potassium dichromate	7778-50-9
		Potassium chromate	7789-00-6
		Zinc chromate	13530-65-9
		Other chromium VI compounds	—
3	Lead/Lead compounds	Lead	7439-92-1
		Lead (II) sulfate	7446-14-2
		Lead (II) carbonate	598-63-0
		Lead (II) hydro carbonate	1319-46-6
		Lead acetate	301-04-2
		Lead (II) acetate, trihydrate	6080-56-4
		Lead phosphate	7446-27-7
		Lead selenide	12069-00-0
		Lead (IV) oxide	1309-60-0
		Lead (II,IV) oxide	1314-41-6
		Lead (II) sulfide	1314-87-0
		Lead (II) oxide	1317-36-8
		Lead hydrocarbonate	1319-46-6
		Lead hydroxidcarbonate	1344-36-1
		Lead (II) phosphate	7446-27-7
		Lead (II) chromate	7758-97-6
		Lead (II) titanate	12060-00-3
		Lead sulfate, sulphuric acid, lead salt	15739-80-7
		Lead sulphate, tribasic	12202-17-4
		Lead stearate	1072-35-1
Other lead compounds	—		
4	Mercury/Mercury compounds	Mercury	7439-97-6
		Mercuric chloride	33631-63-9
		Mercury (II) chloride	7487-94-7
		Mercuric sulfate	7783-35-9
		Mercuric nitrate	10045-94-0
		Mercuric (II) oxide	21908-53-2
		Mercuric sulfide	1344-48-5
		Other mercury compounds	—
5	Tributyl tin oxide(TBTO)	Tributyl tin oxide(TBTO)	56-35-9

No.	Substance	CAS No.	
6	Tri-substituted organostannic compounds	Triphenyltin-N, N-dimethyldithiocarbamate	1803-12-9
		Triphenyltinfluoride	379-52-2
		Triphenyltinacetate	900-95-8
		Triphenyltinchloride	639-58-7
		Triphenyltinhydroxide	76-87-9
		Triphenyltin fattyacid((9-11)salt)	18380-71-7, 18380-72-8, 47672-31-1, 94850-90-5
		Triphenyltinchloroacetate	7094-94-2
		Tributyltinmethacrylate	2155-70-6
		Bis(tributyltin)fumalate	6454-35-9
		Tributyltinfluoride	30593
		Bis(tributyltin)2,3-dibromosuccinate	31732-71-5
		Tributyltinacetate	56-36-0
		Tributyltinlaurate	3090-36-6
		Bis(tributyltin)phthalate	4782-29-0
		Copolymer of alkyl (c=8) acrylate, methyl methacrylate and tributyltin methacrylate	67772-01-4
		Tributyltinsulfamate	6517-25-5
		Bis(tributyltin)maleate	14275-57-1
		Tributyltinchloride	1461-22-9, 7342-38-3
		Tributyltin cyclopentane carbonate = mixture	85409-17-2
		Tributyltin-1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthrenecarboxylatemix	26239-64-5
7	Polybrominated Biphenyls(PBBs)	Polybrominated Biphenyls	59536-65-1
		Dibromobiphenyl	92-86-4
		2-Bromobiphenyl	2052-07-5
		3-Bromobiphenyl	2113-57-7
		4-Bromobiphenyl	92-66-0
		Tribromobiphenyl	59080-34-1
		Tetrabromobiphenyl	40088-45-7
		Pentabromobiphenyl	56307-79-0
		Hexabromobiphenyl	59080-40-9
		Hexabromo-1,1-biphenyl	36355-01-8
		Firemaster FF-1	67774-32-7
		Heptabromobiphenyl	35194-78-6
		Octabromobiphenyl	61288-13-9
		Nonabromobiphenyl	27753-52-2
Decabromobiphenyl	13654-09-6		
8	Polybrominated Diphenyl Ethers (PBDEs)	Bromodiphenyl ether	101-55-3
		Dibromodiphenyl ether	2050-47-7
		Tribromodiphenyl ether	49690-94-0
		Tetrabromodiphenyl ether	40088-47-9
		Pentabromodiphenyl ether (note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxid	32534-81-9 (CAS number used for commercial grades of PeBDPO)
		Hexabromodiphenyl ether	36483-60-0
		Heptabromodiphenyl ether	68928-80-3
		Octabromodiphenyl ether	32536-52-0
		Nonabromodiphenyl ether	63936-56-1
		Decabromodiphenyl ether	1163-19-5

No.	Substance	CAS No.	
9	Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (all isomers and congeners)	1336-36-3
		Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
		Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21)	81161-70-8
		Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8
10	Polychlorinated Terphenyls (PCTs)	Polychlorinated Terphenyls(all isomers and congeners)	61788-33-8
11	Polychlorinated Naphthalenes	Polychlorinated Naphthalenes(limited to those containing three or more chlorine atoms)	70776-03-3
		Other polychlorinated Naphthalenes	—
12	Short Chain Chlorinated Paraffins (C10-C13)	Alkanes, C10-13, chloro	85535-84-8
13	Asbestos	Asbestos	1332-21-4
		Actinolite	77536-66-4
		Amosite (Grunerite)	12172-73-5
		Anthophyllite	77536-67-5
		Chrysotile	12001-29-5
		Crocidolite	12001-28-4
		Tremolite	77536-68-6
14	Azocolourants and azodyes which form certain aromatic amines (22 Aromatic amines)	Biphenyl-4-ylamine	92-67-1
		Benzidine	92-87-5
		4-chloro-o-toluidine	95-69-2
		2-naphthylamine	91-59-8
		o-aminoazotoluene	97-56-3
		5-nitro-o-toluidine	99-55-8
		4-chloroaniline	106-47-8
		4-methoxy-m-phenylenediamine	615-05-4
		4,4'-methylenedianiline	101-77-9
		3,3'-dichlorobenzidine	91-94-1
		3,3'-dimethoxybenzidine	119-90-4
		3,3'-dimethylbenzidine	119-93-7
		4,4'-methylenedi-o-toluidine	838-88-0
		6-methoxy-m-toluidine	120-71-8
		4,4'-methylene-bis(2-chloroaniline)	101-14-4
		4,4'-oxydianiline	101-80-4
		4,4'-thiodianiline	139-65-1
		o-toluidine	95-53-4
		4-methyl-m-phenylenediamine	95-80-7
		2,4,5-trimethylaniline	137-17-7
o-anisidine	90-04-0		
4-amino azobenzene	60-09-3		
15	Ozone Depleting Substances	Trichlorofluoromethane (CFC-11)	75-69-4
		Dichlorodifluoromethane (CFC-12)	75-71-8
		Chlorotrifluoromethane (CFC-13)	75-72-9
		Pentachlorofluoroethane (CFC-111)	354-56-3
		Tetrachlorodifluoroethane (CFC-112)	76-12-0
		1,1,1-Trichloro-2,2,2 trifluoroethane (CFC-113a)	354-58-5
		Trichlorotrifluoroethane (CFC-113)	76-13-1
		1,1,2-Trichloro-1,2,2 trifluoroethane (CFC-113)	
		Dichlorotetrafluoroethane (CFC-114)	76-14-2
		Monochloropentafluoroethane (CFC-115)	76-15-3
		Heptachlorofluoropropane (CFC-211)	422-78-6 , 135401-87-5

Continued

No.	Substance	CAS No.	
15	Ozone Depleting Substances	Hexachlorodifluoropropane (CFC-212)	3182-26-1
		Pentachlorotrifluoropropane (CFC-213)	2354-06-5 , 134237-31-3
		Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0
		1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-	2268-46-4
		Trichloropentafluoropropane (CFC-215)	1599-41-3
		1,1,1-Trichloropentafluoropropane (CFC-215cb)	4259-43-2
		1,2,3-Trichloropentafluoropropane (CFC-215ba)	76-17-5
		Dichlorohexafluoropropane (CFC-216)	661-97-2
		Chloroheptafluoropropane (CFC-217)	422-86-6
		Bromochlorodifluoromethane (Halon-1211)	353-59-3
		Bromotrifluoromethane (Halon-1301)	75-63-8
		Dibromotetrafluoroethane (Halon-2402)	124-73-2
		Tetrachloromethane (carbon tetrachloride)	56-23-5
		1,1,1-Trichloroethane (methylchloroform) and its isomers, except 1,1,2-Trichloroethane	71-55-6
		Bromomethane (methyl bromide)	74-83-9
		Dibromofluoromethane (HBFC-21 B2)	1868-53-7
		Bromodifluoromethane (HBFC-22 B1)	1511-62-2
		Bromofluoromethane (HBFC-31 B1)	373-52-4
		Tetrabromofluoroethane (HBFC-121 B4)	306-80-9
		Tribromodifluoroethane (HBFC-122 B3)	—
		Dibromotrifluoroethane (HBFC-123 B2)	354-04-1
		Bromotetrafluoroethane (HBFC-124 B1)	124-72-1
		Tribromofluoroethane (HBFC-131 B3)	—
		Dibromodifluoroethane (HBFC-132 B2)	75-82-1
		Bromotrifluoroethane (HBFC-133 B1)	421-06-7
		Dibromofluoroethane (HBFC-141 B2)	358-97-4
		Bromodifluoroethane (HBFC-142 B1)	420-47-3
		Bromofluoroethane (HBFC-151 B1)	762-49-2
		Hexabromofluoropropane (HBFC-221 B6)	—
		Pentabromodifluoropropane (HBFC-222 B5)	—
		Tetrabromotrifluoropropane (HBFC-223 B4)	—
		Tribromotetrafluoropropane (HBFC-224 B3)	—
		Dibromopentafluoropropane (HBFC-225 B2)	431-78-7
		Bromohexafluoropropane (HBFC-226 B1)	2252-78-0
		Pentabromofluoropropane (HBFC-231 B5)	—
		Tetrabromodifluoropropane (HBFC-232 B4)	—
		Tribromotrifluoropropane (HBFC-233 B3)	—
		Dibromotetrafluoropropane (HBFC-234 B2)	—
		Bromopentafluoropropane (HBFC-235 B1)	460-88-8
		Tetrabromofluoropropane (HBFC-241 B4)	—
		Tribromodifluoropropane (HBFC-242 B3)	70192-80-2
		Dibromotrifluoropropane (HBFC-243 B2)	431-21-0
		Bromotetrafluoropropane (HBFC-244 B1)	679-84-5
		Tribromofluoropropane (HBFC-251 B3)	75372-14-4
		Dibromodifluoropropane (HBFC-252 B2)	460-25-3
		Bromotrifluoropropane (HBFC-253 B1)	421-46-5
		Dibromofluoropropane (HBFC-261 B2)	51584-26-0
		Bromodifluoropropane (HBFC-262 B1)	—
		Bromofluoropropane (HBFC-271 B1)	1871-72-3
		Bromochloromethane (Halon-1011)	74-97-5
Continued Dichlorofluoromethane (HCFC-21)	75-43-4		

No.	Substance	CAS No.	
15	Ozone Depleting Substances	Chlorodifluoromethane (HCFC-22)	75-45-6
		Chlorofluoromethane (HCFC-31)	593-70-4
		Tetrachlorofluoroethane (HCFC-121)	134237-32-4
		1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	354-11-0
		1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354-14-3
		Trichlorodifluoroethane (HCFC-122)	41834-16-6
		1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)	354-21-2
		Dichlorotrifluoroethane(HCFC-123)	34077-87-7
		Dichloro-1,1,2-trifluoroethane	90454-18-5
		1,1-Dichloro-2,2,2-trifluoroethane (HCFC-123)	306-83-2
		1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
		1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
		Chlorotetrafluoroethane (HCFC-124)	63938-10-3
		2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837-89-0
		1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	354-25-6
		Trichlorofluoroethane (HCFC-131)	27154-33-2 ; (134237-34-6)
		1,1,2-Trichloro-2-fluoroethane (HCFC-131)	359-28-4
		1,1,2-Trichloro-1-fluoroethane (HCFC131a)	811-95-0
		1-Chloro-1-fluoroethane (HCFC-151a)	1615-75-4
		Dichlorodifluoroethane (HCFC-132)	25915-78-0
		1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1649-08-7
		1,1-Dichloro-1,2-difluoroethane (HCFC-132c)	1842-05-3
		1,1-Dichloro-2,2-difluoroethane (HCFC-132a)	471-43-2
		1,2-Dichloro-1,2-difluoroethane (HCFC-132)	431-06-1
		Chlorotrifluoroethane (HCFC-133)	1330-45-6
		1-Chloro-1,2,2-trifluoroethane (HCFC-133)	1330-45-6
		2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
		Dichlorofluoroethane(HCFC-141)	1717-00-6; (25167-88-8)
		1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
		1,2-Dichloro-1-fluoroethane (HCFC-141)	430-57-9
		Chlorodifluoroethane (HCFC-142)	25497-29-4
		1-Chloro-1,1-difluoroethane (HCFC-142b)	75-68-3
		1-Chloro-1,2-difluoroethane (HCFC-142a)	338-64-7
		Hexachlorofluoropropane (HCFC-221)	134237-35-7
		Pentachlorodifluoropropane (HCFC-222)	134237-36-8
		Tetrachlorotrifluoropropane (HCFC-223)	134237-37-9
		Trichlorotetrafluoropropane (HCFC-224)	134237-38-0
		Dichloropentafluoropropane (HCFC-225)	127564-92-5; (2713-09-9)
		2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC-225aa)	128903-21-9
		2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	422-48-0
		1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	422-44-6
		3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422-56-0
		1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507-55-1
		Continued	

No.	Substance	CAS No.	
15	Ozone Depleting Substances	1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC-225cc)	13474-88-9
		1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	431-86-7
		1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	136013-79-1
		1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC-225eb)	111512-56-2
		Chlorohexafluoropropane (HCFC-226)	134308-72-8
		Pentachlorofluoropropane (HCFC-231)	134190-48-0
		Tetrachlorodifluoropropane (HCFC-232)	134237-39-1
		Trichlorotrifluoropropane (HCFC-233)	134237-40-4
		1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	7125-83-9
		Dichlorotetrafluoropropane (HCFC-234)	127564-83-4
		Chloropentafluoropropane (HCFC-235)	134237-41-5
		1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	460-92-4
		Tetrachlorofluoropropane (HCFC-241)	134190-49-1
		Trichlorodifluoropropane (HCFC-242)	134237-42-6
		Dichlorotrifluoropropane (HCFC-243)	134237-43-7
		1,1-Dichloro-1,2,2-trifluoropropane (HCFC-243cc)	7125-99-7
		2,3-Dichloro-1,1,1-trifluoropropane (HCFC-243db)	338-75-0
		3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243fa)	460-69-5
		Chlorotetrafluoropropane (HCFC-244)	134190-50-4
		3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca)	679-85-6
		Trichlorofluoropropane (HCFC-251)	134190-51-5
		1,1,3-Trichloro-1-fluoropropane (HCFC-251fb)	818-99-5
		Dichlorodifluoropropane (HCFC-252)	134190-52-6
		Chlorotrifluoropropane (HCFC-253)	134237-44-8
		3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	460-35-5
		Dichlorofluoropropane (HCFC-261)	134237-45-9
		1,1-Dichloro-1-fluoropropane (HCFC-261fc)	7799-56-6
		Chlorodifluoropropane (HCFC-262)	134190-53-7
		2-Chloro-1,3-difluoropropane (HCFC-262da)	102738-79-4
		Chlorofluoropropane (HCFC-271)	134190-54-8
		2-Chloro-2-fluoropropane (HCFC-271ba)	420-44-0
		17	Radioactive Substances
Radon	10043-92-2		
Americium-241	14596-10-2		
Thorium-232	7440-29-1		
Cesium(only Radioactive Isotope)	7440-46-2 (Cs-137 010045-97-3)		
Strontium(only radioactive isotope)	(Element 7440-24-6) (Sr-90 10098-97-2)		
Other radioactive substances	—		

No.	Substance	CAS No.
18	Hexabromocyclododecane (HBCD)	Hexabromocyclododecane (HBCD)
		25637-99-4
		4736-49-6
		65701-47-5
		138257-17-7
		138257-18-8
		138257-19-9
		169102-57-2
		678970-15-5
		678970-16-6
19	Dibutyltin compounds (DBT)	678970-17-7
		1,2,5,6,9,10-Hexabromocyclododecane
		3194-55-6
		alpha-hexabromocyclododecane
		134237-50-6
20	Diocetyl tin compounds (DOT)	beta-hexabromocyclododecane
		134237-51-7
		gamma-hexabromocyclododecane
21	Perfluorooctane sulfonates (PFOS)	134237-52-8
		Dibutyltin Oxide
		818-08-6
		Dibutyltin Diacetate
		1067-33-0
22	Fluorinated greenhouse gases (HFC、PFC、SF6)	Dibutyltin Dilaurate
		77-58-7
		Dibutyltin maleate
		78-04-6
		Other Dibutyltin compounds
		—
		Di-n-octyltin oxide
		870-08-6
		Bis(lauroyloxy)diocetyl tin
		3648-18-8
		Other Diocetyl tin compounds
		—
		Perfluorooctane sulfonates (PFOS)
		—
		Trifluoromethane (HFC-23)
		75-46-7
		Difluoromethane (HFC-32)
		75-10-5
		Methyl fluoride (HFC-41)
		593-53-3
		Pentafluoroethane (HFC-125)
		354-33-6
1,1,2,2-Tetrafluoroethane (HFC-134)		
359-35-3		
1,1,1,2-Tetrafluoroethane (HFC-134a)		
811-97-2		
1,1,2-Trifluoroethane (HFC-143)		
430-66-0		
1,1,1-Trifluoroethane (HFC-143a)		
420-46-2		
1,2-Difluoroethane (HFC-152)		
624-72-6		
1,1-Difluoroethane (HFC-152a)		
75-37-6		
Fluoroethane (HFC-161)		
353-36-6		
1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)		
431-89-0		
1,1,1,2,2,3-Hexafluoropropane (HFC-236cb)		
677-56-5		
1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)		
431-63-0		
1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)		
690-39-1		
1,1,2,2,3-Pentafluoropropane (HFC-236ca)		
679-86-7		
1,1,1,3,3-Pentafluoropropane (HFC-236fa)		
460-73-1		
1,1,1,3,3-Pentafluorobutane (HFC-365mfc)		
406-58-6		
1,1,1,2,3,4,4,5,5,5-Decafluoropentane (HFC-43-10mee)		
138495-42-8		
Tetrafluoromethane (Carbon tetrafluoride、PFC-14)		
75-73-0		
Hexafluoroethane (PFC-116)		
76-16-4		
Octafluoropropane (PFC-218)		
76-19-7		
Decafluorobutane (PFC-31-10)		
355-25-9		
Dodecafluoropentane (PFC-41-12)		
678-26-2		
Tetradecafluorohexane (PFC-51-14)		
355-42-0		
Octafluorocyclobutane (PFC-c318)		
115-25-3		
Sulfur hexafluoride (SF8)		
2551-62-4		
23	2-Benzotriazol-2-yl-4,6-di-tert-butylphenyl	3846-71-7
24	Dimethyl Fumarate (Fumaric Acid Dimethyl Ester) (DMF)	624-49-7

No.	Substance	CAS No.	
25	Polycyclic Aromatic Hydrocarbons (PAH)	Benzo[a]pyrene (BaP)	50-32-8
		Benzo[e]pyrene (BeP)	192-97-2
		Benzo[a]anthracene (BaA)	56-55-3
		Chrysene (CHR)	218-01-9
		Benzo[b]fluoranthene (BbFA)	205-99-2
		Benzo[j]fluoranthene (BjFA)	205-82-3
		Benzo[k]fluoranthene (BkFA)	207-08-9
		Dibenz[a,h]anthracene (DBAhA)	53-70-3
26	N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene (BNST)	N-Phenyl-benzenamine reaction products with styrene and 2,4,4-trimethylpentene (BNST)	68921-45-9
27	Di(2-ethylhexyl) phthalate (DEHP)	Di(2-ethylhexyl) phthalate (DEHP)	117-81-7
28	Dibutyl phthalate (DBP)	Dibutyl phthalate (DBP)	84-74-2
29	Butylbenzyl phthalate (BBP)	Butylbenzyl phthalate (BBP)	85-68-7
30	Phthalic Acid Diisobutyl Ester	Phthalic Acid Diisobutyl Ester (DIBP)	84-69-5
31	Perfluorooctanoic acid (PFOA) and its salts, and PFOA-related	Perfluorooctanoic Acid	335-67-1
32		Pentadecafluorooctanoic acid	3825-26-1
		Perfluorooctanoic acid	335-95-5
			2395-00-8
			335-93-3
		Pentadecafluorooctyl fluoride	335-66-0
		Methyl Perfluorooctanoate	376-27-2
Ethyl pentadecafluorooctanoate	3108-24-5		
35	2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)	2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)	732-26-3
36	Phenol, isopropylated phosphate (3:1) (PIP (3:1))	Phenol, isopropylated phosphate (3:1) (PIP (3:1))	68937-41-7
37	Pentachlorothiophenol (PCTP)	Pentachlorothiophenol (PCTP)	133-49-3
38	Hexachlorobutadiene (HCBd)	Hexachlorobutadiene (HCBd)	87-68-3
39	Aromatic hydrocarbons of mineral oil (MOAH) comprising from 1 to 7 aromatic rings;	1° Aromatic hydrocarbons of mineral oil (MOAH) comprising from 1 to 7 aromatic rings;	—
40	PFHxS	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	355-46-4

Reference

5. Detailed Substances List (These lists are not comprehensive)

(2) Controlled substances

No.	Substance	CAS No.	
1	Beryllium oxide	Beryllium oxide 1304-56-9	
2	Nickel	Nickel 7440-02-0	
3	Brominated Flame Retardants (other than PBBs, PBDEs or HBCD)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]	—
		Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]	—
		Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]	—
		Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls] in combination with	—
		Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]	—
		Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]	—
		Poly(2,6-dibromo-phenylene oxide)	69882-11-7
		Tetra-decabromo-diphenoxy-benzene	58965-66-5
		1,2-Bis(2,4,6-tribromo-phenoxy) ethane	37853-59-1
		3,5,3',5'-Tetrabromo-bisphenol A (TBBA)	79-94-7
		TBBA, unspecified	30496-13-0
		TBBA-epichlorhydrin oligomer	40039-93-8
		TBBA-TBBA-diglycidyl-ether oligomer	70682-74-5
		TBBA carbonate oligomer	28906-13-0
		TBBA carbonate oligomer, phenoxy end capped	94344-64-2
		TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	71342-77-3
		TBBA-bisphenol A-phosgene polymer	32844-27-2
		Brominated epoxy resin end-capped with tribromophenol	139638-58-7
		Brominated epoxy resin end-capped with tribromophenol	135229-48-0
		TBBA-(2,3-dibromo-propyl-ether)	21850-44-2
		TBBA bis-(2-hydroxy-ethyl-ether)	4162-45-2
		TBBA-bis-(allyl-ether)	25327-89-3
		TBBA-dimethyl-ether	37853-61-5
		Tetrabromo-bisphenol S	39635-79-5
		TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1
		2,4-Dibromo-phenol	615-58-7
		2,4,6-tribromo-phenol	118-79-6
Pentabromo-phenol	608-71-9		
Continued 2,4,6-Tribromo-phenyl-allyl-ether	3278-89-5		

No.	Substance	CAS No.	
3	Brominated Flame Retardants (other than PBBs, PBDEs or HBCD)	Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
		Bis(methyl)tetrabromo-phthalate	55481-60-2
		Bis(2-ethylhexyl)tetrabromo-phthalate	26040-51-7
		2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP	20566-35-2
		TBPA, glycol-and propylene-oxide esters	75790-69-1
		N,N'-Ethylene -bis-(tetrabromo-phthalimide)	32588-76-4
		Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	52907-07-0
		2,3-Dibromo-2-butene-1,4-diol	3234-02-4
		Dibromo-neopentyl-glycol	3296-90-0
		Dibromo-propanol	96-13-9
		Tribromo-neopentyl-alcohol	36483-57-5
		Poly tribromo-styrene	57137-10-7
		Tribromo-styrene	61368-34-1
		Dibromo-styrene grafted PP	171091-06-8
		Poly-dibromo-styrene	31780-26-4
		Bromo-/Chloro-paraffins	68955-41-9
		Bromo-/Chloro-alpha-olefin	82600-56-4
		Vinylbromide	593-60-2
		Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9
		Tris(2,4-Dibromo-phenyl) phosphate	49690-63-3
		Tris(tribromo-neopentyl) phosphate	19186-97-1
		Chlorinated and brominated phosphate ester	125997-20-8
		Pentabromo-toluene	87-83-2
		Pentabromo-benzyl bromide	38521-51-6
		1,3-Butadiene homopolymer, brominated	68441-46-3
		Pentabromo-benzyl-acrylate, monomer	59447-55-1
		Pentabromo-benzyl-acrylate, polymer	59447-57-3
		Decabromo-diphenyl-ethane	84852-53-9
		Tribromo-bisphenyl-maleinimide	59789-51-4
		Brominated trimethylphenyl indane	—
		Other Brominated Flame Retardants	—
		Tetrabromo-cyclo-octane	31454-48-5
1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane	3322-93-8		
Tetrabromophthalic acid Na salt	25357-79-3		
Tetrabromo phthalic anhydride	632-79-1		
4	Polyvinyl Chloride(PVC)	Polyvinyl chloride (PVC)	9002-86-2
5	Chlorine-based fire retardant	2,2-bis(chloromethyl)trimethylene bis(bis(2-chloroethyl)phosphate)	38051-10-4
		tris(2-chloro-1-methylethyl) phosphate	13674-84-5
		2,2-bis(bromomethyl)-3-chloropropyl bis[2-chloro-1-(chloromethyl)ethyl] phosphate	66108-37-0
6	Bis(n-octyl) phthalate (DNOP)	Bis(n-octyl) phthalate (DNOP)	117-84-0
7	Diisononyl Phthalate (DINP)	Diisononyl Phthalate (DINP)	28553-12-0
			68515-48-0
8	Di-isodecyl phthalate (DIDP)	Di-isodecyl phthalate (DIDP)	26761-40-0
			68515-49-1
9	Perchlorate	Lithium Perchlorate	7791-03-9