

Nikon Green Procurement Standards

Separate Volume: Corresponding Chemical Substance Lists



Effective October 1, 2026 (3.1 edition)

NIKON CORPORATION

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I. Definitions of terms

The terms used in the Nikon Green Procurement Standards Separate Volume are defined as follows:

(1) Chemical substance

Refers to an element or its compound that is formed naturally or can be obtained in any manufacturing process.

(2) Mixture

It means that mixture can be obtained by mixing two or more chemical substances. Examples of mixtures include paint/coating agent, ink, alloy ingot, solder, resin pellet containing additives, etc.

(3) Article

Refers to an item with a specific shape, appearance or design that is given during production which substantially determines the functions of the item in final use rather than its chemical composition. Examples of articles include gear wheels, integrated circuits, electrical products, transport machineries, etc

(4) Contain

It means that a substance remains in the parts or devices constituting a product, or materials used in them through addition, filling, mixing, migration, adhesion, etc., whether intentionally or unintentionally. Cases where a substance unintentionally remains in a product through mixing, migration, adhesion, etc., during manufacturing or logistics processes are also treated as contain.

(5) Intentional added

It means that the corresponding substance or a mixture including the corresponding substance is added for some purpose, irrespective of quantity.

(6) Impurity

Refers to a chemical substance, such as by-products, substances unintentionally mixed in during the manufacturing process, etc., contained in a product with no specific function and is identifiable with its CAS number (or other ID) that is different from those of other substances in a product This term also refers to residual substances not removed from the product through general purification processes. Any contain of impurity by intentional addition, or any intentional contain, is not deemed as impurity regardless of concentration.

(7) Threshold

Refers to the maximum allowable concentration or prohibition and management standards for intentional addition of the corresponding chemical substance. The substance, for which "Intentionally added" is written in its threshold field, must not be intentionally added. In the case that multiple thresholds, such as "intentionally added" and "numerical value," are listed in the same threshold column, it means "intentionally added prohibited" and "inclusion of impurities exceeding the numerical value prohibited."

(8) Homogeneous material

Refers to a material that cannot be mechanically disaggregated or separated into different materials and whose overall composition is uniform.

(9) Exemption

Refers to applications or products that are not subject to the substance requirements listed in the Nikon Green Procurement Standards Separate Volume, such as those that fall within the exempted categories defined under laws/regulations.

(10) Substance category

Refers to a collective term for the target chemical substance and its compounds, or for multiple chemical substances that share similar chemical structures, toxicological properties, or environmental hazards.

(11) Key legal and regulatory or industry standard

Refers to examples of legal and regulatory requirements, or industrial standards that serve as the basis for the prohibition and management of the corresponding chemical substances.

II. Procurement Items

II -1. Prohibited Chemical Substances

The following table shows the chemical substances prohibited to be contained in procured items (finished products, parts and materials, packaging materials) and their threshold levels.

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
1	Cadmium/cadmium Compounds	• RoHS Directive 2011/65/EU • ANNEX XVII Entry 23 of REACH Regulation (EC) No 1907/2006	All except the below applications	0.01% by weight (100 ppm) of cadmium in homogeneous material	Pigment, anti-corrosion surface treatment, optical glass, stabilizer, plating, fluorescent, electrode, solder, electric contact, contact point, zinc plating plastic stabilizer
		• EU Packaging and Packaging Waste Regulation (EU) 2025/40 • US State Toxics in Packaging (TPCH Model Legislation)	Packaging materials	• Intentionally added • 0.01% by weight (100 ppm) of the sum of cadmium, mercury, lead & chromium VI in homogeneous material	Pigment, paint, plastic stabilizer
		ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006	• Clothing or related accessories • Textiles • Footwear	0.0001% by weight (1 ppm) of cadmium in homogeneous material	Pigment, dye
		• EU Batteries Regulation (EU)2023/1542 • Korea "Quality Management and Industrial Products Safety Management Enforcement Ordinances"	Zinc–carbon batteries, alkaline manganese batteries, and nickel–metal hydride (Ni-MH) secondary batteries (except Button cells)	0.001% by weight (10ppm) of cadmium in a battery	
		• Taiwan Waste Disposal Act (Regulation on heavy metal)	Batteries, other than the batteries listed above (except for emergency and alarm systems, including emergency lighting, and medical equipment)	0.002% by weight (20ppm) of cadmium in a battery	
		For exemptions under the RoHS Directive (2011/65/EU), please refer to Annex 1 "Applications exempted from the RoHS Directive Annex III" and Annex 2 "Applications exempted from the RoHS Directive Annex IV". In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption.			

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)						
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use	
	Cadmium/cadmium Compounds (continued)	Representative examples of relevant substance				
		Substance name			CAS No.	
		Cadmium			7440-43-9	
		Cadmium oxide			1306-19-0	
		Cadmium sulfide			1306-23-6	
		Cadmium chloride			10108-64-2	
		Cadmium sulfate			10124-36-4	
		Cadmium fluoride			7790-79-6	
2	Chromium VI Compounds	RoHS Directive 2011/65/EU	All except the below applications	0.1% by weight (1,000 ppm) of chromium VI in homogeneous material	Pigment, paint, ink, catalyst, plating, anticorrosion surface treatment, dye	
		ANNEX XVII Entry 47 of REACH Regulation (EC) No 1907/2006	Leather articles or articles containing leather parts coming into contact with the skin	0.0003 % by weight (3ppm) of the total dry weight of the leather	Tanning agent for leather goods	
		ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006	• Clothing or related accessories • Textiles • Footwear	0.0001% by weight (1 ppm) of chromium VI in homogeneous material	Pigment, dye	
		• EU Packaging and Packaging Waste Regulation (EU) 2025/40 • US State Toxics in Packaging (TPCH Model Legislation)	Packaging materials	• Intentionally added • 0.01% by weight (100 ppm) of the sum of cadmium, mercury, lead & chromium VI in homogeneous material	Pigment, paint, plastic stabilizer	
		For exemptions under the RoHS Directive (2011/65/EU), please refer to Annex 1 "Applications exempted from the RoHS Directive Annex III" and Annex 2 "Applications exempted from the RoHS Directive Annex IV". In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption.				
		Representative examples of relevant substance				
		Substance name			CAS No.	
		Chromium (VI) oxide			1333-82-0	
		Barium chromate			10294-40-3	
		Calcium chromate			13765-19-0	
		Lead (II) chromate			7758-97-6	
		Lead chromate molybdate sulphate red			12656-85-8	
		Lead sulfochromate yellow			1344-37-2	
		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	
		Pentazinc chromate octahydroxide			49663-84-5	
Potassium hydroxyoctaoxodizincatedichromate			11103-86-9			
Ammonium Dichromate			7789-09-5			
Chromium(VI)			18540-29-9			

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
3	Lead/lead compounds	RoHS Directive 2011/65/EU	All except the below applications	0.1% by weight (1,000 ppm) of lead in homogeneous material	Rubber hardener, pigment, paint, lubricant, plastic stabilizer, freemachining alloy,
		ANNEX XVII Entry 63 of REACH Regulation (EC) No 1907/2006	Articles or accessible parts thereof which may be placed in the mouth by children	0.05% by weight (500 ppm) of lead in article or accessible part thereof	freecutting steel, optical material, X-ray shielding in CRT glass, solder material, curing agent,
				0.05 µg/cm ² /h (equivalent to 0.05 µg/g/h) in the rate of lead release from an article or any accessible part thereof	vulcanizing agent, ferroelectrics, plating, metal alloy
		ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006	•Clothing or related accessories •Textiles •Footwear	0.0001% by weight (1 ppm) of lead in homogeneous material	Pigment, dye
		U.S. Consumer Product Safety Improvement Act (CPSIA)	Consumer products designed or intended primarily for children 12 years of age or younger	0.01% by weight (100 ppm) of lead in the children's product	Pigment, paint, stabilizer, colorant
		U.S. Consumer Product Safety Improvement Act (CPSIA)	Paint and similar surface coatings of toys and other articles intended for use by children	0.009% by weight (90 ppm) of lead in surface coating	Pigment, paint, stabilizer, colorant
		US/CA Proposition 65 Case law	Cables/cords with thermoset or thermoplastic coatings	•Intentionally added •0.03% by weight (300 ppm) of lead in surface coating	Pigment, paint, stabilizer, colorant
		•EU Packaging and Packaging Waste Regulation (EU) 2025/40 •US State Toxics in Packaging (TPCH Model Legislation)	packaging materials	•Intentionally added •0.01% by weight (100 ppm) of the sum of cadmium, mercury, lead & chromium VI in homogeneous material	Pigment, paint, plastic stabilizer

Lead/lead compounds (continued)	•EU Batteries Regulation (EU)2023/1542 •Brazilian Batteries Regulation National Environmental Council Resolution 401 •Chinese National Standards regarding the limit of hazardous substances in batteries (GB24427-2021) •Korea “Quality Management and Industrial Products Safety Management Enforcement Ordinances”	Alkaline manganese batteries	0.004% by weight (40ppm) of lead in a battery	
		Zinc air button cells	[Until August 17, 2027] 0.05% by weight (500ppm) of lead in a battery [From August 18, 2027] 0.01% by weight (100ppm) of lead in a battery	
		Batteries, other than the batteries listed above (Except for lead-acid batteries)	0.01% by weight (100ppm) of lead in a battery	
		For exemptions under the RoHS Directive (2011/65/EU), please refer to Annex 1 "Applications exempted from the RoHS Directive Annex III" and Annex 2 "Applications exempted from the RoHS Directive Annex IV". In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption. Representative examples of relevant substance		

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)					
No.	Substance/Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
4	Mercury/mercury compounds	•RoHS Directive 2011/65/EU •Minamata Convention on Mercury	All except the below applications	•Intentionally added •0.1% by weight (1,000 ppm) of mercury in homogeneous material	Fluorescent bulb, contact point material, pigment, anti-corrosion, switches, antibacterial treatment
		•EU Packaging and Packaging Waste Regulation (EU) 2025/40 •US State Toxics in Packaging (TPCH Model Legislation)	Packaging materials	•Intentionally added •0.01% by weight (100 ppm) of the sum of cadmium, mercury, lead & chromium VI in homogeneous material	Pigment, paint, plastic stabilizer
		•EU Batteries Regulation (EU)2023/1542 •USA Federal Mercury-Containing and Rechargeable Battery Management Act (MRBM) •Canada Products containing Mercury Regulations SOR/2014-254 •Chinese National Standards regarding the limit of hazardous substances in batteries (GB24427-2021) •Korea "Quality Management and Industrial Products Safety Management Enforcement Ordinances" •Taiwan Waste Disposal Act (Regulation on heavy metal)	•Zinc-carbon batteries •Alkaline manganese batteries	•Intentionally added •0.0001% by weight (1ppm) of mercury in a battery •0.0005% by weight (5ppm) of mercury in homogeneous material	
			•Nickel-metal hydride (Ni-MH) secondary batteries (except Button cells) •Manganese-zinc batteries •Mercuric oxide button cells •Silver oxide button cells •Zinc-air button cells	•0.0001% by weight (1ppm) of mercury in a battery •0.0005% by weight (5ppm) of mercury in homogeneous material	
			Batteries, other than the batteries listed above	•0.0005% by weight (5ppm) of mercury in homogeneous material	
			For exemptions under the RoHS Directive (2011/65/EU), please refer to Annex 1 "Applications exempted from the RoHS Directive Annex III" and Annex 2 "Applications exempted from the RoHS Directive Annex IV". In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption. Representative examples of relevant substance		
		Substance name		CAS No.	
		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			

Prohibited Chemical Substances (continued)

Polybrominated Chemical Substances (continued)																																						
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use																																	
5	Polybrominated biphenyls (PBBs)	RoHS Directive 2011/65/EU	All	0.1% by weight (1,000 ppm) for PBBs in homogeneous material	Flame retardant																																	
		Representative examples of relevant substance																																				
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Polybrominated Biphenyls</td><td>59536-65-1</td></tr><tr><td>Dibromobiphenyl</td><td>92-86-4</td></tr><tr><td>2-Bromobiphenyl</td><td>2052-07-5</td></tr><tr><td>3-Bromobiphenyl</td><td>2113-57-7</td></tr><tr><td>4-Bromobiphenyl</td><td>92-66-0</td></tr><tr><td>Tribromobiphenyl</td><td>59080-34-1</td></tr><tr><td>Tetrabromobiphenyl</td><td>40088-45-7</td></tr><tr><td>Pentabromobiphenyl</td><td>56307-79-0</td></tr><tr><td>Hexabromobiphenyl</td><td>59080-40-9</td></tr><tr><td>Hexabromo-1,1-biphenyl</td><td>36355-01-8</td></tr><tr><td>Firemaster FF-1</td><td>67774-32-7</td></tr><tr><td>Heptabromobiphenyl</td><td>35194-78-6</td></tr><tr><td>Octabromobiphenyl</td><td>61288-13-9</td></tr><tr><td>Nonabromobiphenyl</td><td>27753-52-2</td></tr><tr><td>Decabromobiphenyl</td><td>13654-09-6</td></tr></table>					Substance name	CAS No.	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
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Decabromobiphenyl	13654-09-6																																					
6	Polybrominated diphenyl ethers (PBDEs)	•RoHS Directive 2011/65/EU •Japan Law concerning the evaluation of chemical substances •US TSCA PBT Rules	All	•Intentionally added •0.1% by weight (1,000 ppm) for PBDEs in homogeneous material	Flame retardant																																	
		EU POPs Regulation (EU) 2019/1021	All except the application products for RoHS Directive 2011/65/EU	•Intentionally added •0.001% by weight (10 ppm) for the sum of PBDEs in article																																		
		Representative examples of relevant substance																																				
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Bromodiphenyl ether</td><td>101-55-3</td></tr><tr><td>Dibromodiphenyl ether</td><td>2050-47-7</td></tr><tr><td>Tribromodiphenyl ether</td><td>49690-94-0</td></tr><tr><td>Tetrabromodiphenyl ether</td><td>40088-47-9</td></tr><tr><td>Pentabromodiphenyl ether (note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides)</td><td>32534-81-9 (CAS number used for commercial grades of PeBDPO)</td></tr><tr><td>Hexabromodiphenyl ether</td><td>36483-60-0</td></tr><tr><td>Heptabromodiphenyl ether</td><td>68928-80-3</td></tr><tr><td>Octabromodiphenyl ether</td><td>32536-52-0</td></tr><tr><td>Nonabromodiphenyl ether</td><td>63936-56-1</td></tr><tr><td>Decabromodiphenyl ether (DecaBDE)</td><td>1163-19-5</td></tr></table>					Substance name	CAS No.	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 diphenyloxides)	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 (DecaBDE)	1163-19-5										
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Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)									
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use				
7	Polychlorinated biphenyls (PCBs) and specific substitutes	• Japan Law concerning the evaluation of chemical substances • ANNEX XVII Entry 24-26 of REACH Regulation (EC) No 1907/2006 • US TSCA	All	Intentionally added	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution, plasticizer, flame retardant, dielectric sealant, printing ink, carbonless copying paper				
					Representative examples of relevant substance				
					Substance name				CAS No.
					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
8	Polychlorinated terphenyls (PCTs)	ANNEX XVII Entry 1 of REACH Regulation (EC) No 1907/2006	All	0.005% by weight (50 ppm) for PCTs in material	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution, plasticizer, flame retardant, coatings for electrical wire and cable, dielectric sealant printing ink, carbonless copying paper				
					Representative examples of relevant substance				
					Substance name				CAS No.
					Polychlorinated Terphenyls (all isomers and congeners)				61788-33-8
9	Polychlorinated naphthalenes (PCNs)	• Japan Law concerning the evaluation of chemical substances • EU POPs regulation (EU) 2019/1021	All	Intentionally added	Lubricant, paint, stabilizer (electric haracteristic, flame-resistant, waterresistant) insulator, flame retardant, antiseptics, mildew repellent				
					Representative examples of relevant substance				
					Substance name				CAS No.
					Polychlorinated naphthalenes				70776-03-3

Prohibited Chemical Substances (continued)

[illegible]

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
12	Bis(tributyltin) oxide (TBTO)	• ANNEX XVII Entry 20 of REACH Regulation (EC) No 1907/2006 • Japan Law concerning the evaluation of chemical substances	All	• Intentionally added • 0.1% by weight (1,000 ppm) of tin in a part	Antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner, stabilizer for PVC, curing catalyst for silicone resin and urethane resin
13	Dibutyltin (DBT) compounds	ANNEX XVII Entry 20 of REACH Regulation (EC) No 1907/2006	All	0.1% by weight (1,000 ppm) of tin in a part	Plasticizer, ink, stabilizer for PVC, curing catalyst for silicone resin and urethane resin
14	Diocetyl tin (DOT) compounds	ANNEX XVII Entry 20 of REACH Regulation (EC) No 1907/2006	(a) textile and leather articles intended to come into contact with the skin, (b) childcare articles (c) wocomponent Room Temperature Vulcanization moulding kits (RTV-2 moulding kits)	0.1% by weight (1,000 ppm) of tin in a part	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)						
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use	
15	Ozone depleting substances	• Montreal Protocol • EU EC No. 2037/2000 • (EU) 2024/590 • US Clean Air Act	All	Intentionally added	Refrigerant, foaming agent, extinguishant, solvent cleaner	
		Representative examples of relevant substance				
		Substance name				CAS No.
		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) 1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)				76-12-0 28605-74-5 76-11-9
		Trichlorotrifluoroethane (CFC-113) 1,1,1-Trichloro-2,2,2 trifluoroethane (CFC-113a)				76-13-1 26523-64-8 354-58-5
		Dichlorotetrafluoroethane (CFC-114)				76-14-2
		Monochloropentafluoroethane (CFC-115)				76-15-3
		Heptachlorofluoropropane (CFC-211) 1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa) 1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)				422-78-6 135401-87-5 422-78-6 422-81-1
		Hexachlorodifluoropropane (CFC-212)				3182-26-1
		Pentachlorotrifluoropropane (CFC-213)				2354-06-5 134237-31-3
		Tetrachlorotetrafluoropropane (CFC-214) 1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa) 1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)				29255-31-0 677-68-9 2268-46-4
		Trichloropentafluoropropane (CFC-215) 1,2,2-Trichloropentafluoropropane (CFC-215aa) 1,2,3-Trichloropentafluoropropane (CFC-215ba) 1,1,2-Trichloropentafluoropropane (CFC-215bb) 1,1,3-Trichloropentafluoropropane (CFC-215ca) 1,1,1-Trichloropentafluoropropane (CFC-215cb)				1599-41-3 1599-41-3 76-17-5 — — 4259-43-2
		Dichlorohexafluoropropane (CFC-216)				661-97-2
		Chloroheptafluoropropane (CFC-217)				422-86-6
		Bromochloromethane (Halon-1011)				74-97-5
		Dibromodifluoromethane (Halon-1202)				75-61-6
		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)				71-55-6
		Bromomethane (methyl bromide)				74-83-9
		Bromoethane (ethyl bromide)				74-96-4
		1-Bromopropane (n-propyl bromide)				106-94-5
		Trifluoroiodomethane (trifluoromethyl iodide)				2314-97-8
		Chloromethane (methyl chloride)				74-87-3
		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

Ozone depleting substances (continued)	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
	Dichlorofluoromethane (HCFC-21)	75-43-4
	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)	354-14-3 354-11-0
	Trichlorodifluoroethane (HCFC-122)	41834-16-6
	1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a)	354-21-2
	1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	354-15-4 354-12-1
	Dichlorotrifluoroethane (HCFC-123)	34077-87-7
	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	306-83-2
	1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	354-23-4 812-04-4
	Chlorotetrafluoroethane (HCFC-124)	63938-10-3
	1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	2837-89-0 354-25-6
	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 (HCFC-131a)	811-95-0
	1,1,1-Trichloro-2-fluoroethane (HCFC-131b)	2366-36-1
	Dichlorodifluoroethane (HCFC-132)	25915-78-0
	1,1-Dichloro-2,2-difluoroethane (HCFC-132a)	431-06-1
	1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	471-43-2
	1,1-Dichloro-1,2-difluoroethane (HCFC-132c)	1649-08-7 1842-05-3
	Chlorotrifluoroethane (HCFC-133)	1330-45-6
	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	431-07-2
	1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	75-88-7 421-04-5
	Dichlorofluoroethane (HCFC-141)	25167-88-8
	1,1-Dichloro-2-fluoroethane (HCFC-141a)	430-57-9
	1,1-Dichloro-1-fluoroethane (HCFC-141b)	430-53-5 1717-00-6
	Chlorodifluoroethane (HCFC-142)	25497-29-4
	1-Chloro-1,1-difluoroethane (HCFC-142b)	338-65-8
	1-Chloro-1,2-difluoroethane (HCFC-142a)	75-68-3 338-64-7
	Chlorofluoroethane (HCFC-151)	110587-14-9
	1-Chloro-1-fluoroethane (HCFC-151a)	762-50-5 1615-75-4
	Hexachlorofluoropropane (HCFC-221)	134237-35-7 29470-94-8

Ozone depleting substances (continued)	1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)	422-26-4
	Pentachlorodifluoropropane (HCFC-222)	134237-36-8
	1,1,1,3,3-pentachloro-2,2-difluoropropane (HCFC-222ca))	422-49-1
	1,2,2,3,3-pentachloro-1,1-difluoropropane (HCFC-222aa)	422-30-0
	Tetrachlorotrifluoropropane (HCFC-223)	134237-37-9
	1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223ca)	422-52-6
	1,1,1,3-Tetrachloro-2,2,3-trifluoropropane (HCFC-223cb)	422-50-4
	Trichlorotetrafluoropropane (HCFC-224)	134237-38-0
	1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca)	422-54-8
	1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb)	422-53-7
	1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	422-51-7
	Dichloropentafluoropropane (HCFC-225)	127564-92-5
	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
	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
	2-Chloro-1,1,1,3,3,3-hexafluoro-propane (HCFC-226da)	431-87-8
	Pentachlorofluoropropane (HCFC-231)	134190-48-0
	1,1,1,2,3-pentachloro-2-fluoro-propane (HCFC-231bb)	421-94-3
	Tetrachlorodifluoropropane (HCFC-232)	134237-39-1
	1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)	460-89-9
	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
	1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)	425-94-5
	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
	1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)	666-27-3
	Trichlorodifluoropropane (HCFC-242)	134237-42-6
	1,3,3-Trichloro-1,1-difluoropropane (HCFC-242fa)	460-63-9
	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
	1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc)	421-75-0
	Trichlorofluoropropane (HCFC-251)	134190-51-5
	1,1,3-Trichloro-1-fluoropropane (HCFC-251fb)	818-99-5
	1,1,2-Trichloro-1-fluoropropane (HCFC-251dc)	421-41-0
	Dichlorodifluoropropane (HCFC-252)	134190-52-6
	1,3-Dichloro-1,1-difluoropropane (HCFC-252fb)	819-00-1
	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
	1,2-Dichloro-2-fluoro-propane (HCFC-261ba)	420-97-3
	Chlorodifluoropropane (HCFC-262)	134190-53-7
	1-Chloro-2,2-difluoropropane (HCFC-262ca)	420-99-5
	2-Chloro-1,3-difluoropropane (HCFC-262da)	102738-79-4
	1-Chloro-1,1-difluoropropane (HCFC-262fc)	421-02-3
	Chlorofluoropropane (HCFC-271)	134190-54-8
	2-Chloro-2-fluoropropane (HCFC-271ba)	420-44-0
	1-Chloro-1-fluoropropane (HCFC-271fb)	430-55-7
Note: These substances may contain further isomers that are not listed here. Isomers with CAS numbers have been included when available.		

Prohibited Chemical Substances (continued)

Permitted Chemical Substances (continued)																																																						
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use																																																	
16	Asbestos	• ANNEX XVII Entry 6 of REACH Regulation (EC) No 1907/2006 • US TSCA	All	• Intentionally added	Insulator, filler, pigment, paint, talc, heat insulating material																																																	
		Representative examples of relevant substance																																																				
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Asbestos</td><td>1332-21-4</td></tr><tr><td>Actinolite</td><td>77536-66-4</td></tr><tr><td>Amosite (Grunerite)</td><td>12172-73-5</td></tr><tr><td>Anthophyllite</td><td>77536-67-5</td></tr><tr><td>Chrysotile</td><td>12001-29-5</td></tr><tr><td>Crocidolite</td><td>12001-28-4</td></tr><tr><td>Tremolite</td><td>77536-68-6</td></tr></table>				Substance name	CAS No.	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																																	
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17	Azocolourants and azodyes which form certain aromatic amines ⁽¹⁾	• ANNEX XVII Entry 43 of REACH Regulation (EC) No 1907/2006	Textiles and leather	0.003% by weight (30 ppm) ⁽¹⁾ of the finished textile/leather product	Pigment, dye, colorant																																																	
		Relevant aromatic amines																																																				
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Biphenyl-4-ylamine</td><td>92-67-1</td></tr><tr><td>Benzidine</td><td>92-87-5</td></tr><tr><td>4-chloro-o-toluidine</td><td>95-69-2</td></tr><tr><td>2-naphthylamine</td><td>91-59-8</td></tr><tr><td>o-aminoazotoluene</td><td>97-56-3</td></tr><tr><td>5-nitro-o-toluidine</td><td>99-55-8</td></tr><tr><td>4-chloroaniline</td><td>106-47-8</td></tr><tr><td>4-methoxy-m-phenylenediamine</td><td>615-05-4</td></tr><tr><td>4,4'-methylenedianiline</td><td>101-77-9</td></tr><tr><td>3,3'-dichlorobenzidine</td><td>91-94-1</td></tr><tr><td>3,3'-dimethoxybenzidine</td><td>119-90-4</td></tr><tr><td>3,3'-dimethylbenzidine</td><td>119-93-7</td></tr><tr><td>4,4'-methylenedi-o-toluidine</td><td>838-88-0</td></tr><tr><td>6-methoxy-m-toluidine</td><td>120-71-8</td></tr><tr><td>4,4'-methylene-bis(2-chloroaniline)</td><td>101-14-4</td></tr><tr><td>4,4'-oxydianiline</td><td>101-80-4</td></tr><tr><td>4,4'-thiodianiline</td><td>139-65-1</td></tr><tr><td>o-toluidine</td><td>95-53-4</td></tr><tr><td>4-methyl-m-phenylenediamine</td><td>95-80-7</td></tr><tr><td>2,4,5-trimethylaniline</td><td>137-17-7</td></tr><tr><td>o-anisidine</td><td>90-04-0</td></tr><tr><td>4-amino azobenzene</td><td>60-09-3</td></tr></table>				Substance name	CAS No.	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			
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Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)						
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use	
18	Polyvinyl chloride (PVC) / PVC compounds	• JS709	• Packaging materials • carrying bag, pouch	0.1% total chlorine content by weight (1,000 ppm) in plastic material	Insulator, cable coating, film, tube, tamperproof labels, clam-shell packs	
		If customers specify use of PVC packaging materials, above prohibitions shall not apply. Controlled chemical substances shall apply to applications other than the above.				
		Representative examples of relevant substance				
		Substance name				CAS No.
		Polyvinyl chloride (PVC)				9002-86-2
19	Perfluorooctane sulfonate (PFOS), its salts and PFOS-related substances	• EU POPs Regulation (EU) 2019/1021	All	• Intentionally added	Photoresist, anti-reflection coating agent, film, paper, photos coating, plating mist inhibitor, lubricating oil used in the electroplating process	
		• Canadian Environmental Protection Act 1999		• 0.0000025% by weight (25 ppb) of PFOS including its salts in a mixture or an article		
		• Japan Law concerning the evaluation of chemical substances		• 0.0001% by weight (1000ppb) of one or a combination of PFOS-related substances in a mixture or an article		
		Representative examples of relevant substance				
		PFOS and its salts				CAS No.
		Perfluorooctane Sulfonate (PFOS)				1763-23-1
		Ammonium heptadecafluoro-1-octanesulfonate				29081-56-9
		Potassium heptadecafluoro-1-octanesulfonate				2795-39-3
		Lithium heptadecafluoro-1-octanesulfonate				29457-72-5
		Bis(2-hydroxyethyl) ammonium perfluorooctanesulfonate				70225-14-8
		PFOS-related substances				CAS No.
		Perfluorooctane-1-sulfonyl fluoride (PFOSF)				307-35-7
		2-(N-Ethylperfluorooctanesulfonamido) ethyl methacrylate				376-14-7
		N-Ethyl-N-(2-hydroxyethyl) perfluorooctylsulphonamide				1691-99-2
		N-(2-Hydroxyethyl)-N-methylperfluorooctanesulphonamide				24448-09-7
		N-Ethyl perfluoro octansulfonamide				4151-50-2
N-Methyl perfluorooctanesulfonamide				31506-32-8		
20	Dimethyl fumarate (DMF)	ANNEX XVII Entry 61 of REACH Regulation (EC) No 1907/2006	All	0.00001% by weight (0.1 ppm) for DMF in a part	Biocide, mold treatment of electronic leather seat including recliner, massage chair	
		Relevant substance				
		Substance name				CAS No.
Dimethyl fumarate (DMF)				624-49-7		

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)										
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use					
21	Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl) (UV-320)	Japan Law concerning the evaluation of chemical substances	All	Intentionally added	Adhesive, paint, printing ink, plastics, inked ribbon, putty, caulking or sealing filler					
		Relevant substance								
		Substance name		CAS No.						
		Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)		3846-71-7						
22	Hexabromocyclododecane (HBCD) and all major diastereoisomers	• Japan Law concerning the evaluation of chemical substances • EU POPs Regulation (EU) 2019/1021	All	• Intentionally added • 0.0075% by weight (75 ppm) for HBCDs in an article	Flame retardant mainly used for expanded polystyrene and some types of fiber					
						Representative examples of relevant substance				
						Substance name		CAS No.		
						Hexabromocyclododecane (HBCD)		25637-99-4 3194-55-6		
						α-hexabromocyclododecane		134237-50-6		
						β-hexabromocyclododecane		134237-51-7		
						γ-hexabromocyclododecane		134237-52-8		
						rel-(1R,2S,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane		4736-49-6		
						rel-(1R,2S,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane		65701-47-5		
						(1R,2R,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane		138257-17-7		
						(1R,2R,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane		138257-18-8		
						(1R,2S,5S,6R,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane		138257-19-9		
						(1R,2S,5S,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane		169102-57-2		
(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane		678970-15-5								
(1R,2S,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane		678970-16-6								
(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane		678970-17-7								
Note: HBCD is also referred to as HBCDD. HBCD and HBCDD are the same substance.										
23	Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances ⁽⁴⁾	• Japan Law concerning the evaluation of chemical substances • EU POPs Regulation (EU)2019/1021 and (EU)2020/784	All	• Intentionally added • 0.0000025% by weight (25 ppb) of PFOA including its salts in a mixture or an article • 0.0001% by weight (1000ppb) of one or a combination of PFOA-related substances in a mixture or an article	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist, plating solution, activator, coating, solder, lubricant, adhesive, paint, ink surface treating, agent for paper, resin modifier					
						Exemption PFOA and its salts and/or PFOA-related compounds equal to or below 0,0002 % by weight (2ppm) contained in medical devices other than invasive devices and implantable devices.				

Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances ⁽⁴⁾ (continued)	Representative examples of relevant substance	
	PFOA and its salts	CAS No.
	Perfluorooctanoic acid; PFOA	335-67-1
	Ammonium pentadecafluorooctanoate; APFO	3825-26-1
	Sodium perfluorooctanoate	335-95-5
	Potassium perfluorooctanoate	2395-00-8
	Silver perfluorooctanoate	335-93-3
	Tris(pentadecafluorooctanoic acid)chromium(III) salt	68141-02-6
	Ethanaminium, N, N, N-triethyl-, salt with pentadecafluorooctanoic acid (1:1)	98241-25-9
	Hexanoic acid, 2,3,3,4,4,5,5,6,6,6-decafluoro-2-(1,1,2,2,2-pentafluoroethyl)-, ammonium salt (1:1)	13058-06-5
	Ammonium salt, linear/branched PFOA	90480-55-0
	Hexanoic acid, 2,2,3,4,5,5,6,6,6-nonafluoro-3,4-bis(trifluoromethyl)-	1882109-81-0
	Hexanoic acid, 2,3,3,4,4,5,6,6,6-nonafluoro-2,5-bis(trifluoromethyl)-	1882109-80-9
	Heptanoic acid, 2,2,3,3,4,4,5,5,6,7,7,7-dodecafluoro-6-(trifluoromethyl)-	15166-06-0
	Ammonium salt, linear/branched PFOA	90480-56-1
	PFOA-related substances	CAS No.
	Pentadecafluorooctyl fluoride	335-66-0
	Methyl perfluorooctanoate	376-27-2
	Ethyl perfluorooctanoate	3108-24-5
	Triethoxy-1H,1H,2H,2H-perfluorodecylsilane	101947-16-4
	1,3-Propanediol, 2,2-bis[(γ-w-perfluoro-C4-10-alkyl) thio] methyl] derivs., phosphates, ammonium salts	148240-85-1
	1,3-Propanediol, 2,2-bis[(γ-w-perfluoro-C6-12-alkyl) thio] methyl] derivs., phosphates, ammonium salts	148240-87-3
	2-Propenoic acid, C16-18-alkyl esters, polymers with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl acrylate	160336-09-4
	2-(Perfluorooctyl)ethyl methacrylate	1996-88-9
	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-Heptadecafluoro-10-iododecane	2043-53-0
	Cyclotetrasiloxane, 2-(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-heptadecafluoroundecyl)-2,4,6,8-tetramethyl-, Si-[3-(oxiranymethoxy)propyl] derivs	206886-57-9
	1H,1H,2H-Perfluoro-1-decene	21652-58-4
	3,4-bis [(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl) amino] benzenesulphonyl chloride	24216-05-5
	2H,2H-Perfluorodecanoic acid	27854-31-5
	1H,1H,2H,2H-Heptadecafluorodecyl acrylate	27905-45-9
	1H,1H,2H,2H-Perfluorodecylmethyldichlorosilane	3102-79-2
	Tris [4-(1H,1H,2H,2H- perfluorodecyl) phenyl] phosphine	325459-92-5
	Bis[tris(4-(1H,1H,2H,2H-perfluorodecyl) phenyl) phosphine] palladium (II) dichloride	326475-46-1
	Perfluorooctanoic anhydride	33496-48-9
	2-carboxyethylbis(2-hydroxyethyl)-3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1- oxooctyl) amino] propylammonium hydroxide	39186-68-0
	Perfluorooctyl phosphonic acid; C8-PFPA	40143-78-0
	Bis(heptadecafluorooctyl)phosphinic acid, C8/C8-PFPIA	40143-79-1
	N-[3-[bis(2-hydroxyethyl) amino] propyl] - 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanamide	41358-63-8
	Perfluorooctyl iodide	507-63-1
	2-Propenoic acid, 2-methyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl ester, polymer with 2-propenoic acid	53515-73-4
	1-Propanaminium, N,N,N-trimethyl-3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino]-, chloride	53517-98-9
	Mono[2-(perfluorooctyl)ethyl] phosphate	57678-03-2

Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances ⁽⁴⁾ (continued)	Bis(perfluorooctyl) phosphinic acid; C6/C8-PFPIA	610800-34-5
	Poly(difluoromethylene), α-fluoro-ω- [2- [[2-(trimethylammonio) ethyl] thio] ethyl]-, methyl sulfate	65530-57-6
	Poly(difluoromethylene), α-fluoro-ω-[2-(phosphonooxy)ethyl]-	65530-61-2
	Poly(difluoromethylene), α, α'- [phosphinicobis (oxy-2,1-ethanediyl)] bis [ω-fluoro-	65530-62-3
	1H,1H,2H,2H-Perfluoro-1-decanol	678-39-7
	Bis[2-(perfluorooctyl)ethyl] phosphate	678-41-1
	Fatty acids, C7-13, perfluoro	68333-92-6
	Fatty acids, C7-13, perfluoro, compds. with ethylamine	69278-80-4
	2-Decenoic acid,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-hexadecafluoro-	70887-84-2
	Pentanoic acid, 4,4-bis((gamma-omega-perfluoro-C8-20-alkyl) thio) derivs., compds. with diethanolamine	71608-61-2
	Fatty acids, C6-18, perfluoro, ammonium salts	72623-77-9
	Carboxylic acids, C7-13, perfluoro, ammonium salts	72968-38-8
	1H,1H,2H,2H-Perfluorodecyldimethylchlorosilane	74612-30-9
	1H,1H,2H,2H-Perfluorodecyltrichlorosilane	78560-44-8
	Poly(difluoromethylene), α-fluoro-ω-(2-sulfoethyl)-	80010-37-3
	Trimethoxy(1H,1H,2H,2H-heptadecafluorodecyl) silane	83048-65-1
	Heptadecafluoro-1-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl) oxy] nonene	84029-60-7
	N-(3-aminopropyl)-2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanamide	85938-56-3
	1-Propanesulfonic acid, 3-[ethyl(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl)amino] -, sodium salt	89685-61-0
	Octanoic acid, pentadecafluoro-, mixed esters with 2,2'-[1,4-butanediylbis(oxymethylene)] bis[oxirane] and 2,2'-[1,6-hexanediylbis(oxymethylene)] bis[oxirane]	90480-57-2
	Amides, C7-19, alpha-perfluoro-N, N -bis(hydroxyethyl)	90622-99-4
	Fatty acids, C7-19, perfluoro	91032-01-8
	Poly(oxy-1,2-ethanediyl), α-[2-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl) amino] ethyl] -ω-hydroxy-	93480-00-3
	Diammonium 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl phosphate	93857-44-4
	Diammonium 4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-heptadecafluoro-2-hydroxyundecyl phosphate	94200-45-0
	Carbamic acid, [2-(sulfothio)ethyl]-, C-(γ-ω-perfluoro- C6-9-alkyl) esters, monosodium salts	95370-51-7

Prohibited Chemical Substances (continued)

Permitted Chemical Substances (continued)					
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
24	Polycyclic-aromatic hydrocarbons (PAH)	• ANNEX XVII Entry 50 of REACH Regulation (EC) No 1907/2006	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	0.0001% by weight (1 ppm) of any one of following PAHs in rubber or plastic component	Rubber, plasticizer, colored pigment for plastic
			Rubber or plastic components in toys, including activity toys, and childcare articles, that come into direct as well as prolonged or short- term repetitive contact with the human skin or the oral cavity	0.00005% by weight (0.5 ppm) In rubber or plastic component	
		• ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006	• Clothing or related accessories • Textiles • Footwear	0.0001% by weight (1 ppm) of any one of following PAHs in homogeneous material	
		Relevant substance			
		Substance name	CAS No.		
		Benzo[a]pyrene (BaP)	50-32-8		
		Benzo[e]pyrene (BeP)	192-97-2		
		Benzo[a]anthracene (BaA)	56-55-3		
		Chrysen (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		
		Dibenzo[a,h]anthracene (DBAhA)	53-70-3		

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)												
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use							
25	Selected four Phthalates • Bis (2-ethylhexyl) phthalate (DEHP) • Dibutyl phthalate (DBP) • Benzyl butyl phthalate (BBP) • Diisobutyl phthalate (DIBP)	Commission Delegated Directive (EU) 2015/863 amending Annex II to RoHS Directive 2011/65/EU	Electrical and electronic products (Including accessories)	0.1% by weight (1,000 ppm) of each phthalate in homogeneous material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant							
		ANNEX XVII Entry 51 of REACH Regulation (EC) No 1907/2006	All excluding the following exemptions	0.1% by weight (1,000 ppm) for the sum of each phthalate in plasticised material								
		“ANNEX XVII Entry 51 of REACH Regulation (EC) No 1907/2006” mentioned above shall not apply to the following articles. (1) Articles exclusively for industrial or agricultural use, or for use exclusively in the open air, provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin (2) Aircraft, placed on the market before 7 January 2024, or articles, whenever placed on the market, for use exclusively in the maintenance or repair of those aircraft, where those articles are essential for the safety and airworthiness of the aircraft (3) Motor vehicles within the scope of Directive 2007/46/EC, placed on the market before 7 January 2024, or articles, whenever placed on the market, for use exclusively in the maintenance or repair of those vehicles, where the vehicles cannot function as intended without those articles (4) Measuring devices for laboratory use, or parts thereof (5) Materials and articles intended to come into contact with food within the scope of Regulation (EC) No 1935/2004 or Commission Regulation (EU) No 10/2011 (6) Medical devices within the scope of Directives 90/385/EEC, 93/42/EEC or 98/79/EC, or parts thereof (7) Electrical and electronic equipment within the scope of RoHS Directive 2011/65/EU (8) The immediate packaging of medicinal products within the scope of Regulation (EC) No 726/2004, Directive 2001/82/EC or Directive 2001/83/EC Relevant substance										
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Bis (2-ethylhexyl) phthalate (DEHP)</td><td>117-81-7</td></tr><tr><td>Dibutyl phthalate (DBP)</td><td>84-74-2</td></tr><tr><td>Benzyl butyl phthalate (BBP)</td><td>85-68-7</td></tr><tr><td>Diisobutyl phthalate (DIBP)</td><td>84-69-5</td></tr></table>				Substance name	CAS No.	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	Dibutyl phthalate (DBP)	84-74-2	Benzyl butyl phthalate (BBP)
Substance name	CAS No.											
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7											
Dibutyl phthalate (DBP)	84-74-2											
Benzyl butyl phthalate (BBP)	85-68-7											
Diisobutyl phthalate (DIBP)	84-69-5											
26	Formaldehyde	• ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006 • Austria-BGBl 1990/194	• Clothing or related accessories • Textiles • Footwear	0.0075% by weight (75 ppm) for Formaldehyde in homogeneous material	Adhesive, paint							
		• US Federal Law 40 CFR Part 770 • ANNEX XVII Entry 77 ⁽²⁾	Wood products or parts using plywood, particle board, medium density fiber board or the like	Intentionally added ⁽²⁾	Speaker box, rack							
		ANNEX XVII Entry 77 ⁽²⁾	All articles except for the application products above	Intentionally added ⁽²⁾	Adhesive, paint							
		Relevant substance										
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Formaldehyde</td><td>50-00-0</td></tr></table>			Substance name	CAS No.	Formaldehyde	50-00-0						
Substance name	CAS No.											
Formaldehyde	50-00-0											

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use		
27	Arsenic/Arsenic compounds	ANNEX XVII Entry 19 of REACH Regulation (EC) No 1907/2006	Wood	Intentionally added	Preservative for wood		
		ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006	•Clothing or related accessories •Textiles •Footwear	0.0001% by weight (1 ppm) of arsenic in homogeneous material			
		—	Optical glass, filter glass	Intentionally added ⁽³⁾	Antifoaming agent, decolorizer		
		Representative examples of relevant substance					
		Substance name				CAS No.	
		Arsenic				7440-38-2	
		Chromated copper arsenate (CCA)				37337-13-6	
		Diarsenic pentoxide				1303-28-2	
		Diarsenic trioxide				1327-53-3	
		Triethyl arsenate				15606-95-8	
28	Fluorinated greenhouse gases (HFC, PFC, SF ₆)	EU F-Gas Regulation (EU) 2024/573	Refer to the followings as products, equipments and gases to be prohibited	Intentionally added	Refrigerant, Blowing agent, extinguishing agent, cleaning agent, insulating material, caustic gas		
						Targeted fluorinated greenhouse gases (EU F-Gas Regulation Annex I)	
		Substance name				CAS No.	GWP ^(※1)
		Hydrofluorocarbons (HFCs)					
		Trifluoromethane (fluoroform) (HFC-23)				75-46-7	14,800
		Difluoromethane (HFC-32)				75-10-5	675
		Methyl fluoride (methyl fluoride) (HFC-41)				593-53-3	92
		Pentafluoroethane (HFC-125)				354-33-6	3,500
		1,1,2,2-Tetrafluoroethane (HFC-134)				359-35-3	1,100
		1,1,1,2-Tetrafluoroethane (HFC-134a)				811-97-2	1,430
		1,1,2-Trifluoroethane (HFC-143)				430-66-0	353
		1,1,1-Trifluoroethane (HFC-143a)				420-46-2	4,470
		1,2-Difluoroethane (HFC-152)				624-72-6	53
		1,1-Difluoroethane (HFC-152a)				75-37-6	124
		Fluoroethane (HFC-161)				353-36-6	12
		1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)				431-89-0	3,220
		1,1,1,2,2,3-Hexafluoro-propane (HFC-236cb)				677-56-5	1,340
		1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)				431-63-0	1,370
		1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)				690-39-1	9,810
		1,1,2,2,3-Pentafluoropropane (HFC-245ca)				679-86-7	693
		1,1,1,3,3-Pentafluoropropane (HFC-245fa)				460-73-1	1,030
		1,1,1,3,3-Pentafluorobutane (HFC-365mfc)				406-58-6	794
		1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee)				138495-42-8	1,640
		Perfluorocarbons (PFCs)					
		Tetrafluoromethane (perfluoromethane, carbon tetrafluoride) (PFC-14)				75-73-0	7,390
		Hexafluoroethane (perfluoroethane) (PFC-116)				76-16-4	12,200
		Octafluoropropane (perfluoropropane) (PFC-218)				76-19-7	8,830
		Decafluorobutane (perfluorobutane) (PFC-31-10)				355-25-9	8,860
Dodecafluoropentane (perfluoropentane) (PFC-41-12)				678-26-2	9,160		
Tetradecafluorohexane (perfluorohexane) (PFC-51-14)				355-42-0	9,300		
Octafluorocyclobutane (perfluorocyclobutane) (PFC-c318)				115-25-3	10,300		
Perflunafene(PFC-9-1-18)				306-94-5	7,480		
Perfluoroisohexane (R-41-14)				355-04-4	7,370		

Fluorinated greenhouse gases (HFC, PFC, SF ₆) (continued)	Other perfluorinated compounds		
	Sulfur hexafluoride (SF ₆)	2551-62-4	22,800
	2,3,3,3-Tetrafluoro-2-(trifluoromethyl)propanenitrile	42532-60-5	2,750
	(※1) GWP: global warming potential		
	For other substances, gases and products covered, refer to Annexes II to IV of the EU F-Gases Regulation (EU) 2024/573. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202400573#anx_II		

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
29	CMR substances listed in Annex XVII of REACH Regulation (Excluding substances already listed as prohibited chemical substances)	ANNEX XVII Entry 72 ⁽⁵⁾ of REACH Regulation (EC) No 1907/2006	• Clothing or related accessories • Textiles • Footwear	See table below	Strap, carrying bag, pouch, etc
		Relevant substances			
		Substance name	CAS No.	Threshold Level (in homogeneous material)	
		Benzene	71-43-2	0.0005 wt% (5 ppm)	
		α, α, α, 4-Tetrachlorotoluene; p-Chlorobenzotrichloride	5216-25-1	0.0001 wt% (1 ppm)	
		α, α, α-Trichlorotoluene; benzotrichloride	98-07-7	0.0001 wt% (1 ppm)	
		α-Chlorotoluene; Benzyl chloride	100-44-7	0.0001 wt% (1 ppm)	
		1,2-Benzenedicarboxylic acid; Di-C 6-8-branched alkylesters, C 7-rich	71888-89-6	0.1 wt% (1000 ppm)	
		Bis(2-methoxyethyl) phthalate	117-82-8	0.1 wt% (1000 ppm)	
		Diisopentylphthalate	605-50-5	0.1 wt% (1000 ppm)	
		Di-n-pentyl phthalate (DPP)	131-18-0	0.1 wt% (1000 ppm)	
		Di-n-hexyl phthalate (DnHP)	84-75-3	0.1 wt% (1000 ppm)	
		N-Methyl-2-pyrrolidone; 1-Methyl-2-pyrrolidone (NMP)	872-50-4	0.3 wt% (3000 ppm)	
		N, N-Dimethylacetamide (DMAC)	127-19-5	0.3 wt% (3000 ppm)	
		N, N-Dimethylformamide; Dimethyl formamide	68-12-2	0.3 wt% (3000 ppm)	
		1,4,5,8-Tetraaminoanthraquinone C.I. Disperse Blue 1	2475-45-8	0.005 wt% (50 ppm)	
		Benzenamine, 4,4'-(4-iminocyclohexa-2,5-dienylidenemethylene) dianiline hydrochloride C.I. Basic Red 9	569-61-9	0.005 wt% (50 ppm)	
		[4-[4,4'-Bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethyl ammonium chloride; C.I. Basic Violet 3 with ≥ 0,1 % of Michler's ketone (EC no. 202-027-5)	548-62-9	0.005 wt% (50 ppm)	
		4-Chloro-o-toluidinium chloride	3165-93-3	0.003 wt% (30 ppm)	
		2-Naphthylammoniumacetate	553-00-4	0.003 wt% (30 ppm)	
		4-Methoxy-m-phenylene diammonium sulphate; 2,4-Diaminoanisoole sulphate	39156-41-7	0.003 wt% (30 ppm)	
		2,4,5-Trimethylaniline hydrochloride	21436-97-5	0.003 wt% (30 ppm)	
		Quinoline	91-22-5	0.005 wt% (50 ppm)	

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)										
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use					
30	Phenol, Isopropylated Phosphate (PIP (3:1))	US TSCA PBT Rules	All except the below applications	• Intentionally added • 0.1% by weight (1000ppm) for PIP(3:1) in a mixture or an article	Flame retardant, plasticizer, adhesive, sealant, lubricant					
		For the following Exemption, the above standards shall be applied from one year prior to the expiration date of each exemption. Exemption scope and expiration date may be revised depending on situation.								
		Exemption (1) Hydraulic fluids either for the aviation industry or to meet military specifications for safety and performance where no alternative chemical is available that meets U.S. Department of Defense specification requirements (2) An intermediate in a closed system to produce cyanoacrylate adhesives (3) Lubricants and greases for aerospace use (4) Lubricants and greases excluding for aerospace use, until November 20, 2039 (5) Equipments and parts for commercial electronic equipment, until November 19, 2034 (6) Equipments and parts for manufacturing equipment including in the semiconductor industry, and laboratory equipment, until November 19, 2034 (7) Replacement parts for the consumer electronic equipment, until November 18, 2031								
		Relevant substance <table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Phenol, Isopropylated Phosphate PIP(3:1)</td><td>68937-41-7</td></tr></table>					Substance name	CAS No.	Phenol, Isopropylated Phosphate PIP(3:1)	68937-41-7
Substance name	CAS No.									
Phenol, Isopropylated Phosphate PIP(3:1)	68937-41-7									
31	2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)	• US TSCA PBT Rules • Japan Law concerning the evaluation of chemical substances	All except articles	Intentionally added	Fuel additives, fuel injector cleaners and oil and lubricants					
		Relevant substance <table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)</td><td>732-26-3</td></tr></table>					Substance name	CAS No.	2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)	732-26-3
		Substance name	CAS No.							
		2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)	732-26-3							
32	Pentachlorothiophenol (PCTP)	US TSCA PBT Rules	All	Intentionally added	Rubber kneading accelerator					
		Relevant substance <table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Pentachlorothiophenol (PCTP)</td><td>133-49-3</td></tr></table>					Substance name	CAS No.	Pentachlorothiophenol (PCTP)	133-49-3
		Substance name	CAS No.							
		Pentachlorothiophenol (PCTP)	133-49-3							
33	Hexachlorobutadiene (HCBd)	• US TSCA PBT Rules • Japan Law concerning the evaluation of chemical substances	All	Intentionally added	Solvents, pesticides, hydraulic, heat transfer, or transformer fluid					
		Relevant substance <table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Hexachlorobutadiene (HCBd)</td><td>87-68-3</td></tr></table>					Substance name	CAS No.	Hexachlorobutadiene (HCBd)	87-68-3
		Substance name	CAS No.							
		Hexachlorobutadiene (HCBd)	87-68-3							

Prohibited Chemical Substances (continued)

Permitted Chemical Substances (continued)																										
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use																					
34	C9-C14 Perfluorocarboxylic acids (PFCAs), their salts and C9- C14 PFCA-related substances ^(6,7)	• ANNEX XVII Entry 68 of REACH Regulation (EC) No 1907/2006	All except the below applications	• 0.0000025% by weight (25 ppb) for the sum of C9-C14 PFCAs and their salts in a mixture or an article • 0.000026% by weight (260ppb) for the sum of C9-C14 PFCA- related substances in a mixture or an article	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist, plating solution, activator, coating, solder, lubricant, adhesive, paint, ink surface treating, agent for paper, resin modifier																					
		For the following Exemption, the above standards shall be applied from one year prior to the expiration date of each exemption.																								
		Exemption (1) Semiconductors used in spare or replacement parts for finished electronic equipment placed on the market before 31 December 2023; December 31, 2030 (2) For the sum of C9-C14 PFCAs in fluoroplastics and fluoroelastomers that contain perfluoroalkoxy groups; Containing less than 0.00001% by weight (100 ppb) ; From August 25, 2024 (3) Polytetrafluoroethylene (PTFE) micro powders produced by ionising irradiation or by thermal degradation containing less than 1,000 ppb for the sum of C9-C14 PFCAs; Representative examples of relevant substance <table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Perfluorononanoic acid (PFNA: C9 PFCA)</td><td>375-95-1</td></tr><tr><td>Sodium perfluorononanoate</td><td>21049-39-8</td></tr><tr><td>Ammonium perfluorononanoate</td><td>4149-60-4</td></tr><tr><td>Perfluorodecanoic acid (PFDA: C10 PFCA)</td><td>335-76-2</td></tr><tr><td>Sodium Perfluorodecanoate</td><td>3830-45-3</td></tr><tr><td>Ammonium perfluorodecanoate</td><td>3108-42-7</td></tr><tr><td>Perfluoroundecanoic acid (PFUnDA: C11 PFCA)</td><td>2058-94-8</td></tr><tr><td>Perfluorododecanoic acid (PFDoDA: C12 PFCA)</td><td>307-55-1</td></tr><tr><td>Perfluorotridecanoic acid (PFTrDA: C13 PFCA)</td><td>72629-94-8</td></tr><tr><td>Perfluorotetradecanoic acid (PFTDA: C14 PFCA)</td><td>376-06-7</td></tr></table>					Substance name	CAS No.	Perfluorononanoic acid (PFNA: C9 PFCA)	375-95-1	Sodium perfluorononanoate	21049-39-8	Ammonium perfluorononanoate	4149-60-4	Perfluorodecanoic acid (PFDA: C10 PFCA)	335-76-2	Sodium Perfluorodecanoate	3830-45-3	Ammonium perfluorodecanoate	3108-42-7	Perfluoroundecanoic acid (PFUnDA: C11 PFCA)	2058-94-8	Perfluorododecanoic acid (PFDoDA: C12 PFCA)	307-55-1	Perfluorotridecanoic acid (PFTrDA: C13 PFCA)	72629-94-8
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Perfluorononanoic acid (PFNA: C9 PFCA)	375-95-1																									
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Perfluorotridecanoic acid (PFTrDA: C13 PFCA)	72629-94-8																									
Perfluorotetradecanoic acid (PFTDA: C14 PFCA)	376-06-7																									

Prohibited Chemical Substances (continued)

Permitted Chemical Substances (continued)																						
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use																	
35	Perfluorohexanesulphonic acid (PFHxS), its salts and PFHxS-related substances	•EU POPs Regulation (EU) 2019/1021 •Japan Law concerning the evaluation of chemical substances	All	•Intentionally added •0.0000025% by weight (25ppb) for the sum of PFHxS and its salts in a mixture or an article •0.0001% by weight (1ppm, 1000ppb) for the sum of PFHxS-related substances in a mixture or an article	Carpets, leather, textile, paper, plating, electronic components																	
Representative examples of relevant substance																						
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Perfluorohexanesulphonic acid (PFHxS)</td><td>355-46-4</td></tr><tr><td>Sodium perfluorohexanesulfonate</td><td>82382-12-5</td></tr><tr><td>Perfluorohexanesulfonic acid potassium salt</td><td>3871-99-6</td></tr><tr><td>1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, lithium salt</td><td>55120-77-9</td></tr><tr><td>Ammonium perfluorohexane-1-sulfonate</td><td>68259-08-5</td></tr><tr><td>Sulfonic acids, C6-12-alkane, perfluoro, potassium salts</td><td>68391-09-3</td></tr><tr><td>Sulfonic acids, C6-12-alkane, perfluoro</td><td>93572-72-6</td></tr><tr><td>Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)</td><td>70225-16-0</td></tr></table>					Substance name	CAS No.	Perfluorohexanesulphonic acid (PFHxS)	355-46-4	Sodium perfluorohexanesulfonate	82382-12-5	Perfluorohexanesulfonic acid potassium salt	3871-99-6	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, lithium salt	55120-77-9	Ammonium perfluorohexane-1-sulfonate	68259-08-5	Sulfonic acids, C6-12-alkane, perfluoro, potassium salts	68391-09-3	Sulfonic acids, C6-12-alkane, perfluoro	93572-72-6	Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-16-0
Substance name	CAS No.																					
Perfluorohexanesulphonic acid (PFHxS)	355-46-4																					
Sodium perfluorohexanesulfonate	82382-12-5																					
Perfluorohexanesulfonic acid potassium salt	3871-99-6																					
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Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-16-0																					
36	Mineral oil aromatic Hydrocarbons (MOAH) comprising 1 to 7 aromatic rings	Frenchi AGECE Law	Packaging, Printed matter	0.1% by weights (1,000ppm) for MOAH in ink	Oil used for ink production																	
37	Mineral oil aromatic hydrocarbons (MOAH) comprising 3 to 7 aromatic rings	Frenchi AGECE Law	Packaging, Printed matter	0.0001% by weights (1ppm) for MOAH in ink	Oil used for ink production																	
38	Mineral oil saturated hydrocarbons (MOSH) with 16 to 35 carbon atoms	Frenchi AGECE Law	Packaging, Printed matter	0.1% by weights (1,000ppm) for MOSH in ink	Oil used for ink production																	

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
39	Dechlorane Plus	• EU POPs Regulation (EU) 2019/1021 • Japan Law concerning the evaluation of chemical substances	All	• Intentionally added • 0.0001% by weight (1ppm) for Dechlorane Plus in a mixture or an article	Adhesive, sealant, fame retardant, electrical insulation tape, Cable, Connector
Representative examples of relevant substance					
Substance name					CAS No.
1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene					13560-89-9
(1S,2S,5S,6S,9R,10R,13R,14R)-1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene					135821-74-8
(1S,2S,5R,6R,9S,10S,13R,14R)-1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene					135821-03-3
40	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	• EU POPs Regulation (EU) 2019/1021 • Japan Law concerning the evaluation of chemical substances	All	• Intentionally added • 0.0001% by weight (1ppm) for UV-328 in a mixture or an article	Ultraviolet absorber, polarizer, anti-reflection film, hologram label
For the following Exemption, the above standards shall apply from one year prior to the expiration date of each exemption.					
Exemption					
• Tri-acetyl cellulose (TAC) film in polarizers February 26, 2030					
Relevant substance					
Substance name					CAS No.
2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol (UV-328)					25973-55-1
41	Per- and polyfluoroalkyl substances (PFAS)	US California AB1817	Textile articles ⁽⁸⁾	• Intentionally added • 0.005% by weights(50ppm) of total organic fluorine in material	Water repellent, surface coating

Prohibited Chemical Substances (continued)

Prohibited Chemical Substances (continued)													
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use								
42	Undecafluorohexanoic acid (PFHxA), its salts and PFHxA-related substances ⁽⁹⁾	• ANNEX XVII Entry 79 of REACH Regulation (EC) No 1907/2006	Textile, leather articles	• Intentionally added • 0.0000025% by weight (25ppb) for the sum of PFHxA and its salts in homogeneous material • 0.0001% by weight (1ppm, 1000ppb) for the sum of PFHxS-related substances in homogeneous material	Carpet, leather, textile, paper, electronic components								
The above standards shall apply from October 10, 2025 (From 1 year prior to the effective date of Regulation). However, the start date of application may be postponed depending on situation.													
Representative examples of relevant substance													
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Undecafluorohexanoic acid</td><td>307-24-4</td></tr><tr><td>Sodium undecafluorohexanoate</td><td>2923-26-4</td></tr><tr><td>Ammonium undecafluorohexanoate</td><td>21615-47-4</td></tr></table>						Substance name	CAS No.	Undecafluorohexanoic acid	307-24-4	Sodium undecafluorohexanoate	2923-26-4	Ammonium undecafluorohexanoate	21615-47-4
Substance name	CAS No.												
Undecafluorohexanoic acid	307-24-4												
Sodium undecafluorohexanoate	2923-26-4												
Ammonium undecafluorohexanoate	21615-47-4												
43	Pentachlorophenol and its salts and esters	• EU POPs Regulation (EU) 2019/1021 • Japan Law concerning the evaluation of chemical substances	All	• Intentionally added • 0.0005% by weight (5ppm) for Pentachlorophenol and its salts and esters in a mixture or an article	Antiseptic, Preservatives								
Representative examples of relevant substance													
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Pentachlorophenol</td><td>87-86-5</td></tr></table>						Substance name	CAS No.	Pentachlorophenol	87-86-5				
Substance name	CAS No.												
Pentachlorophenol	87-86-5												
44	Medium chain chlorinated paraffins (MCCP) [with carbon chain lengths in the range C14–17 and chlorination levels at or exceeding 45 per cent chlorine by weight]	• Annex A (Elimination) of POPs Convention • The candidate substance of EU POPs Regulation (EU) 2019/1021 • Japan Law concerning the evaluation of chemical substances	All	• Intentionally added	Flame retardant resin materials								
The above standards shall apply from May 1, 2026. However, the start date of application may be postponed depending on situation.													
Representative examples of relevant substance													
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Chloroalkanes(C=14-17)</td><td>85535-85-9</td></tr></table>						Substance name	CAS No.	Chloroalkanes(C=14-17)	85535-85-9				
Substance name	CAS No.												
Chloroalkanes(C=14-17)	85535-85-9												

Prohibited Chemical Substances (continued)

Permitted Chemical Substances (continued)									
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use				
45	C9-C21 Long-chain perfluorocarboxylic acids (LC-PFCA), its salts and related compounds ⁽⁷⁾	• Annex A (Elimination) of POPs Convention	All	Intentionally added	Fluoropolymer processing aid, heat transfer medium				
		• The candidate substance of EU POPs Regulation (EU) 2019/1021							
		• Japan Law concerning the evaluation of chemical substances							
		The above standards shall apply from May 1, 2026. However, the start date of application may be postponed depending on situation.							
		Representative examples of relevant substance							
		Substance name				CAS No.			
		Perfluoropentadecanoic acid				141074-63-7			
		Perfluorohexadecanoic acid				67905-19-5			
		Perfluoroheptadecanoic acid				57475-95-3			
Perfluorooctadecanoic acid		16517-11-6							
Perfluorononadecanoic acid		133921-38-7							
Perfluoroeicosanoic acid		68310-12-3							

Notes:

- (1) The European Community's ban applies to azocolourants and azodyes that by reductive cleavage of azo groups may release one of the 22 aromatic amines listed. The threshold level given applies to these amines, not to the azocolourants and azodyes.
- (2) Regulatory thresholds for substances in these applications are based on emission limits in measurement methods specified in each law and regulation.

Law and regulation	Application products	Regulatory thresholds of emission limits for Formaldehyde
US Federal Law 40 CFR Part 770	Hardwood plywood made with a veneer core or a composite core	0.05ppm
	Medium-density fiberboard	0.11ppm
	Thin medium-density fiberboard	0.13ppm
	Particleboard	0.09ppm
ANNEX XVII Entry 77	Furniture and wood-based articles	0.062mg/m3
	Articles other than furniture and wood-based articles	0.080 mg/m3

- (3) However, the intentionally added of arsenic is conditionally permitted when their substitutions are not available currently because of material technology and they are technically and scientifically essential to maintain the optical performance required in product designing.
- (4) PFOA-related substances refer to substances (including its salts and polymers) having a linear or branched perfluoroheptyl group with the formula C7F15- or perfluorooctyl group with the formula C8F17- , as one of the structural elements. The following substances are excluded.
- C8F17-X, where X= F, Cl, Br.
 - Fluoropolymers that are covered by CF3[CF2] n-R', where R'=any group, n> 16;
 - Perfluoroalkyl carboxylic acids (including their salts, esters, halides and anhydrides) with ≥ 8 perfluorinated carbons;
 - Perfluoroalkane sulfonic acids and perfluoro phosphonic acids (including their salts, esters, halides and anhydrides) with ≥ 9 perfluorinated carbons;
 - Perfluorooctane sulfonic acid and its derivatives (PFOS), as listed in Annex I of POPs Regulation.
- (5) "ANNEX XVII Entry 72 of REACH Regulation (EC) No 1907/2006" shall not apply to the following uses.
- (1) Clothing, related accessories or footwear, or parts of clothing, related accessories or footwear, made exclusively of natural leather, fur or hide
 - (2) Non-textile fasteners and non-textile decorative attachments
 - (3) Second-hand clothing, related accessories, textiles other than clothing or footwear

- (4) Wall-to-wall carpets and textile floor coverings for indoor use, rugs and runners
 - (5) Personal protective equipment within the scope of Regulation (EU) 2016/425 and medical devices within the scope of Regulation (EU) 2017/74
 - (6) Disposable textiles. 'Disposable textiles' means textiles that are designed to be used only once or for a limited time and are not intended for subsequent use for the same or a similar purpose.
 - (7) Textiles other than clothing which, under normal or reasonably foreseeable conditions of use, not come into contact with human skin to an extent similar to clothing.
- (6) No.34 C9-C14 PFCAs, their salts and C9-C14 PFCA-related substances cover the following substances.
- (1) Linear and branched perfluorocarboxylic acids of the formula $C_nF_{2n+1}-C(=O)OH$ where $n = 8, 9, 10, 11, 12, \text{ or } 13$ (C9-C14 PFCAs), including their salts, and any combinations.
 - (2) Any C9-C14 PFCA-related substance having a perfluoro group with the formula $C_nF_{2n+1}-$ directly attached to another carbon atom, where $n = 8, 9, 10, 11, 12, \text{ or } 13$, including their salts and any combinations.
 - (3) Any C9-C14 PFCA-related substance having a perfluoro group with the formula $C_nF_{2n+1}-$ that it is not directly attached to another carbon atom, where $n = 9, 10, 11, 12, 13 \text{ or } 14$ as one of the structural elements, including their salts and any combinations. The following substances are excluded.
 - $C_nF_{2n+1}-X$, where $X = F, Cl, \text{ or } Br$
 - where $n = 9, 10, 11, 12, 13 \text{ or } 14$, including any combinations thereof,
 - $C_nF_{2n+1}-C(=O)OX'$ where $n > 13$ and $X' = \text{any group}$, including salts.
- (7) Prohibited Chemical Substances No. 34 "C9-C14 perfluorocarboxylic acids (PFCAs) and their salts, and C9-C14 PFCA-related substances" and No. 45 "C9-C21 long-chain perfluorocarboxylic acids (LC-PFCAs) and their salts, and LC-PFCA-related substances" overlap the relevant substance, so please check the condition and threshold level of each category.
- (8) "Textile articles" in No.41 means refers to apparel, accessories, backpacks, handbags, carrying cases, straps, and other products made entirely or partially of textiles. Products and packaging materials that use textiles such as leather, non-woven fabrics, sponges, etc. are also included in "textile articles".
- (9) No.42 PFHxA, its salts and PFHxA-related substances cover the substances having a linear or branched perfluoropentyl group with the formula $C_5F_{11}-$ directly attached to another carbon atom as one of the structural elements or having a linear or branched perfluorohexyl group with the formula $C_6F_{13}-$. The following substances are excluded.
- (a) C_6F_{14} (Perfluorohexane/ Cas No.:355-42-0)
 - (b) $C_6F_{13}-C(=O)OH$ (Perfluoroheptane/ Cas No. : 375-85-9) , $C_6F_{13}-C(=O)O-X'$ or $C_6F_{13}-CF_2-X'$ (where $X' = \text{any group}$, including salts).
 - (c) Any substance having a perfluoroalkyl group $C_6F_{13}-$ directly attached to an oxygen atom at one of the non-terminal carbon atoms.

Annex 1. Applications exempted from the RoHS Directive Annex III

The following table lists the applications exempted from the RoHS Directive as of August 6, 2026. As a principle, these applications are exempted from Section II-1, "Prohibited Chemical Substances". In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption.

Please note that the Annex of RoHS Directive is subject to continual revision, make sure to check the European Commission website for the latest information.

https://environment.ec.europa.eu/topics/waste-and-recycling/rohs-directive/implementation-rohs-directive_en

No.	Exemption	Expiration date ^{(1), (2)}			
		Cat.1-7,10	Cat.8, 9 other than listed at right	Cat.8 (In-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):				
1(f)-I	For lamps designed to emit mainly light in the ultraviolet spectrum: 5 mg	Pending			
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):				
2(b)(4)-I	Lamps for other general lighting and special purposes (e.g. induction lamps) : 15mg	(Cat5) Pending			
2(b)(4)-II	Lamps emitting mainly light in the ultraviolet spectrum: 15 mg	(Cat5) February 24, 2027			
2(b)(4)-III	Emergency lamps: 15 mg	(Cat5) February 24, 2027			
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	Pending			
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 burne	February 24, 2027			
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	February 24, 2027			
4(c)-II	155 W < P ≤ 405 W : 25mg	February 24, 2027			
4(c)-III	405 W < P : 25mg	February 24, 2027			
4(e)	Mercury in metal halide lamps (MH)	February 24, 2027			
4(f)-I	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	Pending			
4(f)-II	Mercury in high pressure mercury vapour lamps used in projectors where an output ≥ 2000 lumen ANSI is required	Pending			
4(f)-III	Mercury in high pressure sodium vapour lamps used for horticulture lighting	Pending			
4(f)-IV	Mercury in lamps emitting light in the ultraviolet spectrum	Pending			
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	Pending	Expired on July 21, 2021	Expired on July 21, 2023	Expired on July 21, 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	June 30, 2019 (Shifted to 6(a)-I,II)	December 11, 2026	December 11, 2026	December 11, 2026
6(a)-I	Lead as an alloying element in steel for machining purposes containing up to 0,35 % lead by weight	Pending	Pending	Pending	Pending
6(a)-II	Lead as an alloying element in batch hot-dip galvanised steel components containing up to 0.2 % lead by weight	Pending	Pending	Pending	Pending

Applications exempted from the RoHS Directive Annex III (continued)

No.	Exemption	Expiration date ^{(1), (2)}			
		Cat.1-7,10	Cat.8, 9 other than listed at right	Cat.8 (In-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	June 30, 2019 (Shifted to 6(b)-I, II)	June 11, 2027	June 11, 2027	June 11, 2027
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	December 11, 2026			June 30, 2027
6(b)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4 % by weight	June 11, 2027			Pending
6(b)-III	Lead as an alloying element in aluminium casting alloys containing up to 0,3 % lead by weight provided it stems from lead-bearing aluminium scrap recycling	Pending	Pending	Pending	
6(c)	Copper alloy containing up to 4 % lead by weight	Pending	Pending	Pending	Pending
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) (except applications covered by point 24 of this Annex)	Pending	Pending	Pending	Pending
7(a)-I	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) for internal interconnections for attaching die, or other components along with a die in semiconductor assembly with steady state or transient/impulse currents of 0,1 A or greater or blocking voltages beyond 10 V, or die edge sizes larger than 0,3 mm × 0,3 mm (except applications covered by point 24 of this Annex)	Pending	Pending	Pending	Pending
7(a)-II	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) for integral (meaning internal and external) connections of die attach in electrical and electronic components, if all the following conditions are met: - the thermal conductivity of the cured/sintered die-attach material is > 35 W/(m × K), - the electrical conductivity of the cured/sintered die-attach material is > 4,7 MS/m, - solidus melting temperature is higher than 260 °C (except applications covered by point 24 of this Annex)	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
7(a)-III	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) in first level solder joints (internal or integral connections – meaning internal and external) for manufacturing components so that subsequent mounting of electronic components onto subassemblies (i.e. modules, sub-circuit boards, substrates, or point-to-point soldering) with a secondary solder does not reflow the first level solder. This sub-entry excludes die attach applications and hermetic sealings (except applications covered by point 24 of this Annex)	Pending	Pending	Pending	Pending

Applications exempted from the RoHS Directive Annex III (continued)

No.	Exemption	Expiration date ^{(1), (2)}			
		Cat.1-7,10	Cat.8, 9 other than listed at right	Cat.8 (In-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
7(a)-IV	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead) in second level solder joints for the attachment of components to printed circuit board or lead frames: (1) in solder balls for the attachment of ceramic ball-grid-array (BGA); (2) in high temperature plastic overmouldings (> 220 °C) (except applications covered by point 24 of this Annex)	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
7(a)-V	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) as a hermetic sealing material between: (1) a ceramic package or plug and a metal case; (2) component terminations and an internal sub-part (except applications covered by point 24 of this Annex)	Pending	Pending	Pending	Pending
7(a)-VI	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) for establishing electrical connections between lamp components in incandescent reflector lamps for infrared heating, high intensity discharge lamps, or oven lamps (except applications covered by point 24 of this Annex)	Pending	Pending	Pending	Pending
7(a)-VII	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead) for audio transducers where the peak operating temperature exceeds 200 °C (except applications covered by point 24 of this Annex)	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
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	Pending	Pending	Pending	Pending
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher (except applications covered by point 7(c)-I or 7(c)-IV)	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
7(c)-III	<u>For spare parts</u> for EEE placed on the market before January 1, 2013, lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Indefinite period			

Applications exempted from the RoHS Directive Annex III (continued)

No.	Exemption	Expiration date ^{(1), (2)}			
		Cat.1-7,10	Cat.8, 9 other than listed at right	Cat.8 (In-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
7(c)-V	Electrical and electronic components containing lead in a glass or glass matrix compound that fulfils any of the following functions: (1) for protection and electrical insulation in glass beads of high-voltage diodes and glass layers for wafers; (2) for hermetic sealing between ceramic, metal and/or glass parts; (3) for bonding purposes in a process parameter window for < 500 °C combined with a viscosity of 1 013,3 dPas ('glass-transition temperature'); (4) for use as a resistive material such as ink, with a resistivity range from 1 ohm/square to 100 megohm/square, excluding trimmer potentiometers; (5) for use in chemically modified glass surfaces for microchannel plates (MCPs), channel electron multipliers (CEMs) and resistive glass products (RGPs).	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
7(c)-VI	Electrical and electronic components containing lead in a ceramic that fulfils any of the following functions: (1) for use in piezoelectric lead zirconium titanate (PZT) ceramics; (2) for providing ceramics with a positive temperature coefficient (PTC). (except applications covered by points 7(c)-II, 7(c)-III and 7(c)-IV of this Annex as well as point 14 of Annex IV)	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
8(a)	<u>For spare parts</u> for EEE placed on the market before January 1, 2012, cadmium and its compounds in one shot pellet type thermal cut-offs	Indefinite period			
8(b)	Cadmium and its compounds in electrical contacts	February 29, 2020 (Shifted to 8(b)-I)	Pending	Pending	Pending
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 ≥ 200 Hz.	Pending			
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.	Pending			

Applications exempted from the RoHS Directive Annex III (continued)

No.	Exemption	Expiration date ^{(1), (2)}			
		Cat.1-7,10	Cat.8, 9 other than listed at right	Cat.8 (In-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
11(a)	For spare parts for EEE placed on the market before September 24, 2010, lead used in C-press compliant pin connector systems	Indefinite period			
11(b)	For spare parts for EEE placed on the market before January 1, 2013, lead used in other than C-press compliant pin connector systems	Indefinite period			
12	For spare parts for EEE placed on the market before September 24, 2010, lead as a coating material for the thermal conduction module C-ring	Indefinite period			
13(a)	Lead in white glasses used for optical applications	Pending	Pending	Pending	Pending
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards		Pending	Pending	Pending
13(b)-I	Cadmium and lead in filter glasses and glasses used for reflectance standards	Pending			
13(b)-II	Cadmium in striking optical filter glass types; excluding applications falling under point 39 of this Annex	Pending			
13(b)-III	Cadmium and lead in glazes used for reflectance standards	Pending			
14	For spare parts for EEE placed on the market before January 1, 2011, lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Indefinite period			
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	February 29, 2020 (Shifted to 15(a))	Pending	Pending	Pending
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.	Pending			
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)	Pending	Pending	Expired on July 21, 2023	Expired on July 21, 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 (BaSi ₂ O ₅ :Pb) when used in medical phototherapy equipment	(Cat.5) Pending	(Cat. 8) Pending	Expired on July 21, 2021	
23	For spare parts for EEE placed on the market before September 24, 2010, lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm and less	Indefinite period			
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Pending	Pending	Pending	Pending
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC	Pending	Expired on July 21, 2021	Expired on July 21, 2023	Expired on July 21, 2024
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	Pending	Pending	Expired on July 21, 2023	Pending

Applications exempted from the RoHS Directive Annex III (continued)

No.	Exemption	Expiration date ^{(1),(2)}			
		Cat.1-7,10	Cat.8, 9 other than listed at right	Cat.8 (In-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
34	Lead in cermet-based trimmer potentiometer elements	Pending	Pending	Pending	Pending
39(a)	Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm ² of display screen area)	Expired on November 21, 2025	Expired on November 21, 2025	Expired on November 21, 2025	Expired on November 21, 2025
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 LED chip surface) with a maximum amount per device of 1 mg	December 31, 2027	December 31, 2027	December 31, 2027	December 31, 2027
42 (Cat.11)	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.				
44 (Cat.11)	Lead in solder of sensors, actuators, and engine control units of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council, installed in equipment used at fixed positions while in operation which is designed for professionals, but also used by non-professional users.				
45 (Cat.11)	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				
46 (Cat.11)	Cadmium and lead in plastic profiles containing mixtures produced from polyvinyl chloride waste (hereinafter referred to as "recovered rigid PVC"), used for electrical and electronic windows and doors, where the concentration in the recovered rigid PVC material does not exceed 0,1 % cadmium by weight and 1,5 % lead by weight.				

Notes:

(1) Expiration date in Category 11 is "Pending" for No.42,44,45, and "May 8, 2028" for No.46.

(2) The expiration date of exemption has already filed, and the European Commission is under the discussion of exemption renewal or will discuss from now on, it is "Pending".

Annex 2. Applications exempted from the RoHS Directive Annex IV

The following table lists the applications (cat.8: medical device, cat.9: monitoring and control instruments) exempted from the RoHS Directive as of August 6, 2026. As a principle, these applications are exempted from Section II-1, "Prohibited Chemical Substances". In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption.

Please note that the Annex of RoHS Directive is subject to continual revision, make sure to check the European Commission website for the latest information.

https://environment.ec.europa.eu/topics/waste-and-recycling/rohs-directive/implementation-rohs-directive_en

No.	Exemption	Expiration date ⁽¹⁾		
		Cat.8, 9 other than listed at right	Cat.8 (in-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
Equipment utilising or detecting ionising radiation				
1	Lead, cadmium and mercury in detectors for ionising radiation	Pending	Expired on July 21, 2023	Pending
2	Lead bearings in X-ray tubes	Pending	Expired on July 21, 2023	Expired on July 21, 2024
3	Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate	Pending	Pending	Pending
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	Expired on July 21, 2021	Expired on July 21, 2023	Pending
5	Lead in shielding for ionising radiation	Pending	Expired on July 21, 2023	Pending
Sensors, detectors and electrodes				
1a	Lead and cadmium in ion selective electrodes including glass of pH electrodes	Pending	Pending	Pending
1b	Lead anodes in electrochemical oxygen sensors	Pending	Expired on July 21, 2023	Pending
1c	Lead, cadmium and mercury in infra-red light detectors	Pending	Pending	Pending
Others				
9	Cadmium in helium-cadmium lasers	Expired on July 21, 2021	Expired on July 21, 2023	Pending
10	Lead and cadmium in atomic absorption spectroscopy lamps	Expired on July 21, 2021	Expired on July 21, 2023	Pending
11	Lead in alloys as a superconductor and thermal conductor in MRI	Pending	Expired on July 21, 2023	Expired on July 21, 2024
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.	Pending	Expired on June 30, 2021	Pending
13	Lead in counterweights	Pending	Expired on July 21, 2023	Expired on July 21, 2024
14	Lead in single crystal piezoelectric materials for ultrasonic transducers	Pending	Expired on July 21, 2023	Expired on July 21, 2024
15	Lead in solders for bonding to ultrasonic transducers	Pending	Expired on July 21, 2023	Expired on July 21, 2024
17	Lead in solders in portable emergency defibrillators	Pending	Expired on July 21, 2023	Expired on July 21, 2024
18	Lead in solders of high performance infrared imaging modules to detect in the range 8-14µm	Pending	Expired on July 21, 2023	Expired on July 21, 2024
20	Cadmium in X-ray measurement filters	Pending	Expired on July 21, 2023	Expired on July 21, 2024
21	For spare parts placed on the EU market before January 1, 2020, Cadmium in spare parts for X-ray systems	Indefinite period	Indefinite period	Indefinite period

Applications exempted from the RoHS Directive Annex IV (continued)

No.	Exemption	Expiration date ⁽¹⁾		
		Cat.8, 9 other than listed at right	Cat.8 (in-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
26	Lead in — solders on printed circuit boards, — termination coatings of electrical and electronic components and coatings of printed circuit boards, — solders for connecting wires and cables, — solders connecting transducers and sensors, that are used durably at a temperature below – 20 °C under normal operating and storage conditions	Pending	Expired on June 30, 2021	Pending
27	Lead in — solders, — termination coatings of electrical and electronic components and printed circuit boards, — connections of electrical wires, shields and enclosed connectors, which are used in (a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or (b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy	Pending	June 30, 2027	June 30, 2027
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	Pending	Expired on June 30, 2021	Expired on June 30, 2021
30	Hexavalent chromium in spare parts for X-ray systems placed on the EU market before January 1, 2020	Indefinite period	Indefinite period	Indefinite period
31a	Lead, cadmium and hexavalent chromium in reused spare parts, recovered from medical devices placed on the market before July 22, 2014 and used in category 8 equipment placed on the market before July 22, 2021, provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer	Pending	Pending	Expired on July 21, 2024
33	Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators			
36	Lead used in other than C-press compliant pin connector systems in <u>spare parts</u> for industrial monitoring and control instruments placed on the market before January 1, 2021.			Indefinite period
37	Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies: (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: (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.	Expired on December 31, 2025	Expired on December 31, 2025	Expired on December 31, 2025

Applications exempted from the RoHS Directive Annex IV (continued)

No.	Exemption	Expiration date ⁽¹⁾		
		Cat.8, 9 other than listed at right	Cat.8 (in-vitro diagnostic medical device)	Cat.9 (Industrial monitoring and control instruments)
38	Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in <u>spare parts</u> for X-ray detectors of computed tomography and X-ray systems.	Indefinite period	Indefinite period	Indefinite period
39	Lead in micro-channel plates (MCPs) used in equipment where at least one of the following properties is present: (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; (b) a two-dimensional spatial resolution for detecting electrons or ions, where at least one of the following applies: (i) a response time shorter than 25 ns; (ii) a sample detection area larger than 149 mm ² ; (iii) a multiplication factor larger than 1.3 X10 ³ . (c) a response time shorter than 5 ns for detecting electrons or ions; (d) a sample detection area larger than 314 mm ² for detecting electrons or ions; (e) a multiplication factor larger than 4.0 X10 ⁷ .	Pending	Pending	Pending
40	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC in <u>spare parts</u> for industrial monitoring and control instruments placed on the market before 1 January 2021.			Indefinite period
42	Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (> 50 MHz) modes of operation.	Pending		
44	Cadmium in radiation tolerant video camera tubes designed for cameras with a centre resolution greater than 450 TV lines which are used in environments with ionising radiation exposure exceeding 100 Gy/hour and a total dose in excess of 100kGy.	March 31, 2027 (Category 9)		March 31, 2027
45	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	July 21, 2028 (Category 8)	July 21, 2028	
46	Bis(2-ethylhexyl) phthalate (DEHP) in plastic components in MRI detector coils.	Pending (Category 8)	Pending	
47	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.	July 21, 2028 (Category 8)	July 21, 2028	
48	Lead in bismuth strontium calcium copper oxide (BSCCO) superconductor cables and wires and lead in electrical connections to these wires	June 30, 2027	June 30, 2027	June 30, 2027
49	Mercury in melt pressure transducers for capillary rheometers at temperatures over 300 °C and pressures over 1000 bar	Pending (Category 9)		Pending

Notes:

- (1) The expiration date of exemption has already filed, and the European Commission is under the discussion of exemption renewal or will discuss from now on, it is "Pending".

II-2. Controlled Chemical Substances

Sections II-2-(1) and II-2-(2) show the chemical substances that must be appropriately managed when procured Items (finished products, parts and materials, packaging materials) contain them.

For these chemical substances, suppliers are required to maintain a system to provide information on the type and amount used, part of the product where used, etc., immediately upon request of Nikon. Note that the legal and regulatory, thresholds, and others are listed for the purpose of reference in Section II-2-(1).

II-2-(1) Controlled Chemical Substances

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
1	Candidate substances for authorization of REACH Regulation (SVHC) Refer to the SVHC list in II-2-(2).	Article 33 of REACH Regulation (EC) No 1907/2006	All	0.1% by weight (1,000 ppm) for SVHCs in a part or material ⁽⁴⁾	
2	Beryllium oxide (BeO)	EICTA, CECE and EERA Joint Position Guidance on implementing article 11 of Directive 2002/96(EC) concerning information for treatment facilities	All	0.1% by weight (1,000 ppm) for BeO in a part	Ceramics
Relevant substance					
Substance name					CAS No.
Beryllium oxide (BeO)					1304-56-9
3	Brominated flame retardants (other than PBBs, PBDEs, HBCDD or TBPH)	JS709	Plastic materials except laminated printed board ⁽¹⁾	0.1% total bromine content by weight (1,000 ppm) in plastic material	Flame retardant for housing, connector, package molding sealing
		•IPC-4101 •IEC61249-2-21	Laminated printed board ⁽¹⁾	0.09% total bromine content by weight (900 ppm) in a laminated board	Flame retardant
Representative examples of relevant substance					
Substance name					CAS No.
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 antimony compounds]					—
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]					—

Brominated flame retardants (other than PBBs, PBDEs, HBCDD or TBPH) (continued)	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	94334-64-2
	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
	2,4,6-Tribromo-phenyl-allyl-ether	3278-89-5
	Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
	Bis(methyl)tetrabromo-phthalate	55481-60-2
	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
	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
	Octabromo-1,1,3-trimethyl-1-phenylindane (FR-1808)	155613-93-7

Controlled Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use										
4	Chlorinated flame retardants	JS709	Plastic materials except laminated printed board ⁽¹⁾	0.1% total chlorine content by weight (1,000 ppm) in plastic material	Flame retardant for housing, connector, package molding sealing										
		•IPC-4101 •IEC61249-2-21	Laminated printed board ⁽¹⁾	0.09% total chlorine content by weight (900 ppm) in a laminated board	Flame retardant										
		Representative examples of relevant substance													
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Tetrakis(2-chloroethyl) dichloroisopentyldiphosphate</td><td>38051-10-4</td></tr><tr><td>Tris(1-chloro-2-propyl) phosphate</td><td>13674-84-5</td></tr><tr><td>Tris(2,3-dichloro-1-propyl) phosphate</td><td>66108-37-0</td></tr></table>				Substance name	CAS No.	Tetrakis(2-chloroethyl) dichloroisopentyldiphosphate	38051-10-4	Tris(1-chloro-2-propyl) phosphate	13674-84-5	Tris(2,3-dichloro-1-propyl) phosphate	66108-37-0		
		Substance name	CAS No.												
Tetrakis(2-chloroethyl) dichloroisopentyldiphosphate	38051-10-4														
Tris(1-chloro-2-propyl) phosphate	13674-84-5														
Tris(2,3-dichloro-1-propyl) phosphate	66108-37-0														
5	Nickel ⁽³⁾ /Nickel compounds	ANNEX XVII Entry 27 of REACH Regulation (EC) No 1907/2006	All, where prolonged skin contact is expected ⁽³⁾	Intentionally added ⁽²⁾	Stainless steel, plating (Example application for prolonged skin contact: headphone)										
		Representative examples of relevant substance													
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Nickel</td><td>7440-02-0</td></tr><tr><td>Nickel(II) sulfate hexahydrate</td><td>10101-97-0</td></tr><tr><td>Nickel oxide</td><td>11099-02-8</td></tr><tr><td>Nickel dihydroxide</td><td>12054-48-7</td></tr></table>				Substance name	CAS No.	Nickel	7440-02-0	Nickel(II) sulfate hexahydrate	10101-97-0	Nickel oxide	11099-02-8	Nickel dihydroxide	12054-48-7
		Substance name	CAS No.												
		Nickel	7440-02-0												
		Nickel(II) sulfate hexahydrate	10101-97-0												
Nickel oxide	11099-02-8														
Nickel dihydroxide	12054-48-7														
6	Perchlorates	US/ California Perchlorate Contamination Prevention Act of 2003	All	0.0000006% by weight (0.006 ppm) for Perchlorates of the product	Coin cell batteries										
		Representative examples of relevant substance													
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Lithium perchlorate</td><td>7791-03-9</td></tr></table>				Substance name	CAS No.	Lithium perchlorate	7791-03-9						
Substance name	CAS No.														
Lithium perchlorate	7791-03-9														
7	Diisodecyl phthalate (DIDP)	•ANNEX XVII Entry 52 of REACH Regulation (EC) No 1907/2006 •Proposition 65 •U.S. Consumer Product Safety Improvement Act (CPSIA)	Plastic material	0.1% by weight (1,000 ppm) for DIDP in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant										
		Relevant substance													
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Diisodecyl phthalate (DIDP)</td><td>26761-40-0 68515-49-1</td></tr></table>				Substance name	CAS No.	Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1						
Substance name	CAS No.														
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1														
8	Diisononyl phthalate (DINP)	•ANNEX XVII Entry 52 of REACH Regulation (EC) No 1907/2006 •Proposition 65 •U.S. Consumer Product Safety Improvement Act (CPSIA)	Plastic material	0.1% by weight (1,000 ppm) for DINP in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant										
		Relevant substance													
		<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Diisononyl phthalate (DINP)</td><td>28553-12-0 68515-48-0</td></tr></table>				Substance name	CAS No.	Diisononyl phthalate (DINP)	28553-12-0 68515-48-0						
Substance name	CAS No.														
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0														

Controlled Chemical Substances (continued)

No.	Substance/Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
9	Di-n-octyl phthalate (DNOP)	• ANNEX XVII Entry 52 of REACH Regulation (EC) No 1907/2006 • U.S. Consumer Product Safety Improvement Act (CPSIA)	Plastic material	0.1% by weight (1,000 ppm) for DNOP in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant
		Relevant substance			
		Substance name		CAS No.	
		Di-n-octyl phthalate (DNOP)		117-84-0	
10	Polyvinyl chloride (PVC) / PVC compounds	JS709	Plastic materials except applications specified as prohibited chemical substances	0.1% total chlorine content by weight (1,000 ppm) in plastic material	Insulator, cable coating, film, tube, tamperproof labels, clam-shell packs
		Representative examples of relevant substance			
		Substance name		CAS No.	
		Polyvinyl chloride (PVC)		9002-86-2	
11	Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals	US TSCA Significant New Use Rule (SNUR)	Surface coating of articles	Intentionally added	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist
		Relevant substance			
		Substance name		CAS No.	
		Perfluorooctyl iodide (Octane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-8-iodo-)		507-63-1	
		Tetrahydroperfluoro-1-decanol (1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-)		678-39-7	
		Perfluoro-1-dodecanol (1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro-)		865-86-1	
		Perfluorodecyl iodide (Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo-)		2043-53-0	
		1,1,2,2-Tetrahydroperfluorodecyl iodide (Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafuoro-12-iodo-)		2043-54-1	
		Perfluorodecylethyl acrylate (2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester)		17741-60-5	
		1,1,2,2-Tetrahydroperfluorodecyl acrylate (2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester)		27905-45-9	
		1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafuoro -14-iodotetradecane (Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafuoro-14-iodo-)		30046-31-2	
		1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafuoro -14-iodotetradecane (Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafuoro-14-iodo-)		30046-31-2	

Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals (continued)	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafuoro -14-iodotetradecane (Tetradecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-pentacosafuoro-14-iodo-)	30046–31–2
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Pentacosafuorotetradecan-1-ol (1-Tetradecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9, 10,10,11,11,12,12,13,13,14,14, 14-pentacosafuoro-)	39239–77–5
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16-Nonacosafuorohexadecan-1-ol (1- Hexadecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafuoro-)	60699–51–6
	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-Nonacosafuoro-16-iodohexadecane (Hexadecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-nonacosafuoro-16-iodo-)	65510–55–6
	Sodium;2-methylpropane-1-sulfonate (1-Propanesulfonic acid, 2-methyl-, 2-[[1-oxo-3-[(γ-ω-perfluoro- C4–16-alkyl)thio]propyl]amino] derivs.)	68187–47–3
	1,1,2,2-Tetrahydroperfluoroalkyl (C8–C14) alcohol (Alcohols, C8–14, γ-ω- perfluoro)	68391–08–2
	Thiols, C8–20, γ-ω-perfluoro, telomers with acrylamide	70969–47–0
	Silicic acid (H4SiO4), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol (Silicic acid (H4SiO4), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol)	125476–71–3
	Thiols, C4–20, γ-ω-perfluoro, telomers with acrylamide and acrylic acid, sodium salts	1078712–88–5
	1-Propanaminium, 3-amino-N- (carboxymethyl)-N,N-dimethyl-, N-(2-((γ-ω-perfluoro-C4–20- alkyl)thio)acetyl) derivs., inner salts	1078715–61–3
	Polyfluoroalkyl betaine (generic) (Polyfluoroalkyl betaine (PROVISIONAL).)	EPA accession number ⁽⁵⁾ 71217
	Modified fluoroalkyl urethane (generic) (Modified fluoroalkyl urethane (PROVISIONAL))	EPA accession number ⁽⁵⁾ 89419
	Perfluorinated polyamine (generic) (Perfluorinated polyamine (PROVISIONAL))	EPA accession number ⁽⁵⁾ 274147

Controlled Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
12	C.I.Pigment Violet 29 (PV29)	US TSCA Risk Evaluation Substances	All	Intentionally added	Paint, pigment
		Relevant substance			
		Substance name			CAS No.
		C.I. Pigment Violet 29 (PV29)			81-33-4
13	Tetrabromo Bisphenol A (TBBPA)	Additional candidate substances to Annex II of the EU RoHS Directive	All	Intentionally added	Flame retardant
		Relevant substance			
		Substance name			CAS No.
		Tetrabromobisphenol A (TBBPA)			79-94-7
14	Per- and polyfluoroalkyl substances (PFAS)	• US TSCA • U.S. Maine LD1503	All	Intentionally added	Water repellent, extinguishing agents, surface coating, lubricant
15	4,4'-Isopropylidenediphenol (Bisphenol A, BPA) and bisphenols of similar concern	Reporting substance for Canada Medical Devices Regulations SOR/98-282	All	Intentionally added	Resin materials, PVC additives
		Relevant substance			
		Substance name			CAS No.
		4,4'-Isopropylidenediphenol (Bisphenol A)			80-05-7
		4,4'-(1-methylpropylidene)bisphenol (Bisphenol B)			77-40-7
		Bis(4-hydroxyphenyl) Sulfone (Bisphenol S)			80-09-1
		4,4'-Methylenediphenol (Bisphenol F)			620-92-8
16	Diisooctyl phthalate (DIOP)	Reporting substance for Frenchi AGECE Law	All	0.1% by weight (1,000 ppm) for DIOP in a part or material	Plasticizer for vinyl and cellulose resin
		Relevant substance			
		Substance name			CAS No.
		Diisooctyl phthalate (DIOP)			27554-26-3
17	Bis(2-ethylhexyl)tetrabromo-phthalate (TBPH)	• Candidate substances for listing in Annex A (elimination) to the POPs Convention	All	Intentionally added	Flame retardant
		Relevant substance			
		Substance name			CAS No.
		Bis(2-ethylhexyl)tetrabromo-phthalate (TBPH)			26040-51-7

Controlled Chemical Substances (continued)

Controlled Chemical Substances (continued)																	
No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use												
18	Radioactive substances	• 2013/59/Euratom • Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors • Act on Prevention of Radiation Hazards due to Radioisotopes	All	Intentionally added	Optical properties (thorium), measuring device, gauges, detector												
Representative examples of relevant substance																	
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Uranium-238</td><td>7440-61-1</td></tr><tr><td>Radon</td><td>10043-92-2</td></tr><tr><td>Americium-241</td><td>14596-10-2</td></tr><tr><td>Thorium-232</td><td>7440-29-1</td></tr><tr><td>Cesium-137</td><td>10045-97-3</td></tr><tr><td>Strontium-90</td><td>10098-97-2</td></tr></table>				Substance name	CAS No.	Uranium-238	7440-61-1	Radon	10043-92-2	Americium-241	14596-10-2	Thorium-232	7440-29-1	Cesium-137	10045-97-3	Strontium-90	10098-97-2
Substance name	CAS No.																
Uranium-238	7440-61-1																
Radon	10043-92-2																
Americium-241	14596-10-2																
Thorium-232	7440-29-1																
Cesium-137	10045-97-3																
Strontium-90	10098-97-2																
19	Decabromodiphenyl ethane (DBDPE)	• Australia Industrial Chemicals Environmental Management Standard • The Canada prohibition of Certain Toxic Substances Regulations • Candidate substances for listing in Annex A (elimination) to the POPs Convention	All	• Intentionally Added • 0.001% by weight (10ppm) for DBDPE in a substance or a mixture • 0.001% by weight (10ppm) for DBDPE in an article	Flame retardant												
Representative examples of relevant substance																	
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Decabromodiphenylethane (DBDPE)</td><td>84852-53-9</td></tr><tr><td>Benzene, 1,1'-(1,2-ethanediyl)bis-, brominated</td><td>1092834-40-6</td></tr></table>				Substance name	CAS No.	Decabromodiphenylethane (DBDPE)	84852-53-9	Benzene, 1,1'-(1,2-ethanediyl)bis-, brominated	1092834-40-6								
Substance name	CAS No.																
Decabromodiphenylethane (DBDPE)	84852-53-9																
Benzene, 1,1'-(1,2-ethanediyl)bis-, brominated	1092834-40-6																

Notes:

- (1) A laminated printed wiring board refers to the layered board materials excluding surface finishing and components
- (2) Regulatory thresholds for substances in these applications are based on emission or exposure limits rather than on the concentration in the product. The regulatory limits are:
 - Nickel released from the parts coming into direct and prolonged contact with the skin : 0,5 µg/cm²/week(Based on DIN EN 1811)

Because emission and exposure levels cannot be derived from actual concentrations, a threshold level of “intentionally added” is indicated for reporting. Suppliers may choose to report a default concentration of 0.1% by weight in the product for these substances, in lieu of determining the exact concentrations in their products, to indicate that the substance is known to be present in their product, as the actual concentration in the product is not informative for regulatory compliance assessment.
- (3) Nickel must be reported in certain regulated applications where it is likely to result in prolonged skin exposure (e.g., an outer enclosure for a portable electronic product designed to be carried). Use of nickel or nickel contained in components and parts designed to be located inside the outer enclosure of a product need not be reported.
- (4) According to the judgement of European Court of Justice in September 2015, in principle the denominator of the threshold (control value) would be a part or material constituting the product.
- (5) CAS number of these substances is not disclosed due to CBI (confidential business information).

II-2-(2) SVHCs of REACH Regulation

SVHCs of REACH Regulation are subject to continual addition, and suppliers should be responsible for always ensuring that they refer to the latest version. The following table lists the SVHCs as of August 1, 2026. Refer to the latest version on the ECHA website below.

<https://echa.europa.eu/candidate-list-table>

Besides, some of SVHCs are defined to be the “prohibited chemical substances”. Refer to the list of Section II-1. “Prohibited Chemical Substances” for the substances marked as “PCS” in the “Remarks” column of the following list.

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
1	Anthracene	204-371-1	120-12-7	Raw material of carbon black, stabilizer	
2	4,4'-Diaminodiphenylmethane (MDA)	202-974-4	101-77-9	Hardening agent	PCS No.18
3	Dibutyl phthalate	201-557-4	84-74-2	Plasticizer, softening agent	PCS No.26
4	Cobalt dichloride	231-589-4	7646-79-9	Drying agent, pigment, coloring agent	
5	Diarsenic pentaoxide	215-116-9	1303-28-2	addition agent for glass, wood preservative, dye	(7) PCS No.28
6	Diarsenic trioxide	215-481-4	1327-53-3	Decolorant for glass and enamel, wood preservative, material for catalyzer	(7) PCS No.28
7	Sodium dichromate	234-190-3 —	10588-01-9 (anhydrate) 7789-12-0 (dihydrate)	Pigment, dye	PCS No.2
8	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	81-15-2	Perfume	
9	Bis (2-ethylhexyl) phthalate (DEHP)	204-211-0	117-81-7	Plasticizer	PCS No.26
10	Hexabromocyclododecane (HBCD) and all major diastereoisomers identified: α-HBCD β-HBCD γ-HBCD	247-148-4	25637-99-4	Flame retarder	PCS No.23
		221-695-9	3194-55-6		
		—	134237-50-6		
		—	134237-51-7		
		—	134237-52-8		
11	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCPs)	287-476-5	85535-84-8	Plasticizer, flame retarder	(1) PCS No.10
12	Bis(tributyltin)oxide (TBTO)	200-268-0	56-35-9	Wood preservative, paint, pigment, antistatic agent, foaming agent	PCS No.12
13	Lead hydrogen arsenate	232-064-2	7784-40-9	Wood preservative, addition agent for glass and electronic component	(7) PCS No.3, 28
14	Benzyl butyl phthalate (BBP)	201-622-7	85-68-7	Plasticizer, ink, adhesive	PCS No.26
15	Triethyl arsenate	427-700-2	15606-95-8	Wood preservative, addition agent for glass and electronic component	(7) PCS No.28

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
16	Anthracene oil	292-602-7	90640-80-5	Component in tar oil (e.g. for production of carbon black, heating oil, bunker fuel), impregnation agent, component in tar paint for special application	
17	Anthracene oil, anthracene paste, distrn. lights	295-278-5	91995-17-4		
18	Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2		
19	Anthracene oil, anthracene-low	292-604-8	90640-82-7		
20	Anthracene oil, anthracene paste	292-603-2	90640-81-6		
21	Pitch, coal tar, high temp.	266-028-2	65996-93-2	Binding agent, heavy duty corrosion protection agent, medicinal preparation	
22	2,4-Dinitrotoluene	204-450-0	121-14-2	Intermediate in the production of toluene diisocyanate	
23	Diisobutyl phthalate	201-553-2	84-69-5	Plasticiser, dispersion	PCS No.26
24	Lead chromate	231-846-0	7758-97-6	Pigment, dye, paint	PCS No.2, 3
25	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	235-759-9	12656-85-8		
26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	215-693-7	1344-37-2		
27	Tris(2-chloroethyl) phosphate (TCEP)	204-118-5	115-96-8	Acrylic resin, adhesive	
28	Acrylamide	201-173-7	79-06-1	Raw material of the polyacrylamide composition	
29	Trichloroethylene	201-167-4	79-01-6	Cleaning agent, degreasing agent	
30	Boric acid	233-139-2 234-343-4	10043-35-3 11113-50-1	Adhesive, flame retardant, paint, disinfectant, addition agent for glass and ceramics	(7)
31	Disodium tetraborate, anhydrous	215-540-4	1303-96-4 1330-43-4 12179-04-3		
32	Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1		
33	Sodium chromate	231-889-5	7775-11-3	Wood preservative, dye	PCS No.2
34	Potassium chromate	232-140-5	7789-00-6	Colouring agent, pigment, ink	PCS No.2
35	Ammonium dichromate	232-143-1	7789-09-5	Oxidising agent,	PCS No.2
36	Potassium dichromate	231-906-6	7778-50-9	Metal treatment	PCS No.2
37	Cobalt(II) sulphate	233-334-2	10124-43-3	Catalyst, pigment, paint, surface treatment	
38	Cobalt(II) dinitrate	233-402-1	10141-05-6		
39	Cobalt(II) carbonate	208-169-4	513-79-1		
40	Cobalt(II) diacetate	200-755-8	71-48-7		
41	2-Methoxyethanol	203-713-7	109-86-4	Solvent, brake fluid	
42	2-Ethoxyethanol	203-804-1	110-80-5		
43	Chromium trioxide	215-607-8	1333-82-0	Chrome plating, pigment, paint, oxidising agent	PCS No.2
44	Acids generated from chromium trioxide and their oligomers Group containing: • Chromic acid • Dichromic acid • Oligomers of chromic acid and dichromic acid	231-801-5 236-881-5 not yet assigned	7738-94-5 13530-68-2 not yet assigned		
45	2-ethoxyethyl acetate	203-839-2	111-15-9	Paint solvent	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
46	Strontium chromate	232-142-6	7789-06-2	anti-rust	PCS No.2
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	271-084-6	68515-42-4	Plasticiser, foam, adhesive, paint	
48	Hydrazine	206-114-9	302-01-2 7803-57-8	Reducing agent, rocket fuel	
49	1-methyl-2-pyrrolidone	212-828-1	872-50-4	Solvent, detergent	PCS No.30
50	1,2,3-trichloropropane	202-486-1	96-18-4	Solvent, paint	
51	1,2-Benzenedicarboxylic acid di-C6-8-branched alkyl esters, C7-rich	276-158-1	71888-89-6	Plasticiser, sealant, paint, ink	PCS No.30
52	Lead styphnate	239-290-0	15245-44-0	Initiator or booster in detonators for both civilian and military uses	PCS No.3
53	Lead azide Lead diazide	236-542-1	13424-46-9		
54	Lead dipicrate	229-335-2	6477-64-1		
55	Phenolphthalein	201-004-7	77-09-8	PH indicator	
56	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	202-918-9	101-14-4	Curing agent in resins and in the production of polymer article	PCS No.18
57	N,N-dimethylacetamide (DMAC)	204-826-4	127-19-5	Solvent, thin film, ink remover	
58	Trilead diarsenate	222-979-5	3687-31-8	Trioxide arsenic production intermediate	PCS No.3, 28
59	Calcium arsenate	231-904-5	7778-44-1	Trioxide arsenic production	PCS No.28
60	Arsenic acid	231-901-9	7778-39-4	Glass and ceramic additive, copper foil of the printed circuit board	(7) PCS No.28
61	Bis(2-methoxyethyl) ether	203-924-4	111-96-6	Solvent for battery electrolytes, adhesive	
62	1,2-Dichloroethane	203-458-1	107-06-2	Solvent for the chemical and pharmaceutical industry	
63	4-(1,1,3,3-tetramethylbutyl) phenol, (4-tert-Octylphenol)	205-426-2	140-66-9	Adhesive, coating, ink, rubber article	
64	2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	Dye	PCS No.18
65	Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8	Polymeric material, paint, plasticiser	PCS No.30
66	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	500-036-1	25214-70-4	Hardener for epoxy resin	
67	Zirconia Aluminosilicate, Refractory Ceramic Fibres (Zr-RCF)	—	—	Heat shield, auto parts, aerospace products	(2)
68	Aluminosilicate Refractory Ceramic Fibres (RCF)	—	—		(3)
69	Pentazinc chromate octahydroxide	256-418-0	49663-84-5	Coating for auto parts / aerospace products	PCS No.2
70	Potassium hydroxyoctaoxodizincatedi-chromate	234-329-8	11103-86-9		
71	Dichromium tris(chromate)	246-356-2	24613-89-6	Mixtures for metal surface treatment in the steel and aluminium	PCS No.2
72	1,2-bis(2-methoxyethoxy) ethane (Triglyme)	203-977-3	112-49-2	Solvent, refrigerant, absorbent	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
73	1,2-dimethoxyethane; Ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4	Solvent, electrolyte of lithium battery, refrigerant	
74	Diboron trioxide	215-125-8	1303-86-2	Glass, ceramic, flame retardant, catalyst, adhesive	(7)
75	Formamide	200-842-0	75-12-7	Solvent, reagent, plasticizer	
76	Lead (II) bis(methanesulfonate)	401-750-5	17570-76-2	Plating process for the printed circuit board	PCS No.3
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5- triazine-2,4,6(1H,3H,5H)-trione)	219-514-3	2451-62-9	Hardener for resin and paint, Electrical insulation material,	
78	β-TGIC (1,3,5-tris[(2S and 2R)- 2,3- epoxypropyl]-1,3,5-triazine-2,4,6- (1H,3H,5H)-trione)	423-400-0	59653-74-6	adhesive, plastic stabilizer	
79	4,4'-bis(dimethylamino)benzophenone (Michler's Ketone)	202-027-5	90-94-8	Photoresponsive additive for dye and pigment	
80	N, N, N', N'- tetramethyl -4, 4' - methylenedianiline (Michler's Base)	202-959-2	101-61-1	Intermediate in production such as the dye	
81	[4-[[4-anilino-1-naphthyl][4- (dimethylamino)phenyl]methylene]cyclo hexa-2,5-dien-1- ylidene]dimethylammonium chloride (C.I. Basic Blue 26)	219-943-6	2580-56-5	Dye, paint, ink	(4)
82	[4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1- ylidene] dimethylammonium chloride (C.I. Basic Violet 3)	208-953-6	548-62-9	Dye, paint, ink	(4) PCS No.30
83	4,4'-bis(dimethylamino)-4"- (methylamino)trityl alcohol	209-218-2	561-41-1	Dye, paint, ink	(4)
84	α, α-Bis[4-(dimethylamino)phenyl]- 4(phenylamino)naphthalene-1- methanol (C.I. Solvent Blue 4)	229-851-8	6786-83-0	Ink	(4)
85	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	214-604-9	1163-19-5	Flame retardant	PCS No.6
86	Pentacosafuorotridecanoic acid	276-745-2	72629-94-8	Fluorochemical surfactant	PCS No.35
87	Tricosafuorododecanoic acid	206-203-2	307-55-1		
88	Henicosafuoroundecanoic acid	218-165-4	2058-94-8		
89	Heptacosafuorotetradecanoic acid	206-803-4	376-06-7		
90	Diazene-1,2-dicarboxamide (C, C'-azodi(formamide))	204-650-8	123-77-3	Foaming agent for rubber and synthetic resin	
91	Cyclohexane-1,2-dicarboxylic anhydride	201-604-9	85-42-7	Plasticizer, resin reforming agent	
	Cis-cyclohexane-1,2-dicarboxylic anhydride	236-086-3	13149-00-3		
	Trans-cyclohexane-1,2-dicarboxylic anhydride	238-009-9	14166-21-3		
92	Hexahydromethylphthalic anhydride	247-094-1	25550-51-0	Epoxy resin curing agent, paint	
	Hexahydro-4-methylphthalic anhydride	243-072-0	19438-60-9		
	Hexahydro-1-methylphthalic anhydride	256-356-4	48122-14-1		
	Hexahydro-3-methylphthalic anhydride	260-566-1	57110-29-9		
93	4-Nonylphenol, branched and linear	—	—	Surfactant, ink, paint	
94	4-(1,1,3,3-tetramethylbutyl) phenol, ethoxylated	—	—	Surfactant	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
95	Methoxyacetic acid	210-894-6	625-45-6	Synthetic intermediate	
96	N, N-dimethylformamide	200-679-5	68-12-2	Synthetic leather, solvent	PCS No.30
97	Dibutyltin dichloride (DBTC)	211-670-0	683-18-1	Intermediate of vinyl chloride stabilizer, catalyst	PCS No.13
98	Lead monoxide (Lead oxide)	215-267-0	1317-36-8	Pigment, vinyl chloride stabilizer, synthetic rubber accelerator Glass raw material	(7) PCS No.3
99	Orange lead (Lead tetroxide)	215-235-6	1314-41-6		
100	Lead bis(tetrafluoroborate)	237-486-0	13814-96-5	Plating agent	PCS No.3
101	Trilead bis(carbonate)dihydroxide	215-290-6	1319-46-6	Electroceramic materials	(7) PCS No.3
102	Lead titanium trioxide	235-038-9	12060-00-3		
103	Lead titanium zirconium oxide	235-727-4	12626-81-2		
104	Silicic acid, lead salt	234-363-3	11120-22-2	Material of glass, pigment, paint, drying agent	(7) PCS No.3
105	Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped	272-271-5	68784-75-8	Fluorescent material of lamp	(5) PCS No.3
106	1-bromopropane (n-propyl bromide)	203-445-0	106-94-5	Medicine, agricultural chemicals, washing solvent	PCS No.15
107	Methyloxirane (Propylene oxide)	200-879-2	75-56-9	Resin material, solvent	
108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	284-032-2	84777-06-0	Plasticizer	
109	Diisopentylphthalate (DIPP)	210-088-4	605-50-5	Plasticizer	PCS No.30
110	N-pentyl-isopentylphthalate	—	776297-69-9		
111	1,2-diethoxyethane	211-076-1	629-14-1	Ink, solvent for paint	
112	Acetic acid, lead salt, basic	257-175-3	51404-69-4	Synthetic intermediate, rust preventive pigment	PCS No.3
113	Lead oxide sulfate	234-853-7	12036-76-9	Electrode material for battery	PCS No.3
114	[Phthalato (2-)] dioxotrilead	273-688-5	69011-06-9	Stabilizer for PVC	PCS No.3
115	Dioxobis(stearato)trilead	235-702-8	12578-12-0		
116	Fatty acids, C16-18, lead salts	292-966-7	91031-62-8		
117	Lead cyanamate	244-073-9	20837-86-9	Rust preventive pigment	PCS No.3
118	Lead dinitrate	233-245-9	10099-74-8	Synthetic material, material of optical glass	(7) PCS No.3
119	Pentalead tetraoxide sulphate	235-067-7	12065-90-6	Electrode material for battery, stabilizer for PVC	PCS No.3
120	Pyrochlore, antimony lead yellow	232-382-1	8012-00-8	Pigment	PCS No.3
121	Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7	Stabilizer for PVC	PCS No.3
122	Tetraethyllead	201-075-4	78-00-2	Gasoline additive	PCS No.3
123	Tetralead trioxide sulphate	235-380-9	12202-17-4	Stabilizer for PVC	PCS No.3

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
124	Trilead dioxide phosphonate	235-252-2	12141-20-7	Stabilizer for PVC	PCS No.3
125	Furan	203-727-3	110-00-9	Raw material of synthetic resin, solvent, cleaning agent	
126	Diethyl sulphate	200-589-6	64-67-5	Ethylating agent, lenitive dehydrating agent	
127	Dimethyl sulphate	201-058-1	77-78-1	Methylation agent, medicine	
128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2		
129	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	201-861-7	88-85-7	Polymer raw material	
130	4,4'-methylenedi-o-toluidine	212-658-8	838-88-0	Curing agent for resin, synthetic resin intermediate	PCS No.18
131	4,4'-oxydianiline and its salts	202-977-0	101-80-4	Raw material of polyimide resin	PCS No.18
132	4-aminoazobenzene	200-453-6	60-09-3	Dye	PCS No.18
133	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	202-453-1	95-80-7		
134	6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8		
135	Biphenyl-4-ylamine	202-177-1	92-67-1		
136	o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	202-591-2	97-56-3		
137	o-toluidine	202-429-0	95-53-4		
138	N-methylacetamide	201-182-6	79-16-3	solvent	
139	Cadmium	231-152-8	7440-43-9	Pigment, battery, alloy, plating	PCS No.1
140	Cadmium oxide	215-146-2	1306-19-0	Pigment, catalyst, battery	PCS No.1
141	Ammonium pentadecafluorooctanoate (APFO)	223-320-4	3825-26-1	Surface treatment agent, surfactant, water repellent	
142	Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1	Water repellent, Surface treatment agent,	PCS No.24
143	Dipentyl phthalate (DPP)	205-017-9	131-18-0	Plasticizer	PCS No.30
144	4-Nonylphenol, branched and linear, ethoxylated	—	—	Surfactant	(6)
145	Cadmium sulphide	215-147-8	1306-23-6	Pigment	PCS No.1
146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)] bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	209-358-4	573-58-0	Dye	PCS No.18
147	Disodium 4-amino-3- [[4'-[(2,4-diaminophenyl)azo] [1,1'-biphenyl]-4-yl] azo] -5-hydroxy-6-(phenylazo) naphthalene-2,7-disulphonate (C.I. Direct Black 38)	217-710-3	1937-37-7	Dye	PCS No.18
148	Dihexyl phthalate (DHP)	201-559-5	84-75-3	Plasticizer	PCS No.30
149	Imidazolidine-2-thione(2-imidazoline-2-thiol)	202-506-9	96-45-7	Vulcanisation accelerator	
150	Lead di(acetate)	206-104-4	301-04-2	Waterproofing agent, reagent	PCS No.3
151	Trixylyl phosphate	246-677-8	25155-23-1	Plasticizer	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
152	Cadmium chloride	233-296-7	10108-64-2	Plasticizer	PCS No.1
153	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (DIHP)	271-093-5	68515-50-4	Plating, catalyst	
154	Sodium peroxometaborate	231-556-4	7632-04-4		
155	Sodium perborate; perboric acid, sodium salt	239-172-9; 234-390-0	—	Antiseptic, bleach, disinfectant	
156	Cadmium fluoride	232-222-0	7790-79-6	Manufacture of alloy	PCS No.1
157	Cadmium sulphate	233-331-6	10124-36-4; 31119-53-6	Reagent, battery	PCS No.1
158	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7	Ultraviolet absorber	PCS No.22
159	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1		PCS No.41
160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate	239-622-4	15571-58-1	Stabilizer for PVC	PCS No.14
161	reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	—	—		
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	271-094-0 272-013-1	68515-51-5 68648-93-1	Plasticizer, lubricating oil	
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	—	—	Perfume	
164	Nitrobenzene	202-716-0	98-95-3	Raw material of aniline, solvent	
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl) phenol (UV-327)	223-383-8	3864-99-1	UV-protection agent	
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	253-037-1	36437-37-3	UV-protection agent	
167	1,3-propanesultone	214-317-9	1120-71-4	Electrolyte fluid of lithium ion battery	
168	Perfluorononane-1-oic-acid and its sodium and ammonium salts	206-801-3	375-95-1 21049-39-8 4149-60-4	Processing aid for fluoropolymer manufacture, lubricating oil additive, cleaning agent	PCS No.35
169	Benzo[def]chrysene (Benzo[a]pyrene)	200-028-5	50-32-8	Adhesive, paint, waterproofing agent	PCS No.25
170	4,4'-isopropylidenediphenol (bisphenol A; BPA)	201-245-8	80-05-7	Raw material of polycarbonate and epoxy resin, plasticizer, antioxidant	
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	206-400-3 - 221-470-5	335-76-2 3830-45-3 3108-42-7	Lubricant, wetting agent, plasticizer, preservative	PCS No.35

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
172	p-(1,1-dimethylpropyl) phenol	201-280-9	80-46-6	Dye intermediate, Rubber chemical, surfactant, photographic film	
173	4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	—	—	Lubricant additive	
174	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	—	—	Carpet, leather, Textile, paper, plating, electronic parts	PCS No.36
175	Chrysene	205-923-4	218-01-9 1719-03-5	Component of coal tar, paint, fuel	PCS No.25
176	Benz[a]anthracene	200-280-6	56-55-3 1718-53-2		
177	Cadmium nitrate	233-710-6	10325-94-7 10022-68-1 (tetrahydrate)	Colorant for ceramics, battery, synthetic intermediate, emulsion for photograph, adhesive	PCS No.1
178	Cadmium hydroxide	244-168-5	21041-95-2	Material of battery	PCS No.1
179	Cadmium carbonate	208-168-9	513-78-0	Stabilizer for PVC, additive of glass	PCS No.1
180	Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	—	—	Adhesive, sealant flame retardant	PCS No.40
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with $\geq$ 0.1% w/w 4-heptylphenol, branched and linear]	—	—	Lubricant additive, mold release agent, grease	
182	Octamethylcyclotetrasiloxane (D4)	209-136-7	556-67-2	Cleaning agent, wax, cosmetics, personal care product	
183	Decamethylcyclopentasiloxane (D5)	208-764-9	541-02-6	Cleaning agent, wax, cosmetics, personal care product, fiber treatment agent, dye	
184	Dodecamethylcyclohexasiloxane (D6)	208-762-8	540-97-6	Cleaning agent, wax, cosmetics, personal care product	
185	Lead	231-100-4	7439-92-1	Metal, solder, plating, paint, resin additive	PCS No.3
186	Disodium octaborate	234-541-0	12008-41-2	Anti-freezing agent, lubricating oil, grease, cleaning agent	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
187	Benzo[ghi]perylene	205-883-8	191-24-2	Color pigment of rubber and plastic	
188	Terphenyl hydrogenated	262-967-7	61788-32-7	Heating medium, solvent, adhesive, sealing material, resin additive	
189	Ethylenediamine (EDA)	203-468-6	107-15-3	Adhesives, sealing agent, filler, putty, plaster	
190	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)	209-008-0	552-30-7	Production of esters and polymers	
191	Dicyclohexyl phthalate (DCHP)	201-545-9	84-61-7	Plasticizer	
192	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	401-720-1	6807-17-6	Synthetic resin additives, Liquid crystal material, photosensitizer, polycarbonate resin raw material	
193	Benzo[k]fluoranthene	205-916-6	207-08-9	Petroleum fuel such as kerosene and light oil, color pigments of rubber and plastic	PCS No.25
194	Fluoranthene	205-912-4	206-44-0		
195	Phenanthrene	201-581-5	85-01-8		
196	Pyrene	204-927-3	129-00-0		
197	1,7,7-trimethyl-3-(phenylmethylene) bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	239-139-9	15087-24-8	Cosmetics, sunscreen	
198	2-methoxyethyl acetate	203-772-9	110-49-6	Solvent for cleaning electronic materials, for printing ink/ paint and for adhesive	
199	Tris (4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	—	—	Antioxidant to stabilize polymers	
200	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	—	—	Processing aid in the production of fluorinated polymers	
201	4-tert-butylphenol	202-679-0	98-54-4	Paint product, polymer, adhesive, encapsulant	
202	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	404-360-3	119313-12-1	Photopolymerizing agent, UV curing agent	
203	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	400-600-6	71868-10-5		
204	Diisohexyl phthalate	276-090-2	71850-09-4	Plasticizer	
205	Perfluorobutane sulfonic acid (PFBS) and its salts	—	—	Water repellent, surface treatment agent, antifouling agent, fire extinguisher, coating agent	
206	1-vinylimidazole	214-012-0	1072-63-5	Curing agent for epoxy resin, industrial fungicide, anti-rust, pharmaceutical raw material	
207	2-methylimidazole	211-765-7	693-98-1		
208	Dibutylbis (pentane-2,4-dionato-O, O') tin	245-152-0	22673-19-4	Plastic stabilizers, resin synthesis catalyst	PCS No.13

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
209	Butyl 4-hydroxybenzoate (Butylparaben)	202-318-7	94-26-8	Preservative, preservatives for cosmetics and pharmaceuticals	
210	Bis(2-(2-methoxyethoxy) ethyl) ether	205-594-7	143-24-8	Solvent, extractant	
211	Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	—	—	The single component form of this substance (dioctyltin dilaurate) is used as an additive in the production of plastic and rubber tires.	PCS No.14
	Stannane, dioctyl-, bis(coco acyloxy) derivs	293-901-5	91648-39-4		
	Diocetyl tin dilaurate	222-883-3	3648-18-8		
212	Phenol, alkylation products (mainly in para position) with C12-rich branched or linear alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP)	—	—	Preparation of lubricant additive materials and fuel system cleaners	
	Phenol, 4-dodecyl, branched	—	210555-94-5		
	4-isododecyl phenol	—	27459-10-5		
	Phenol, 4-iso dodecyl	—	27147-75-7		
	Phenol, dodecyl-, branched	—	121158-58-5		
	Phenol, (tetrapropenyl) derivative	310-154-3	74499-35-7		
213	Phenol, tetrapropylene-	—	57427-55-1	Solvent, corrosion inhibitor	
	Orthoboric acid, sodium salt	—	—		
	boric acid (H3BO3), sodium salt, hydrate	—	25747-83-5		
	Boric acid (H3BO3), disodium salt	—	22454-04-2		
	Trisodium orthoborate	238-253-6	14312-40-4		
	Boric acid, sodium salt	215-604-1	1333-73-9		
214	Orthoboric acid, sodium salt	237-560-2	13840-56-7	Chlorinated flame retardants, flame retardant plasticizers, sealant, rubber, textile, thermoplastic, paint, varnish	PCS No.45
	Boric acid (H3BO3), sodium salt (1:1)	—	14890-53-0		
	Medium-chain chlorinated paraffins (MCCP)	—	—		
	UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14to C17	—	—		
	Alkanes, C14-16, chloro	—	1372804-76-6		
215	Alkanes, C14-17, chloro	287-477-0	85535-85-9	Biocide, leather tanning, X-ray film developing process, cosmetic	
	di-, tri- and tetrachlorotetradecane	950-299-5	950-299-5		
	Tetradecane, chloro derivs	—	198840-65-2		
216	4,4'-(1-methyl propylidene) bisphenol; (bisphenol B)	201-025-1	77-40-7	Production of phenolic and polycarbonate resins	
217	2-(4-tert-butylbenzyl) propionaldehyde and its individual stereoisomers	—	—	Use in detergents, cosmetics, perfumed articles, abrasives and wax mixtures	
	(2R)-3-(4-tert-butylphenyl)-2-methylpropanal	—	75166-31-3		
	2-(4-tert-butylbenzyl) propionaldehyde	201-289-8	80-54-6		
	(2S)-3-(4-tert-butylphenyl)-2-methylpropanal	—	75166-30-2		

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
218	2,2-bis(bromomethyl)propane1,3-diol (BMP)	221-967-7	3296-90-0	Manufacture of plastic products and chemicals	
	2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA)	253-057-0 —	36483-57-5 1522-92-5		
	2,3-dibromo-1-propanol (2,3-DBPA)	202-480-9	96-13-9		
219	1,4-dioxane	204-661-8	123-91-1	Solvent	
220	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)	204-327-1	119-47-1	Rubber, lubricating oil, adhesives, ink, fuel	
221	tris(2-methoxyethoxy)vinylsilane	213-934-0	1067-53-4	Rubber, plastics, sealant	
222	N-(hydroxymethyl)acrylamide	213-103-2	924-42-5	As a monomer for polymerisation, as a fluoroalkyl acrylate copolymer, and in paints and coatings	
223	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)	—	—	Cosmetics	
	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	253-242-6	36861-47-9		
	(3E)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	—	1782069-81-1		
	(1R,3E,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	—	95342-41-9		
	(1S,3E,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	—	852541-30-1		
	(1R,3Z,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	—	852541-21-0		
	(1R,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	—	741687-98-9		
	(1S,3Z,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	—	852541-25-4		
224	S-(tricyclo [5.2.1.0'2,6] deca-3- en-8(or 9)-yl) O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	401-850-9	255881-94-8	Lubricating oil, grease	
225	1,1'-[ethane-1,2-diylbis(oxy)]bis[2,4,6-tribromobenzene]	253-692-3	37853-59-1	Additive flame retardants	
226	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	201-236-9	79-94-7	Reactive flame retardants	
227	4,4'-sulphonyldiphenol	201-250-5	80-09-1	Thermal paper, leather tanning	
228	Barium diboron tetraoxide	237-222-4	13701-59-2	Coatings and paints, thinner, paint remover	
229	Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof;	-	-	Rubber products, Additive flame retardant for plastic products, plasticizer	
	bis(2-ethylhexyl) etrabromophthalate ;TBPH	247-426-5	26040-51-7		
230	Isobutyl 4-hydroxybenzoate	224-208-8	4247-02-3	Coating products, Filler, Putty, ink, toner, plaster, modeling clay	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
231	Melamine	203-615-4	108-78-1	Raw materials for thermosetting resin	
232	Perfluoroheptanoic acid and its salts	-	-	-	
	Sodium perfluoroheptanoate	243-518-7	20109-59-5		
	potassium perfluoroheptanoat	-	21049-36-5		
	Ammonium perfluoroheptanoate	228-098-2	6130-43-4		
233	reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine	473-390-7	-	-	
234	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	278-355-8	75980-60-8	Ink, toner, Polymer, Photochemical, Coating products, Adhesives, Fillers, Sealants, Putty, Plaster, Modeling clay	
235	Bis(4-chlorophenyl) sulphone	201-247-9	80-07-9	Chemicals, Plastic products, Manufacture of rubber products	
236	2,4,6-tri-tert-butylphenol	211-989-5	732-26-3	Intermediate, Fuel additives, Additised fuels	PCS No.32
237	2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl) phenol	221-573-5	3147-75-9	Air care products, Adhesives and Sealants, Lubricating oil and grease, Polishes and wax blends, Washing and cleaning products	
238	2-(dimethylamino)-2-[(4-methylphenyl) methyl]-1-[4-(morpholin-4-yl) phenyl]butan-1-one	438-340-0	119344-86-4	Ink and tonner, Coating products	
239	Bumetrizole (UV-326)	223-445-4	3896-11-5	Coating products, Adhesives and Sealants, Washing and cleaning products	
240	Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol (Phenol, methylstyrenated)	700-960-7 (270-966-8)	- (68512-30-1)	Adhesives and sealants, Coating products, Fillers, Putty, Plaster, Clay Modeling clays, Inks and toners, Polymers	
241	Bis(α,α -dimethylbenzyl) peroxide; Dicumyl peroxide	201-279-3	80-43-3	Intermediates, reactive components and processing aids for polymerization processing in the production of resins, rubbers and polymers	
242	Triphenyl Phosphate	204-112-2	115-86-6	Flame retardant and plasticiser in polymer formulations, adhesives and sealants	

SVHCs of REACH regulation (continued)

No.	Substance name	EC No.	CAS No.	Examples of use	Remarks
243	6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1yl]hexanoic acid	701-118-1	2156592-54-8	Lubricants, greases, release products and metal working fluids	
244	O,O,O-triphenyl phosphorothioate	209-909-9	597-82-0	Lubricants and greases	
245	Octamethyltrisiloxane	203-497-4	107-51-7	Manufacture and/or formulation of: cosmetics, personal/health care products, pharmaceuticals, washing and cleaning products, coating and non-metal surface treatment and in sealants and adhesives	
246	Perfluamine	206-420-2	338-83-0	Manufacture of electrical, electronic and optical equipment and machinery and vehicles	
247	Reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	421-820-9	192268-65-8	-	
248	1,1,1,3,5,5,5-heptamethyl-3[(trimethylsilyl)oxy] trisiloxane	241-867-7	17928-28-8	Used as a laboratory reagent, in cosmetics and personal care products and perfumes and fragrances	
249	Decamethyltetrasiloxane	205-491-7	141-62-8	Used in cosmetics and personal care products, in lubricants and greases and in automotive care products	
250	Tetra(sodium/potassium) 7-[(E)-{2acetamido-4-[(E)-(4-[[4-chloro-6-[[4-(4-fluoro-6-[[4(vinylsulfonyl)phenyl]amino)-1,3,5triazine-2-yl]amino]propyl]amino)1,3,5-triazine-2-yl]amino)-5sulfonato-1-naphthyl]diazenyl]-5methoxyphenyl}diazenyl]-1,3,6naphthalenetrisulfonate; Reactive Brown 51	466-490-7	-	Used in textile treatment products and dyes	
251	1,1'-(ethane-1,2-diyl) bis[pentabromobenzene] (DBDPE)	284-366-9	84852-53-9	Flame retardant	
252	n-Hexane	203-777-6	110-54-3	Formulation, polymer processing, coatings and cleaning agent	
253	4,4'-[2,2,2-trifluoro-1(trifluoromethyl)ethylidene] diphenol and its salts	-	-	Process regulator and cross-linking agent	
	4,4'-[2,2,2-trifluoro-1(trifluoromethyl)ethylidene] diphenol (Bisphenol AF)	216-036-7	1478-61-1		

Notes:

- (1) Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) is abbreviated to SCCPs.
Here, the short chain corresponds to carbon number 10 to 13 (as the medium chain and long chain correspond to carbon number 14 to 19 and 20 to 30, respectively). SCCPs are a persistent and high-bioaccumulative substance used for various purposes because it has flame retardant properties, plasticity, lubricating properties in metallic processing, and hydrophobicity.
- (2) Refractory Ceramic Fibers, Zirconia Aluminiumsilicate are fibers covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of December 16, 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions:
 - a) oxides of aluminium and silicon are the main components present (in the fibers) within variable concentration ranges
 - b) fibers have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (μm)
 - c) alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight
- (3) Refractory Ceramic Fibers, Aluminosilicate are fibers covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of December 16, 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions:
 - a) oxides of aluminium, silicon and zirconium are the main components present (in the fibers) within variable concentration ranges
 - b) fibers have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (μm)
 - c) alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight
- (4) Those substances are identified as SVHCs in case [with $\geq 0.1\%$ of Michler's ketone (EC No.202-027-5) or Michler's base (EC No.202-959-2)].
- (5) This substance is identified as a SVHC in the following case:
with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008.
- (6) Those substances are substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof.
- (7) According to the REACH regulation, glass and ceramics are one substance, not a mixture of several substances. Even if SVHCs are used as raw materials, the individual raw materials and the glass as a melt reaction product are different substances, so there is no need to communicate information on individual raw materials (SVHCs).

III. Manufacturing Processes

III-1. Prohibited Chemical Substances in Manufacturing Processes

Suppliers are requested to comply with international conventions, environmental laws and regulations of the countries and regions where their facilities are located, and other legal requirements in their manufacturing processes. In Japan, do not use the chemical substances listed in III-1-(1)-(4) below.

III-1-(1) Ozone Depleting Substances

(Substances specified in “Law concerning the Protection of the Ozone Layer through the Control of specified Substances and Other Measures”)

Ozone depleting substances regulated by the Montreal Protocol are targeted.

Protocol Annex	Group	Substance	Use
Annex A	Group I	Chlorofluorocarbon CFC-11, 12, 113, 114, 115	Refrigerants for automobile air-conditioning, refrigerators, etc. Forming agents for insulator materials etc. Detergents for electronic components, metal components, etc.
	Group II	Halons Halon-1211, 1301, 2402	Extinguishing agents
Annex B	Group I	Other CFCs CFC-13, 111, 112, 211, 212, 213, 214	Refrigerants
	Group II	Carbon tetrachloride	Raw material and solvents such as CFC
	Group III	Trichloroethane 1,1,1-Trichloroethane (Methyl chloroform)	Detergents for electronic components, metal components, etc.
Annex C	Group I	HCFC (hydrochlorofluorocarbons) HFC-21, 22, 31, 121, 122, 123, 124, 131, 132, 133, 141, 141b, 142, 142b, 151, 221, 222, 223, 224, 225, 225ca, 225cb, 226, 231, 232, 233, 234, 235, 241, 242, 243, 244, 251, 252, 253, 261, 262, 271	Refrigerants, solvents
	Group II	HBFC (hydrobromofluorocarbons)	Extinguishing agents (Halon alternative)
	Group III	Bromochloromethane	Intermediate compound materials for medical application
Annex E	—	Methyl bromide	Soil fumigants for upland field, etc. Quarantine fumigants at import/export of woods, grains, etc.

III-1-(2) Dusts specified under the Air Pollution Control Law

No.	CAS No.	Substance name	Example of use
1	1332-21-4	Asbestos	Insulator, filler

**III-1-(3) Class I specified Chemical Substances under the Chemical Substances Control Law
(Law concerning the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.)**

No.	CAS No.	Substance name	Example of use
1	1336-36-3	Polychlorinated Biphenyls(PCB)	Insulating oil (old transformers), copy paper
2	—	Polychlorinated Naphthalenes (with more than 2 chlorine atoms)	Solvent, plasticizer, lubricant
3	118-74-1	Hexachlorobenzene	Organically synthesized materials
4	309-00-2	Aldrin	Agrichemical
5	60-57-1	Dieldrin	Agrichemical
6	72-20-8	Endrin	Agrichemical
7	50-29-3	DDT	Pesticide
8	57-74-9	Chlordane	Agrichemical, termite insecticide
9	56-35-9	Bis(tributyltin) oxide	Antifoulant for fishing nets, ship bottom paint
10	—	N,N'-ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylene diamine and N,N'-dixylyl-p-phenylenediamine	Rubber antioxidant, styrene butadiene rubber
11	732-26-3	2,4,6-tri-tert-butylphenol	Anti-oxidant
12	8001-35-2	Polychloro-2,2-dimethyl-3-Methylidenbicyclo [2.2.1] heptane (synonym: toxaphene)	Pesticide
13	2385-85-5	Dodecachloropentacyclo [5.3.0.0(2.6).0(3.9).0(4.8)] decane (synonym: mirex)	Flame retardant, pesticide
14	115-32-2 10606-46-9	2,2,2-Trichloro-1-(2-chlorophenyl)-1-(4-chlorophenyl)ethanol or 2,2,2-trichloro-1,1-bis(4-chlorophenyl) ethanol (also known as kelthane or dicofol)	Miticide, agrichemical, pesticide
15	87-68-3	Hexachlorobutane-1,3-diene	Solvent
16	3846-71-7	2-(2'-Hydroxy-3',5'-di-tert-butylphenyl) benzotriazole	Adhesive, bulking agent, inks and paint, plastics
17	—	Perfluoro (octane-1-sulfonic acid)	Plating agent, semiconductor/LSI film-forming material, extinguishing agent, water repellent, paper surface-treating agent, plastic modifier
18	307-35-7	Perfluorooctane-1-sulfonyl fluoride	Water and oil repellent, surfactant
19	608-93-5	Pentachlorobenzene	Agrichemical
20	319-84-6	(1 α ,2 α ,3 β ,4 α ,5 β ,6 β)-1,2,3,4,5,6-hexachlorocyclohexane	By-product of lindane
21	319-85-7	Beta-HCH	By-product of lindane
22	58-89-9	Lindane	Agrichemical
23	143-50-0	Chlordecone	Agrichemical
24	—	Hexabromobiphenyl	Flame retardant
25	—	Diphenyl ether, tetrabromo derivative	Flame retardant
26	—	Benzene, 1,1'-oxybis-, pentabromo derivative	Flame retardant
27	—	Diphenyl ether, hexabromo derivative	Flame retardant
28	—	Diphenyl ether, heptabromo derivative	Flame retardant
29	115-29-7	6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepine 3-oxide (synonym: Endosulfan or Benzoepin)	Pesticide (insecticide)
30	25637-99-4	Hexabromocyclododecan (HBCD)	Flame retardant
31	—	Pentachlorophenol and its salts and esters	fungicide
32	85535-84-8	Chloroalkanes C10-13	Lubricating oil, plasticizer, paint, adhesive
33	1163-19-5	1,1'-oxybis (2,3,4,5,6-pentabromo-benzen (Decabromodiphenyl oxide)	Flame retardant

Class I specified Chemical Substances under the Chemical Substances Control Law (continued)

No.	CAS No.	Substance name	Example of use
34	335-67-1 3825-26-1 335-95-5 2395-00-8	Perfluorooctanoic acid (Synonym: PFOA) or perfluoroalkanoic acid) (It is limited to those with a branched structure and the number of carbon is 8.) or their salts	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist
35	—	Perfluorooctanoic acid related compounds	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist
36	—	Perfluorohexanoic acid(PFHxS), its salts	Carpets, leather, textile, paper, plating, electronic components
37	—	Perfluoro(hexane-1-sulfonic acid) related compounds	Carpets, leather, textile, paper, plating, electronic components
38	25973-55-1	2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol (synonym: UV-328)	UV absorber, polarizing plate, anti-reflective film, hologram label
39	72-43-5 30667-99-3 59424-81-6 76733-77-2 255065-25-9 255065-26-0 1348358-72-4	1,1,1-Trichloro-2,2-bis(methoxyphenyl)ethane (synonym: Methoxychlor)	Pesticide for agricultural and household and hygiene
40	13560-89-9 135821-03-3 135821-74-8	1,2,3,4,7,8,9,10,13,13,14,14-Dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-1,4:7,10-dimethanodibenzo[a,e][8]annulene (synonym: Dechlorane Plus)	Adhesive, sealant, flame retardant, electrical insulation tape, cable, connector
41	—	Long-chain (C9-C21) perfluorocarboxylic acids, its salts	Fluoropolymer processing aids, surfactants
42	—	Long-chain (C9-C21) perfluorocarboxylic acids related compounds	Fluoropolymer processing aids, surfactants
43	2921-88-2	Chlorpyrifos	Pesticide
44	—	Chlorinated paraffins with carbon chain lengths in the range C14-17 and chlorination levels at or exceeding 45 per cent chlorine by weight	Metalworking fluids, flame-retardant resin raw materials

III-1-(4) Hazardous Substances prohibited from Manufacture under the Industrial Safety and Health Act

No.	CAS No.	Substance name	Example of use
1	—	Yellow phosphor	
2	92-87-5	Benzidine	Dyes, synthetic rubber hardener
3	92-67-1	4-aminobiphenyl	Dye intermediates
4	—	Asbestos	Building materials, asbestos fabrics
5	92-93-3	4-nitrodiphenyl	Dye intermediates
6	542-88-1	Bis(chloromethyl)ether	Dye, pigment, methylating agent
7	91-59-8	β-Naphthylamine ; 2-Naphthylamine	Dye intermediates
8	—	Rubber cement containing solvent (including diluents) of more than 5% benzene.	
9	—	Drugs and other formulations containing more than 1% by weight of item Nos. 2, 3, and 5–7; or more than 0.1% by weight of No. 4.	

III-2 Controlled Chemical Substances in Manufacturing Processes

Suppliers are requested to comply with environmental laws and regulations of the countries and regions where their facilities are located, and other legal requirements in their manufacturing processes. In Japan, please use the chemical substances listed in section III-2-(1) and III-2-(2) below under appropriate control.

III-2-(1) Class I designated Chemical Substances under the PRTR Law (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof)

The regulated substances have been changed since April 1, 2023. The latest list of regulated substances can be found on the Ministry of Economy, Trade and Industry's website.

https://www.meti.go.jp/policy/chemical_management/law/prtr/2.html

III-2-(2) Class I designated Hazardous Substances under the Soil Contamination Countermeasures Law

No	CAS No.	Substance name
1	56-23-5	Carbon tetrachloride
2	107-06-2	1,2-dichloroethane
3	75-35-4	1,1-dichloroethane
4	156-59-2	Cis-1,2-dichloroethane
5	542-75-6	1,3-dichloropropene
6	75-09-2	Dichloromethane
7	127-18-4	Tetrachloroethylene
8	71-55-6	1,1,1-trichloroethane
9	79-00-5	1,1,2-trichloroethane
10	79-01-6	Trichloroethylene
11	71-43-2	Benzene
12	75-01-4	Chloroethylene

Date	Edition	Major revisions
April 1, 2014	1.0 (first edition)	These chemical substance lists are separated from "Nikon Green Procurement Standards (3.4 edition)". From "Nikon Green Procurement Standards (4.0 edition)", this document shall be used as a separate volume of chemical substance lists. (Major changes from Nikon Green Procurement Standards, 3.4 edition) - For the Prohibited Chemical Substances in Products, divide tri-substituted organotin compounds into tri-substituted organotin compounds and tributyltin oxide (TBTOs). - Changed threshold amounts for some of the Prohibited Chemical Substances in Products. - Added two substances (HBCD and PFOA) as the Prohibited Chemical Substances in Products. - Removed Antimony, Bismuth, Selenium, and their compounds from the Controlled Chemical Substances in Products. - Added 35 substances as the Controlled Chemical Substances in Products. - Added 15 substances as the Prohibited Chemical Substances in Packaging Materials. - Added a section for the Controlled Chemical Substances in Packaging Materials and specified 147 substances.
October 6 ,2025	3.0	-Revised and added contents of I -1. Prohibited Chemical Substances (No.6,15,16, 29,31,35, 41). -Added No.44-47 of I -1. Prohibited Chemical Substances. -Updated the expiration dates in I -1. Annex 1" Applications exempted from the RoHS Directive Annex III". -Updated the expiration dates in I -1. Annex 2" Applications exempted from the RoHS Directive Annex IV " -Deleted No.14,16, and 18 of I -2- (1) Controlled Chemical Substances and revised number. -Revised and added contents No.2,14, and 15 of I -2- (1) Controlled Chemical Substances. -Added No.16 of I -2- (1) Controlled Chemical Substances. -Added 8 substances of I -2- (2) SVHCs of REACH Regulation. -Revised contents of II-2 Controlled Chemical Substances in Manufacturing Processes -Revised description regarding the meaning of thresholds. -Revised description regarding the meaning of Intentionally added.
September 17,2026	3.1	-Added chapter of I. Definition. -Revised and added contents of II II-1. Prohibited Chemical Substances (No.1-8, 10, 19, 22, 26, 36-41, 44, 45). -Deleted No. 16 and 47 of II -1. Prohibited Chemical Substances and revised numbers. -Revised and deleted several Notes of II -1. Prohibited Chemical Substances and revised numbers. -Updated the expiration dates in II -1. Annex 1" Applications exempted from the RoHS Directive Annex III". -Updated the expiration dates in II -1. Annex 2" Applications exempted from the RoHS Directive Annex IV " -Revised and added contents No. of II -2- (1) Controlled Chemical Substances (No.1-3, 6-9,16). -Added No.17,18 and 19 of II -2- (1) Controlled Chemical Substances. -Deleted several Notes of II -2- (1) Controlled Chemical Substances and revised numbers. -Added 3 substances of II -2- (2) SVHCs of REACH Regulation. -Revised contents of III-1 Prohibited Chemical Substances in Manufacturing Processes. -Revised contents of III-2 Controlled Chemical Substances in Manufacturing Processes.