Nikon Green Procurement Standards

Separate Volume: Corresponding Chemical Substance Lists

Effective December 1, 2023 (2.4 edition)

NIKON CORPORATION

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I. Procurement Items

I -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 maximum allowable concentration (threshold values). If multiple thresholds are written in a single threshold field, all of them must be satisfied.

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="5">1</td><td rowspan="5">Cadmium/cadmium Compounds</td><td>・RoHS Directive 2011/65/EU
・ANNEX XVII Entry 23 of REACH Regulation (EC) No 1907/2006</td><td>All except the below applications</td><td>0.01% by weight (100 ppm) of cadmium in homogeneous material</td><td>Pigment, anti-corrosion surface treatment, optical glass, stabilizer, plating, fluorescent, electrode, solder, electric contact, contact point, zinc plating plastic stabilizer</td></tr>
<tr><td>・EU Directive 94/62/EC on Packaging and Packaging Waste
・US State Toxics in Packaging (TPCH Model Legislation)</td><td>Packaging materials</td><td>・Intentionally added(1)
・0.01% by weight (100 ppm) of the sum of cadmium, mercury, lead & chromium VI in homogeneous material</td><td>Pigment, paint, plastic stabilizer</td></tr>
<tr><td>ANNEX XVII Entry 72(12) of REACH Regulation (EC) No 1907/2006</td><td>・Clothing or related accessories
・Textiles
・Footwear</td><td>0.0001% by weight (1 ppm) of cadmium in homogeneous material</td><td>Pigment, dye</td></tr>
<tr><td rowspan="2">・EU Batteries Regulation (EU)2023/1542
・Korea “Quality Management and Industrial Products Safety Management Enforcement Ordinances”
・Taiwan Waste Disposal Act (Regulation on heavy metal)</td><td>Zinc–carbon batteries, alkaline manganese batteries, and nickel–metal hydride (Ni-MH) secondary batteries (except Button cells)</td><td>0.001% by weight (10ppm) of cadmium in a battery</td><td></td></tr>
<tr><td>Batteries, other than the batteries listed above (except for emergency and alarm systems, including emergency lighting, and medical equipment)</td><td>0.002% by weight (20ppm) of cadmium in a battery</td><td></td></tr>
<tr><td colspan="5">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
<table>
<tr><th>Substance name</th><th>CAS No.</th></tr>
<tr><td>Cadmium</td><td>7440-43-9</td></tr>
<tr><td>Cadmium oxide</td><td>1306-19-0</td></tr>
</table>
</td></tr>
</table>

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
1	**Cadmium/cadmium Compounds (continued)**	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(12) 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 Directive 94/62/EC on Packaging and Packaging Waste ・US State Toxics in Packaging (TPCH Model Legislation)	Packaging materials	・Intentionally added(1) ・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, freecutting steel, optical material, X-ray shielding in CRT glass, solder material, curing agent, vulcanizing agent, ferroelectrics, plating, metal alloy
		ANNEX XVII Entry 63(11) 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	
				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	
		ANNEX XVII Entry 72(12) 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 (1) ・0.03% by weight (300 ppm) of lead in surface coating	Pigment, paint, stabilizer, colorant
		・EU Directive 94/62/EC on Packaging and Packaging Waste ・US State Toxics in Packaging (TPCH Model Legislation)	packaging materials	・Intentionally added (1) ・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 ・Brazilian Batteries Regulation National Environmental Council Resolution 401 ・Chinese National Standards regarding the limit of hazardous	Alkaline manganese batteries	0.004% by weight (40ppm) of lead in a battery	
			Zinc air button cells	0.05% by weight (500ppm) of lead in a battery	
			Batteries, other than the batteries listed above	0.01% by weight (100ppm) of lead in a battery	

	Lead/lead compounds (continued)	substances in batteries (GB24427-2021) ・Korea “Quality Management and Industrial Products Safety Management Enforcement Ordinances”			

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.
Lead	7439-92-1
Lead (II) sulfate	7446-14-2
Lead (II) carbonate	598-63-0
Lead (II) chromate	7758-97-6
Lead chromate molybdate sulphate red	12656-85-8
Lead hydrocarbonate	1319-46-6
Lead acetate	301-04-2
Lead (II) acetate, trihydrate	6080-56-4
Lead phosphate	7446-27-7
Lead selenide	12069-00-0
Lead (IV) oxide	1309-60-0
Lead (II,IV) oxide	1314-41-6
Lead (II) sulfide	1314-87-0
Lead (II) oxide	1317-36-8
Lead (II) carbonate basic	1319-46-6
Lead hydroxidcarbonate	1344-36-1
Lead (II) phosphate	7446-27-7
Lead sulfochromate yellow	1344-37-2
Lead (II) titanate	12060-00-3
Lead sulfate, sulphuric acid, lead salt	15739-80-7
Lead sulphate, tribasic	12202-17-4
Lead stearate	1072-35-1
Lead oxide	1335-25-7
Lead (II) fluoride	7783-46-2

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 ・ANNEX XVII Entry 18, 18a of REACH Regulation (EC) No 1907/2006	All except the below applications	・Intentionally added(1) ・0.1% by weight (1,000 ppm) of mercury in homogeneous material	Fluorescent bulb, contact point material, pigment, anti-corrosion, switches, antibacterial treatment
		・EU Directive 94/62/EC on Packaging and Packaging Waste ・US State Toxics in Packaging (TPCH Model Legislation)	Packaging materials	・Intentionally added(1) ・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(1) ・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)	・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)

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) in homogeneous material	Flame retardant

Representative examples of relevant substance

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

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
6	**Polybrominated diphenyl ethers (PBDEs)**	・RoHS Directive 2011/65/EU ・Japan Law concerning the evaluation of chemical substances	Electrical and electronic products (Including accessories)	・Intentionally added (1) ・0.1% by weight (1,000 ppm) in homogeneous material	Flame retardant
		EU Revised POPs Regulation (EU)2019/1021	All except the above	・Intentionally added (1) ・0.05% by weight (500 ppm) for the sum of PBDEs (10) in article	
		US Toxic Substances Control Act (TSCA) PBT Rules	All	Intentionally added (1) (Only DecaBDE)	

Representative examples of relevant substance

Substance name	CAS No.
Bromodiphenyl ether	101-55-3
Dibromodiphenyl ether	2050-47-7
Tribromodiphenyl ether	49690-94-0
Tetrabromodiphenyl ether	40088-47-9
Pentabromodidphenyl 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

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 (1)	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: Polychlorinated Biphenyls (all isomers and congeners) — CAS No. 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) 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: Polychlorinated Terphenyls (all isomers and congeners) — CAS No. 61788-33-8			
9	**Polychlorinated naphthalenes (PCNs)**	・Japan Law concerning the evaluation of chemical substances ・EU Revised POPs regulation (EU) 2019/1021	All	Intentionally added (1)	Lubricant, paint, stabilizer (electric haracteristic, flame-resistant, waterresistant) insulator, flame retardant, antiseptics, mildew repellent
		Representative examples of relevant substance			
		Substance name: Polychlorinated naphthalenes — CAS No. 70776-03-3			

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
10	**Shortchain chlorinated paraffins (C10 –13)（SCCPs）**	・EU Revised POPs regulation（EU）2019/1021 ・Japan Law concerning the evaluation of chemical substances	All	・Intentionally added (1) ・0.15% by weight (1,500 ppm) in article	Plasticizer for PVC, flame retardant
		Representative examples of relevant substance			
		Substance name: Alkanes, C10-13, chloro — CAS No.: 85535-84-8			
		Alkanes, C10-12, chloro — 108171-26-2			
		Alkanes, C12-13, chloro — 71011-12-6			
11	**Tri-substituted organostannic compounds**	・ANNEX XVII Entry 20 of REACH Regulation (EC) No 1907/2006 ・Japan Law concerning the evaluation of chemical substances	All	・Intentionally added (1) ・0.1% by weight (1,000 ppm) of tin in a part	Stabilizer, antioxidant, antibacterial and antifungal agent, antifoulant, antiseptic, paint, pigment, antistaining

Representative examples of relevant substance

Substance name	CAS No.
Triphenyltin-N, N-dimethyldithiocarbamate	1803-12-9
Triphenyltinfluoride	379-52-2
Triphenyltinacetate	900-95-8
Triphenyltinchloride	639-58-7
Triphenyltinhydroxide	76-87-9
Triphenyltin fattyacid ((9-11) salt)	18380-71-7 18380-72-8 47672-31-1 94850-90-5
Triphenyltinchloroacetate	7094-94-2
Tributyltinmethacrylate	2155-70-6
Bis(tributyltin)fumalate	6454-35-9
Tributyltinfluoride	1983-10-4
Bis(tributyltin)2,3-dibromosuccinate	31732-71-5
Tributyltinacetate	56-36-0
Tributyltinlaurate	3090-36-6
Bis(tributyltin)phthalate	4782-29-0
Coplymer of alkyl (c=8) acrylate, methyl methacrylate and tributyltin methacrylate	67772-01-4
Tributyltinsulfamate	6517-25-5
Bis(tributyltin)maleate	14275-57-1
Tributyltinchloride	1461-22-9 7342-38-3
Tributyltin cyclopentane carbonate = mixture	85409-17-2
Tributyltin-1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isoplopyl-1,4a-dimethyl-1-phenanthrencarboxylatemix	26239-64-5

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
12	**Tributyl tin oxide (TBTO)**	Japan Law concerning the evaluation of chemical substances	All	Intentionally added (1)	Antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner, stabilizer for PVC, curing catalyst for silicone resin and urethane resin
		Substance name: Tributyl tin oxide (TBTO) — CAS No.: 56-35-9			
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
		Representative examples of relevant substance			
		Substance name: Dibutyltin oxide — CAS No.: 818-08-6			
		Substance name: Dibutyltin diacetate — CAS No.: 1067-33-0			
		Substance name: Dibutyltin dilaurate — CAS No.: 77-58-7			
		Substance name: Dibutyltin maleate — CAS No.: 78-04-6			
		Substance name: Dibutyltin dichloride — CAS No.: 683-18-1			
14	**Dioctyltin (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
		Representative examples of relevant substance			
		Substance name: Dioctyl Tin Oxide — CAS No.: 870-08-6			
		Substance name: Dioctyltin dilaurate — CAS No.: 3648-18-8			

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 ・EC 1005/2009 ・US Clean Air Act	All	Intentionally added (1)	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) 1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	134237-32-4 354-14-3 354-11-0
			Trichlorodifluoroethane (HCFC-122) 1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a) 1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	41834-16-6 354-21-2 354-15-4 354-12-1
			Dichlorotrifluoroethane (HCFC-123) 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a) 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	34077-87-7 306-83-2 354-23-4 812-04-4
			Chlorotetrafluoroethane (HCFC-124) 1-chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	63938-10-3 2837-89-0 354-25-6
			Trichlorofluoroethane (HCFC-131) 1,1,2-Trichloro-2-fluoroethane (HCFC-131) 1,1,2-Trichloro-1-fluoroethane (HCFC131a) 1,1,1-Trichloro-2-fluoroethane (HCFC-131b)	27154-33-2; 134237-34-6 359-28-4 811-95-0 2366-36-1
			Dichlorodifluoroethane (HCFC-132) 1,1-Dichloro-2,2-difluoroethane (HCFC-132a) 1,2-Dichloro-1,1-difluoroethane (HCFC-132b) 1,1-Dichloro-1,2-difluoroethane (HCFC-132c)	25915-78-0 431-06-1 471-43-2 1649-08-7 1842-05-3
			Chlorotrifluoroethane (HCFC-133) 2-Chloro-1,1,1-trifluoroethane (HCFC-133a) 1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	1330-45-6 431-07-2 75-88-7 421-04-5
			Dichlorofluoroethane(HCFC-141) 1,1-Dichloro-2-fluoroethane (HCFC-141a) 1,1-Dichloro-1-fluoroethane (HCFC-141b)	25167-88-8 430-57-9 430-53-5 1717-00-6
			Chlorodifluoroethane (HCFC-142) 1-Chloro-1,1-difluoroethane (HCFC-142b) 1-Chloro-1,2-difluoroethane (HCFC-142a)	25497-29-4 338-65-8 75-68-3 338-64-7
			Chlorofluoroethane (HCFC-151) 1-Chloro-1-fluoroethane (HCFC-151a)	110587-14-9 762-50-5 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-Dicloro-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)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
16	**Radioactive substances**	・EU-D 96/29/Euratom ・Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors ・Japan Law oncerning Prevention from Radiation Hazards	All	Intentionally added (1)	Optical properties (thorium), measuring device, gauges, detector

Representative examples of relevant substance

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

17	**Asbestos**	・ANNEX XVII Entry 6 of REACH Regulation (EC) No 1907/2006 ・US TSCA	All	Intentionally added (1)	Insulator, filler, pigment, paint, talc, heat insulating material

Representative examples of relevant substance

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

Prohibited Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/
Category</th><th>Key Legal and
Regulatory
or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="2">18</td><td rowspan="2">Azocolourants and azodyes which form certain aromatic amines (3)</td><td>・ANNEX XVII Entry 43 of REACH Regulation (EC) No 1907/2006</td><td>Textiles
and leather</td><td>0.003% by weight (30 ppm) (3)
of the finished textile/leather product</td><td>Pigment,
dye,
colorant</td></tr>
<tr><td colspan="4">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>
Note: The European Community’s ban applies to azocolourants and azodyes that by reductive cleavage of azo groups may release one of the above 22 aromatic amines.</td></tr>
<tr><td rowspan="2">19</td><td rowspan="2">Polyvinyl chloride (PVC) /
PVC compounds</td><td>・JS709</td><td>・Packaging materials
・carrying bag, pouch</td><td>0.1% total chlorine content by weight (1,000 ppm)
in plastic material</td><td>Insulator,
cable coating,
film, tube,
tamperproof labels, clam-shell packs</td></tr>
<tr><td colspan="4">If customers specify use of PVC packaging materials, above prohibitions shall not apply.
Applications other than the above shall apply to controlled chemical substances.
Representative examples of relevant substance
<table>
<tr><th>Substance name</th><th>CAS No.</th></tr>
<tr><td>Polyvinyl chloride (PVC)</td><td>9002-86-2</td></tr>
</table></td></tr>
</table>

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
20	**Perfluorooctane sulfonate (PFOS) and its salts**	・EU POPs Regulation (EU)2019/1021 ・Canadian Environmental Protection Act 1999 ・Japan Law concerning the evaluation of chemical substances	All	・Intentionally added (1) ・0.1% by weight (1,000 ppm) in a part ・1 μg/m2 in textiles or coated material	Photoresist, anti-reflection coating agent, film, paper, photos coating, plating mist inhibitor, lubricating oil used in the electroplating process

Representative examples of relevant substance

Substance name	CAS No.
Perfluoroctane 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
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

21	**Dimethyl fumarate (DMF)**	ANNEX XVII Entry 61 of REACH Regulation (EC) No 1907/2006	All	0.00001% by weight (0.1 ppm) in a part	Biocide, mold treatment of electronic leather seat including recliner, massage chair

Substance name	CAS No.
Dimethyl fumarate (DMF)	624-49-7

22	**Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)**	Japan Law concerning the evaluation of chemical substances	All	Intentionally added (1)	Adhesive, paint, printing ink, plastics, inked ribbon, putty, caulking or sealing filler

Substance name	CAS No.
Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)	3846-71-7

Prohibited Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td>23</td><td>Hexabromocyclododecane (HBCD [4]) and all major diastereoisomers</td><td>・Japan Law concerning the evaluation of chemical substances
・EU POPs Regulation（EU）2019/1021</td><td>All</td><td>・Intentionally added [1]
・0.01% by weight (100 ppm) in an article</td><td>Flame retardant mainly used for expanded polystyrene and some types of fiber</td></tr>
<tr><td colspan="5">Representative examples of relevant substance
<table>
<tr><th>Substance name</th><th>CAS No.</th></tr>
<tr><td>Hexabromocyclododecane (HBCD)</td><td>25637-99-4
3194-55-6</td></tr>
<tr><td>α-hexabromocyclododecane</td><td>134237-50-6</td></tr>
<tr><td>β-hexabromocyclododecane</td><td>134237-51-7</td></tr>
<tr><td>γ-hexabromocyclododecane</td><td>134237-52-8</td></tr>
<tr><td>rel-(1R,2S,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>4736-49-6</td></tr>
<tr><td>rel-(1R,2S,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>65701-47-5</td></tr>
<tr><td>(1R,2R,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>138257-17-7</td></tr>
<tr><td>(1R,2R,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>138257-18-8</td></tr>
<tr><td>(1R,2S,5S,6R,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>138257-19-9</td></tr>
<tr><td>(1R,2S,5S,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>169102-57-2</td></tr>
<tr><td>(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>678970-15-5</td></tr>
<tr><td>(1R,2S,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>678970-16-6</td></tr>
<tr><td>(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane</td><td>678970-17-7</td></tr>
</table></td></tr>
<tr><td>24</td><td>Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances [7]</td><td>・Japan Law concerning the evaluation of chemical substances
・EU POPs Regulation (EU)2019/1021 and (EU)2020/784 [9]</td><td>All</td><td>・Intentionally added [1]
・0.0000025% by weight (25 ppb) of PFOA including its salts in a mixture or an article [8]
・0.0001% by weight (1000ppb) of one or a combination of PFOA-related substances in a mixture or an article[8]</td><td>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</td></tr>
<tr><td colspan="5">The above standards shall apply to the items supplied to Nikon after January 4, 2020. However, for Exemption (1), the above standards shall be applied from one year prior to the following expiration date of exemptions.

Exemption
(1) The following applications
(a) photolithography or etch processes in semiconductor manufacturing, until 4 July 2025;
(b) photographic coatings applied to films, until 4 July 2025;
(c) textiles for oil- and water-repellency for the protection of workers from dangerous liquids that comprise risks to their health and safety, until 4 July 2023;
(d) invasive and implantable medical devices, until 4 July 2025;
(2) 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.</td></tr>
</table>

Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances [7] (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
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-ω-perfluoro-C4-10-alkyl) thio] methyl] derivs., phosphates, ammonium salts	148240-85-1
1,3-Propanediol, 2,2-bis[[(γ-ω-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-(oxiranylmethoxy)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
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

	Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances [7] (continued)	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), a-fluoro-w-(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), a-[2-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-1-oxooctyl) amino] ethyl] -w-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)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="3">25</td><td rowspan="3">Polycyclic-aromatic hydrocarbons (PAH)</td><td rowspan="2">・ANNEX XVII Entry 50 of REACH Regulation (EC) No 1907/2006</td><td>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</td><td>0.0001% by weight (1 ppm) of any one of following PAHs in rubber or plastic component</td><td rowspan="2">Rubber, plasticizer, colored pigment for plastic</td></tr>
<tr><td>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</td><td>0.00005% by weight (0.5 ppm) In rubber or plastic component</td></tr>
<tr><td>・ANNEX XVII Entry 72(12) of REACH Regulation (EC) No 1907/2006</td><td>・Clothing or related accessories
・Textiles
・Footwear</td><td>0.0001% by weight (1 ppm) of any one of following PAHs in homogeneous material</td><td></td></tr>
<tr><td colspan="5">Relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Benzo[a]pyrene (BaP)</td><td>50-32-8</td></tr><tr><td>Benzo[e]pyrene (BeP)</td><td>192-97-2</td></tr><tr><td>Benzo[a]anthracene (BaA)</td><td>56-55-3</td></tr><tr><td>Chrysen (CHR)</td><td>218-01-9</td></tr><tr><td>Benzo[b]fluoranthene (BbFA)</td><td>205-99-2</td></tr><tr><td>Benzo[j]fluoranthene (BjFA)</td><td>205-82-3</td></tr><tr><td>Benzo[k]fluoranthene (BkFA)</td><td>207-08-9</td></tr><tr><td>Dibenzo[a,h]anthracene (DBAhA)</td><td>53-70-3</td></tr></table></td></tr>
</table>

Prohibited Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/
Category</th><th>Key Legal and
Regulatory
or Industry Standard</th><th>Application(s)</th><th>Threshold
Level</th><th>Examples of
Use</th></tr>
<tr><td rowspan="3">26</td><td rowspan="3">Selected
four Phthalates

・Bis (2-ethylhexyl)
phthalate
(DEHP)
・Dibutyl phthalate
(DBP)
・Benzyl butyl
phthalate
(BBP)
・Diisobutyl
phthalate
(DIBP)</td><td>Commission Delegated Directive (EU) 2015/863 amending Annex II to RoHS Directive 2011/65/EU</td><td>Electrical and electronic products (Including accessories)</td><td>0.1% by weight (1,000 ppm) of each phthalate in homogeneous material</td><td>Plasticizer, dye, pigment, paint, ink, adhesive, lubricant</td></tr>
<tr><td>ANNEX XVII Entry 51 of REACH Regulation (EC) No 1907/2006</td><td>All except the following exemptions</td><td>0.1% by weight (1,000 ppm) for the sum of each phthalate in plasticised material</td><td></td></tr>
<tr><td colspan="4">Above-mentioned “ANNEX XVII Entry 51 of REACH Regulation (EC) No 1907/2006” shall apply to the items supplied to Nikon after July 7, 2019, and the following articles shall not apply.

(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></td></tr>
</table>

Prohibited Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="3">27</td><td rowspan="3">Formaldehyde</td><td>・US Federal Law 40 CFR Part 770
・Germany ChemVerbotsV
・Denmark Dirctive No.289</td><td>Wood products or parts using plywood, particle board, medium density fiber board or the like</td><td>Intentionally added (1), (5)</td><td>Speaker box, rack</td></tr>
<tr><td>・ANNEX XVII Entry 72(12) of REACH Regulation (EC) No 1907/2006
・Austria-BGBI 1990/194</td><td>・Clothing or related accessories
・Textiles
・Footwear</td><td>0.0075% by weight (75 ppm) In homogeneous material</td><td>Adhesive, paint</td></tr>
<tr><td colspan="4">Relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Formaldehyde</td><td>50-00-0</td></tr></table></td></tr>
<tr><td rowspan="4">28</td><td rowspan="4">Arsenic/Arsenic compounds</td><td>ANNEX XVII Entry 19 of REACH Regulation (EC) No 1907/2006</td><td>Wood</td><td>Intentionally added (1)</td><td>Preservative for wood</td></tr>
<tr><td>ANNEX XVII Entry 72(12) of REACH Regulation (EC) No 1907/2006</td><td>・Clothing or related accessories
・Textiles
・Footwear</td><td>0.0001% by weight (1 ppm) of arsenic in homogeneous material</td><td></td></tr>
<tr><td>—</td><td>Optical glass, filter glass</td><td>Intentionally added (1), (6)</td><td>Antifoaming agent, decolorizer</td></tr>
<tr><td colspan="4">Representative examples of relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Arsenic</td><td>7440-38-2</td></tr><tr><td>Chromated copper arsenate (CCA)</td><td>37337-13-6</td></tr><tr><td>Diarsenic pentoxide</td><td>1303-28-2</td></tr><tr><td>Diarsenic trioxide</td><td>1327-53-3</td></tr><tr><td>Triethyl arsenate</td><td>15606-95-8</td></tr><tr><td>Trilead diarsenate</td><td>3687-31-8</td></tr><tr><td>Calcium arsenate</td><td>7778-44-1</td></tr></table></td></tr>
</table>

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
29	**Fluorinated greenhouse gases (HFC, PFC, SF_6)**	EU Revised F-Gas Regulation (EU) No 517/2014	Refer to the followings as products, equipments and gases to be prohibited	Intentionally added (1)	Refrigerant, Blowing agent, extinguishing agent, cleaning agent, insulating material, caustic gas

Fluorinated greenhouse gases to be controlled

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
Other perfluorinated compounds		
Sulfur hexafluoride (SF6)	2551-62-4	22,800

（※1） GWP：global warning potential

Products, equipments and gases to be controlled

Products and equipments	Gases	GWP(※2)	Date of prohibition
Non-refillable containers used to service, maintain or fill refrigeration, air-conditioning or heat-pump equipment, fire protection systems or switchgear, or for use as solvents	HFCs、PFCs、SF_6	—	already prohibited
Non-confined direct evaporation systems (Cooling system)	HFCs、PFCs	—	already prohibited
Fire protection equipment	PFCs	—	already prohibited
	HFC-23	—	already prohibited
Windows for domestic use	HFCs、PFCs、SF_6	—	already prohibited
Other windows	HFCs、PFCs、SF_6	—	already prohibited

	Fluorinated greenhouse gases (PFC, SF_6, HFC) (continued)	Footwear		HFCs、PFCs、SF_6	―	already prohibited
		Tyres		HFCs、PFCs、SF_6	―	already prohibited
		One-component foams, except when required to meet national safety standards		HFCs、PFCs、SF_6	≧150	already prohibited
		Aerosol generators marketed and intended for sale to the general public for entertainment and decorative purposes, as listed in point 40 of Annex XVII to Regulation (EC) No 1907/2006, and signal horns		HFCs	≧150	already prohibited
		Domestic refrigerators and freezers		HFCs	≧150	already prohibited
		Technical aerosols except when required to meet national safety standards or when used for medical applications		HFCs	≧150	already prohibited
		Refrigerators and freezers for commercial use (hermetically sealed equipment)		HFCs	≧2,500	already prohibited
					≧150	Jan.1, 2022
		Stationary refrigeration equipment except equipment intended for application designed to cool products to temperatures below – 50℃		HFCs	≧2,500	already prohibited
		Multipack centralised refrigeration systems for commercial use with a rated capacity of 40 kW or more except in the primary refrigerant circuit of cascade systems where fluorinated greenhouse gases with a GWP of less than 1,500 may be used		HFCs、PFCs、SF_6	≧150	Jan.1, 2022
		Movable room air-conditioning equipment (hermetically sealed equipment which is movable between rooms by the end user)		HFCs	≧150	already prohibited
		Single split air-conditioning systems containing less than 3 kg of fluorinated greenhouse gases		HFCs、PFCs、SF_6	≧750	Jan.1, 2025
		Foams except when required to meet national safety standards	Extruded polystyrene (XPS)	HFCs	≧150	already prohibited
			Other foams			Jan.1, 2023
		（※2）The GWP of mixtures containing fluorinated greenhouse gases shall be calculated in accordance with Annex IV of (EU) No 517/2014.				

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
30	**CMR substances listed in Annex XVII of REACH Regulation (Excluding substances already listed as prohibited chemical substances)**	ANNEX XVII Entry 72(12) 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] cycloh exa-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-Diaminoanisole 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)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="2">31</td><td rowspan="2">Phenol, Isopropylated Phosphate (PIP (3:1))</td><td>US TSCA PBT Rules</td><td>All except the below applications</td><td>Intentionally added (1)</td><td>Flame retardant, plasticizer, adhesive, sealant, lubricant</td></tr>
<tr><td colspan="4">The above standards shall be apply from November 1, 2023. However, for Exemption (6) adhesives and sealants, the above standard will be applied from January 6, 2024.

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) Lubricants and greases
(3) New and replacement parts for the automotive and aerospace industry
(4) An intermediate in a closed system to produce cyanoacrylate adhesives
(5) Specialized engine filters for locomotive and marine applications
(6) Adhesives and sealants, until January 6, 2025

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></td></tr>
<tr><td rowspan="2">32</td><td rowspan="2">2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)</td><td>US TSCA PBT Rules</td><td>All except articles</td><td>Intentionally added (1)</td><td>Fuel additives, fuel injector cleaners and oil and lubricants</td></tr>
<tr><td colspan="4">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></td></tr>
<tr><td rowspan="2">33</td><td rowspan="2">Pentachlorothiophenol (PCTP)</td><td>US TSCA PBT Rules</td><td>All</td><td>Intentionally added (1)</td><td>Rubber kneading accelerator</td></tr>
<tr><td colspan="4">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></td></tr>
<tr><td rowspan="2">34</td><td rowspan="2">Hexachlorobutadiene (HCBD)</td><td>US TSCA PBT Rules</td><td>All</td><td>Intentionally added (1)</td><td>Solvents, pesticides, hydraulic, heat transfer, or transformer fluid</td></tr>
<tr><td colspan="4">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></td></tr>
</table>

Prohibited Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
35	**C9-C14 PFCAs, their salts and C9-C14 PFCA-related substances (13)**	・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

The above standards shall apply to the items supplied to Nikon after August 25, 2022 (six months prior to the effective date). However, for Exemption (1), the above standards shall be applied from one year prior to the following expiration date of exemptions.

Exemption

(1) The following applications
 (a) Semiconductors on their own; December 31, 2023
 (b) Semiconductors incorporated in semi-finished and finished electronic equipment; December 31, 2023
 (c) Photolithography or etch processes in semiconductor manufacturing; July 4, 2025
 (d) Photographic coatings applied to films; July 4, 2025
 (e) Invasive and implantable medical devices; July 4, 2025
 (f) fire-fighting foam for liquid fuel vapour suppression and liquid fuel fire (Class B fires) already installed in systems, including both mobile and fixed systems, subject to the following conditions; July 4, 2025
 (g) 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;

(i) Containing less than 0.0002% by weight (2,000 ppb) ; Until August 25,2024

(ii) 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; Review this derogation no later than 25 August 2024.

Representative examples of relevant substance

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
Perfluorotetradecanoic acid (PFTDA：C14 PFCA)	376-06-7

Prohibited Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="2">36</td><td rowspan="2">Perfluorohexanesulphonic acid (PFHxS), its salts and PFHxS-related substances</td><td>Annex A(Elimination) of POPs Convention</td><td>All</td><td>Intentionally added (2)</td><td>Carpets, leather, textile, paper, plating,electronic components</td></tr>
<tr><td colspan="4">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></table></td></tr>
<tr><td rowspan="2">37</td><td rowspan="2">Mineral oil aromatic Hydrocarbons (MOAH) comprising 1 to 7 aromatic rings</td><td>Frenchi AGEC Law</td><td>Packaging, Printed matter</td><td>0.1% by weights (1,000ppm) in ink</td><td>Oil used for ink production</td></tr>
<tr><td colspan="4">The above standards shall apply from January 1, 2024 (From one year prior to the effective date).
However, until December 31, 2023, the threshold level is set at "1% by weights (10,000 ppm) in ink".</td></tr>
<tr><td rowspan="2">38</td><td rowspan="2">Mineral oil aromatic hydrocarbons (MOAH) comprising 3 to 7 aromatic rings</td><td>Frenchi AGEC Law</td><td>Packaging, Printed matter</td><td>0.0001% by weights (1ppm) in ink</td><td>Oil used for ink production</td></tr>
<tr><td colspan="4">The above standards shall apply from January 1, 2024 (From one year prior to the effective date).</td></tr>
<tr><td rowspan="2">39</td><td rowspan="2">Mineral oil saturated hydrocarbons (MOSH) with 16 to 35 carbon atoms</td><td>Frenchi AGEC Law</td><td>Packaging, Printed matter</td><td>0.1% by weights (1,000ppm) in ink</td><td>Oil used for ink production</td></tr>
<tr><td colspan="4">The above standards shall apply from January 1, 2024 (From one year prior to the effective date).</td></tr>
<tr><td rowspan="2">40</td><td rowspan="2">Dechlorane Plus</td><td>・Annex A(Elimination) of POPs Convention
・Additional candidate substances to the Canada prohibition of CertainToxic Substances Regulations</td><td>All</td><td>Intentionally added (1)</td><td>Adhesive, sealant, fame retardant, electrical insulation tape</td></tr>
<tr><td colspan="4">The above standards shall apply from November 1, 2024.
However, the start date of application may be postponed depending on circumstances.

Representative examples of relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>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</td><td>13560-89-9</td></tr><tr><td>(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</td><td>135821-74-8</td></tr><tr><td>(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</td><td>135821-03-3</td></tr></table></td></tr>
</table>

Prohibited Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td rowspan="2">41</td><td rowspan="2">2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol（UV-328）</td><td>Annex A(Elimination) of POPs Convention</td><td>All</td><td>Intentionally added (1)</td><td>Ultraviolet absorber, polarizer, anti-reflection film, hologram label</td></tr>
<tr><td colspan="4">The above standards shall apply from November 1, 2024.
However, the start date of application may be postponed depending on circumstances.

Exemption
・ Tri-acetyl cellulose (TAC) film in polarizers

Representative examples of relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>2-(2H-1,2,3-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol（UV-328）</td><td>25973-55-1</td></tr></table></td></tr>
<tr><td rowspan="2">42</td><td rowspan="2">Per- and polyfluoroalkyl substances (PFAS)</td><td>US California AB1817</td><td>Textile articles (14)</td><td>・Intentionally added (1)
・0.01% by weights(100ppm) of total organic fluorine in material</td><td>Water repellent, surface coating</td></tr>
<tr><td colspan="4">The above standards shall apply from January 1, 2024 (From one year prior to the effective date).
The following thresholds shall apply from January 1, 2026 (From one year prior to the effective date).
・0.005% by weights(50ppm) of total organic fluorine in material</td></tr>
</table>

Notes:

(1) Intentionally added:
Intentionally added means that the corresponding substance or compound including the corresponding substance is intentionally added during manufacturing process, etc., irrespective of quantity. Ordinary impurities do not fall under this category. The substance, for which “Intentionally added” is written in its threshold field, must not be intentionally added.

(2) Regulatory thresholds for substances in these applications are based on emission or exposure limits rather than the concentration in the product. The regulatory limit is:

Radioactive substances -a dose rate exceeding 1 μSv h–1 at a distance of 0,1 m

Because emission and exposure levels cannot be derived from actual concentration, 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) 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.

(4) HBCD is also referred to as HBCDD. HBCD and HBCDD are the same substance.

(5) Regulatory thresholds for substances in these applications are based on emission limits.
- ・Hardwood plywood (made with a veneer core or a composite core) － 0.05 ppm
- ・Medium-density fiberboard (MDF) － 0.11ppm
- ・Thin MDF － 0.13ppm
- ・Particleboard － 0.09ppm

(6) However, the use 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.

(7) 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 Reguration.

(8) When PFOAs are contained in mixtures applied to the article, we have determined that the denominator for calculating the concentration may be the total mass of articles and mixtures (after volatilization / after reaction) with reference to "Guidance on requirements for substances in articles" issued by ECHA.
However, this interpretation may be changed due to revisions of laws and regulations.

(9) For equipments used to manufacture semi-conductors, latex printing inks, and medical devices other than implantable medical devices, which were allowed to be excluded for a certain period of time, the exclusion deadline has changed as follows due to the shift from REACH Regulation to POPs Regulation.
- latex printing inks; until 3 Dec 2020
- medical devices other than implantable ones, within the scope of Regulation (EU) 2017/745; until 3 Dec 2020.
- equipments used to manufacture semi-conductors; no exclusion

(10) This PBDEs refer to tetra BDE (tetrabromodiphenyl ether), penta BDE, hexa BDE, hepta BDE, and deca BDE.

(11) "ANNEX XVII Entry 63 of REACH Regulation (EC) No 1907/2006" shall not apply to the following articles. (Refer to the Official Journal of the European Union / COMMISSION REGULATION (EU) 2015/628 for more information.)
(1) Articles placed on the market for the first time before 1 June 2016
(2) Articles within the scope of Directive 2011/65/EU of the European Parliament and of the Council

(12) "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.

(13) The following substances are covered.
(1) Linear and branched perfluorocarboxylic acids of the formula CnF2n +1-C(= O)OH where n = 8, 9, 10, 11, 12, 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 CnF2n +1- directly attached to another carbon atom, where n = 8, 9, 10, 11, 12, or 13, including their salts and any combinations.
(3) Any C9-C14 PFCA-related substance having a perfluoro group with the formula CnF2n +1- that it is not directly attached to another carbon atom, where n = 9, 10, 11, 12, 13 or 14 as one of the structural elements, including their salts and any combinations.The following substances are excluded.
-CnF2n +1-X, where X = F, Cl, or Br
where n = 9, 10, 11, 12, 13 or 14, including any combinations thereof,
-CnF2n +1-C(= O)OX' where n> 13 and X'=any group, including salts.

(14) No.42 in "Textile articles" 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".

Annex 1. Applications exempted from the RoHS Directive Annex III

The following table lists the applications exempted from the RoHS Directive as of October 1, 2023.
As a principle, these applications are exempted from Section I-1, “Prohibited Chemical Substances”.
In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption.
However, 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(a)	For general lighting purposes < 30 W : 2.5mg	Expired on February 24, 2023			
1(b)	For general lighting purposes ≥ 30 W and < 50 W : 3.5mg	Expired on February 24, 2023			
1(c)	For general lighting purposes ≥ 50 W and < 150 W : 5mg	Expired on February 24, 2023			
1(d)	For general lighting purposes ≥ 150 W : 15mg	Expired on February 24, 2023			
1(e)	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm : 7mg	Expired on February 24, 2023			
1(f)-I	For lamps designed to emit mainly light in the ultraviolet spectrum: 5 mg	February 24, 2027			
1(f)-II	For special purposes : 5mg	February 24, 2025			
1(g)	For general lighting purposes < 30 W with a lifetime equal or above 20,000 h : 3.5mg	Expired on August 24, 2023			
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):				
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2) : 4mg	Expired on February 24, 2023			
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5) : 3mg	Expired on February 24, 2023			
2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8) : 3.5mg	Expired on February 24, 2023			
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12) : 3.5mg	Expired on February 24, 2023			
2(a)(5)	Tri-band phosphor with long lifetime (≥ 25,000 h) : 5mg	Expired on February 24, 2023			
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):				
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9) : 15mg	Expired on February 24, 2023			
	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9) : 10mg	February 24, 2023 – February 24, 2025			
2(b)(4)-I	Lamps for other general lighting and special purposes (e.g. induction lamps) : 15mg	February 24, 2025			
2(b)(4)-II	Lamps emitting mainly light in the ultraviolet spectrum: 15 mg	February 24, 2027			
2(b)(4)-III	Emergency lamps: 15 mg	February 24, 2027			

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)
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes used in EEE placed on the market before 24 February 2022 not exceeding (per lamp):				
3(a)	Short length (≤ 500 mm) : 3.5mg	February 24, 2025			
3(b)	Medium length (> 500 mm and ≤ 1,500 mm) : 5mg	February 24, 2025			
3(c)	Long length (> 1,500 mm) : 13mg	February 24, 2025			
4(a)	Mercury in other low pressure discharge lamps (per lamp) : 15mg	Expired on February 24, 2023			
4(a)-I	Mercury in low pressure non-phosphor coated discharge lamps, where the application requires the main range of the lamp-spectral output to be in the ultraviolet spectrum: up to 15 mg mercury may be used per lamp	February 24, 2027			
4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 80: P ≤ 105 W: 16 mg may be used per burne	February 24, 2027			
4(b)-I	P ≤ 155W： 30mg	Expired on February 24, 2023			
4(b)-II	155W < P ≤ 405W： 40mg	Expired on February 24, 2023			
4(b)-III	405W < P： 40mg	Expired on February 24, 2023			
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):				
4(c)-I	P ≤ 155 W : 20mg	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	February 24, 2025			
4(f)-II	Mercury in high pressure mercury vapour lamps used in projectors where an output ≥ 2000 lumen ANSI is required	February 24, 2027			
4(f)-III	Mercury in high pressure sodium vapour lamps used for horticulture lighting	February 24, 2027			
4(f)-IV	Mercury in lamps emitting light in the ultraviolet spectrum	February 24, 2027			
5(a)	Lead in glass of cathode ray tubes	Expired on July 21, 2016	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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	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)	Pending	Pending	Pending
6(a)-I	Lead as an alloying element in steel for machining purposes containing up to 0,35 % lead by weight and in batch hot dip galvanised steel components containing up to 0,2 % lead by weight	Pending			
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)	Pending	Pending	Pending
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	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)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4 % by weight	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)	Pending	Pending	Pending	Pending
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	Expired on July 21, 2016	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	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	Pending	Pending	Pending	Pending
7(c)-III	For spare parts 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			
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors	Expired on July 21, 2021	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
8(a)	For spare parts 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	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	March 5, 2020 (Shifted to 9(a)-I, Ⅱ)	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
9(a)-II	Up to 0,75 % hexavalent chromium by weight, used as an anticorrosion agent in the cooling solution of carbon steel cooling systems of absorption refrigerators: —designed to operate fully or partly with electrical heater, having an average utilised power input ≧75 W at constant running conditions, —designed to fully operate with non-electrical heater.	Pending			
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications		Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024

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 mm2 or larger in any semiconductor technology node; - stacked die packages with die of 300 mm2 or larger, or silicon interposers of 300 mm2 or larger.	Pending			
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications		Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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 ($BaSi_2O_5$:Pb)	Pending	Pending	Expired on July 21, 2023	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 (BaSi2O5:Pb) when used in medical phototherapy equipment	(Cat.5) Pending	(Cat. 8) Pending	Expired on July 21, 2021	
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	February 29, 2020 (Shifted to 21(a)-(c))	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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

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)
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring		Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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	July 21, 2024
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more		Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)		Expired on July 21, 2021	Expired on July 21, 2023	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
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers		Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
34	Lead in cermet-based trimmer potentiometer elements	Pending	Pending	Pending	Pending
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	Expired on July 21, 2021	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide		Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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)	Pending	Pending	Pending	Pending
41	Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council	Expired on March 31, 2022	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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.				

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)
43 (Cat.11)	Bis(2-ethylhexyl) phthalate in rubber components in engine systems, designed for use in equipment that is not intended solely for consumer use and provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin and the concentration value of bis(2-ethylhexyl) phthalate does not exceed: (a) 30 % by weight of the rubber for (i) gasket coatings; (ii) solid-rubber gaskets; or (iii) rubber components included in assemblies of at least three components using electrical, mechanical or hydraulic energy to do work, and attached to the engine. (b) 10 % by weight of the rubber for rubber-containing components not referred to in point (a). For the purposes of this entry, “prolonged contact with human skin” means continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day.				
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				

Notes:

(1) Expiration date in Category 11 is in principle “July 21, 2024”, five years after the start of application. And the expiration date in the newly added No.45 is “April 20,2026”.

(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, so 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 October 1, 2023. As a principle, these applications are exempted from Section I-1, “Prohibited Chemical Substances”. In principle, the prohibited dates of delivery to Nikon Group will be six months before the expiration dates of exemption.
However, 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	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
6	Lead in X-ray test objects	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
7	Lead stearate X-ray diffraction crystals	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
8	Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
	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
1d	Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
	Others			
9	Cadmium in helium-cadmium lasers	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
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	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	July 21, 2024
14	Lead in single crystal piezoelectric materials for ultrasonic transducers	Pending	Expired on July 21, 2023	July 21, 2024
15	Lead in solders for bonding to ultrasonic transducers	Pending	Expired on July 21, 2023	July 21, 2024

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)
16	Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
17	Lead in solders in portable emergency defibrillators	Pending	Expired on July 21, 2023	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	July 21, 2024
19	Lead in Liquid crystal on silicon (LCoS) displays	Expired on July 21, 2021	Expired on July 21, 2023	July 21, 2024
20	Cadmium in X-ray measurement filters	Pending	Expired on July 21, 2023	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
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	Pending	Expired on June 30, 2021
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	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			
35	Mercury in cold cathode fluorescent lamps for back-lighting liquid crystal displays, not exceeding 5 mg per lamp, used in industrial monitoring and control instruments placed on the market before 22 July 2017.			July 21, 2024
36	Lead used in other than C-press compliant pin connector systems in spare parts for industrial monitoring and control instruments placed on the market before January 1, 2021.			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)
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.	December 31, 2025	December 31, 2025	December 31, 2025
38	Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in spare parts 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 spare parts 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.	July 30, 2026		
43	Cadmium anodes in Hersch cells for oxygen sensors used in industrial monitoring and control instruments, where sensitivity below 10ppm is required.			Expired on July 15, 2023
44	Cadmium in radiation tolerant video camera tubes designed for cameras with a centre resolution greater than 450 TV lines which are used in environments with ionising radiation exposure exceeding 100 Gy/hour and a total dose in excess of 100kGy.	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	

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)
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	December 31, 2025 (Category 9)		December 31, 2025

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, so it is "Pending".

I-2. Controlled Chemical Substances

Sections I-2-(1) and I-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 I-2-(1).

I-2-(1) Controlled Chemical Substances

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td>1</td><td>Candidate substances for authorization of REACH Regulation (SVHC)

Refer to the SVHC list in I-2-(2).</td><td>Article 33 of REACH Regulation (EC) No 1907/2006</td><td>All</td><td>0.1% by weight (1,000 ppm) in a part or material (5)</td><td></td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Beryllium oxide (BeO)</td><td>EU WEEE Directive 2002/96/EC</td><td>All</td><td>0.1% by weight (1,000 ppm) in a part</td><td>Ceramics</td></tr>
<tr><td colspan="4">Relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Beryllium oxide (BeO)</td><td>1304-56-9</td></tr></table></td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">Brominated flame retardants (other than PBBs, PBDEs, or HBCDD)</td><td>JS709</td><td>Plastic materials except laminated printed board (1)</td><td>0.1% total bromine content by weight (1,000 ppm) in plastic material</td><td>Flame retardant for housing, connector, package molding sealing</td></tr>
<tr><td>・IPC-4101
・IEC61249-2-21</td><td>Laminated printed board (1)</td><td>0.09% total bromine content by weight (900 ppm) in a laminated board</td><td>Flame retardant</td></tr>
<tr><td colspan="4">Representative examples of relevant substance
<table><tr><th>Substance name</th><th>CAS No.</th></tr><tr><td>Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]</td><td>—</td></tr><tr><td>Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]</td><td>—</td></tr><tr><td>Brominated flame retardant which comes under notation of ISO 1043-4
code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls)]</td><td>—</td></tr><tr><td>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]</td><td>—</td></tr><tr><td>Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]</td><td>—</td></tr><tr><td>Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]</td><td>—</td></tr><tr><td>Poly(2,6-dibromo-phenylene oxide)</td><td>69882-11-7</td></tr><tr><td>Tetra-decabromo-diphenoxy-benzene</td><td>58965-66-5</td></tr><tr><td>1,2-Bis(2,4,6-tribromo-phenoxy) ethane</td><td>37853-59-1</td></tr><tr><td>3,5,3',5'-Tetrabromo-bisphenol A (TBBA)</td><td>79-94-7</td></tr></table></td></tr>
</table>

	Brominated flame retardants (other than PBBs, PBDEs, or HBCDD) (conitinued)	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
		Bis(2-ethylhexyl)tetrabromo-phthalate	26040-51-7
		2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP	20566-35-2
		TBPA, glycol-and propylene-oxide esters	75790-69-1
		N,N'-Ethylene –bis-(tetrabromo-phthalimide)	32588-76-4
		Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	52907-07-0
		2,3-Dibromo-2-butene-1,4-diol	3234-02-4
		Dibromo-neopentyl-glycol	3296-90-0
		Dibromo-propanol	96-13-9
		Tribromo-neopentyl-alcohol	36483-57-5
		Poly tribromo-styrene	57137-10-7
		Tribromo-styrene	61368-34-1
		Dibromo-styrene grafted PP	171091-06-8
		Poly-dibromo-styrene	31780-26-4
		Bromo-/Chloro-paraffins	68955-41-9
		Bromo-/Chloro-alpha-olefin	82600-56-4
		Vinylbromide	593-60-2
		Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9
		Tris(2,4-Dibromo-phenyl) phosphate	49690-63-3
		Tris(tribromo-neopentyl) phosphate	19186-97-1
		Chlorinated and brominated phosphate ester	125997-20-8
		Pentabromo-toluene	87-83-2
		Pentabromo-benzyl bromide	38521-51-6
		1,3-Butadiene homopolymer, brominated	68441-46-3
		Pentabromo-benzyl-acrylate, monomer	59447-55-1
		Pentabromo-benzyl-acrylate, polymer	59447-57-3
		Decabromo-diphenyl-ethane	84852-53-9
		Tribromo-bisphenyl-maleinimide	59789-51-4
		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			
		Substance name: Tetrakis(2-chloroethyl) dichloroisopentyldiphosphate — CAS No.: 38051-10-4			
		Substance name: Tris(1-chloro-2-propyl) phosphate — CAS No.: 13674-84-5			
		Substance name: Tris(2,3-dichloro-1-propyl) phosphate — CAS No.: 66108-37-0			
5	**Nickel(4)/Nickel compounds**	ANNEX XVII Entry 27 of REACH Regulation (EC) No 1907/2006	All, where prolonged skin contact is expected (4)	Intentionally added (2), (3)	Stainless steel, plating (Example application for prolonged skin contact: headphone)
		Representative examples of relevant substance			
		Substance name: Nickel — CAS No.: 7440-02-0			
		Substance name: Nickel(II) sulfate hexahydrate — CAS No.: 10101-97-0			
		Substance name: Nickel oxide — CAS No.: 11099-02-8			
		Substance name: Nickel dihydroxide — CAS No.: 12054-48-7			
6	**Perchlorates**	US/ California Perchlorate Contamination Prevention Act of 2003	All	0.0000006% by weight (0.006 ppm) of the product	Coin cell batteries
		Representative examples of relevant substance			
		Substance name: Lithium perchlorate — CAS No.: 7791-03-9			
7	**Diisodecycl phthalate (DIDP)**	・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) in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant
		Relevant substances			
		Substance name: Diisodecycl phthalate (DIDP) — CAS No.: 26761-40-0, 68515-49-1			
8	**Diisononyl phthalate (DINP)**	・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) in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant
		Relevant substances			
		Substance name: Diisononyl phthalate (DINP) — CAS No.: 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) in plasticized material	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant
		Relevant substances Substance name: Di-n-octyl phthalate (DNOP) — CAS No.: 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: Polyvinyl chloride (PVC) — CAS No.: 9002-86-2			
11	**Perfluorohexanoic acid (PFHxA), its salts and PFHxA-related substances**	Additional candidate substances to ANNEX XVII of REACH Regulation (EC) No 1907/2006	All	・Intentionally added(2) ・0.0000025% by weight (25 ppb) of PFHxA including its salts in a mixture or an article ・0.0001% by weight (1ppm, 1000ppb) of one or a combination of PFHxA-related substances in a mixture or an article	Carpets, leather, textile, paper, plating, electronic components
		Representative examples of relevant substance			
		Perfluorohexanoic acid (PFHxA) Undecafluorohexanoic acid — CAS No.: 307-24-4 Sodium perfluorohexanoate — CAS No.: 2923-26-4 Ammonium perfluorohexanoate — CAS No.: 21615-47-4			
12	**Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals**	US TSCA Significant New Use Rule (SNUR)	Surface coating of articles	Intentionally added (2)	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist
		Relevant substances			
		Perfluorooctyl iodide (Octane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8- heptadecafluoro-8-iodo-) — CAS No.: 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-) — CAS No.: 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-heneicosafluoro-) — CAS No.: 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-) — CAS No.: 2043–53–0			

Controlled Chemical Substances (continued)

<table>
<tr><th>No.</th><th>Substance/ Category</th><th>Key Legal and Regulatory or Industry Standard</th><th>Application(s)</th><th>Threshold Level</th><th>Examples of Use</th></tr>
<tr><td>12</td><td>Long-chain perfluoroalkyl carboxylate (LCPFACs) and perfluoroalkyl sulfonate chemicals</td><td colspan="4">
<table>
<tr><td>1,1,2,2-Tetrahydroperfluorododecyl Iodide
(Dodecane,1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafluoro-12-iodo-)</td><td>2043–54–1</td></tr>
<tr><td>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-heneicosafluorododecyl ester)</td><td>17741–60–5</td></tr>
<tr><td>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)</td><td>27905–45–9</td></tr>
<tr><td>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-Pentacosafluoro -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-pentacosafluoro-14-iodo-)</td><td>30046–31–2</td></tr>
<tr><td>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-Pentacosafluorotetradecan-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-pentacosafluoro-)</td><td>39239–77–5</td></tr>
<tr><td>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-Nonacosafluorohexadecan-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-nonacosafluoro-)</td><td>60699–51–6</td></tr>
<tr><td>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-Nonacosafluoro-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-nonacosafluoro-16-iodo-)</td><td>65510–55–6</td></tr>
<tr><td>Sodium;2-methylpropane-1-sulfonate
(1-Propanesulfonic acid, 2-methyl-, 2-[[1-oxo-3-[(γ-ω-perfluoro- C4−16-alkyl)thio]propyl]amino] derivs.)</td><td>68187–47–3</td></tr>
<tr><td>1,1,2,2-Tetrahydroperfluoroalkyl (C8–C14) alcohol
(Alcohols, C8−14, γ-ω- perfluoro)</td><td>68391–08–2</td></tr>
<tr><td>Thiols, C8–20, γ-ω-perfluoro, telomers with acrylamide</td><td>70969–47–0</td></tr>
<tr><td>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)</td><td>125476–71–3</td></tr>
<tr><td>Thiols, C4–20, γ-ω-perfluoro, telomers with acrylamide and acrylic acid, sodium salts</td><td>1078712–88–5</td></tr>
<tr><td>1-Propanaminium, 3-amino-N- (carboxymethyl)-N,N-dimethyl-, N-(2-((γ-ω-perfluoro-C4–20- alkyl)thio)acetyl) derivs., inner salts</td><td>1078715–61–3</td></tr>
<tr><td>Polyfluoroalkyl betaine (generic)
(Polyfluoroalkyl betaine (PROVISIONAL).)</td><td>EPA accession number [6] 71217</td></tr>
<tr><td>Modified fluoroalkyl urethane (generic)
(Modified fluoroalkyl urethane (PROVISIONAL))</td><td>EPA accession number [6] 89419</td></tr>
<tr><td>Perfluorinated polyamine (generic)
(Perfluorinated polyamine (PROVISIONAL))</td><td>EPA accession number [6] 274147</td></tr>
</table>
</td></tr>
<tr><td>13</td><td>C.I.Pigment Violet 29
(PV29)</td><td>US TSCA Risk Evaluation Substances</td><td>All</td><td>Intentionally added [2]</td><td>Paint, pigment</td></tr>
<tr><td></td><td></td><td colspan="4">Relevant substances
<table>
<tr><th>Substance name</th><th>CAS No.</th></tr>
<tr><td>C.I. Pigment Violet 29 (PV29)</td><td>81-33-4</td></tr>
</table>
</td></tr>
<tr><td>14</td><td>Tetrabromo Bisphenol A（TBBPA）</td><td>Additional candidate substances to Annex II of the EU RoHS Directive</td><td>All</td><td>Intentionally added [2]</td><td>Flame retardant</td></tr>
<tr><td></td><td></td><td colspan="4">Relevant substances
<table>
<tr><th>Substance name</th><th>CAS No.</th></tr>
<tr><td>Tetrabromobisphenol A（TBBPA）</td><td>79-94-7</td></tr>
</table>
</td></tr>
</table>

Controlled Chemical Substances (continued)

No.	Substance/ Category	Key Legal and Regulatory or Industry Standard	Application(s)	Threshold Level	Examples of Use
15	**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]**	Additional candidate substances to Annex A (Elimination) of POPs Convention	All	Intentionally added (2)	Flame retardant resin materials
		Representative examples of relevant substance Substance name: Chloroalkanes(C=14-17) — CAS No.: 85535-85-9			
16	**Per- and polyfluoroalkyl substances (PFAS)**	・US TSCA ・U.S. Maine LD1503	All	Intentionally added (2)	Water repellent, extinguishing agents,surface coating,lubricant

Representative examples of relevant substance

Substance name	CAS No.
6:2 Fluorotelomer sulfonamide betaine	34455-29-3
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Perfluorobutanesulfonyl fluorid	375-72-4
Nonafluoro-1-iodobutane	423-39-2
Perfluoro(4-methyl-3,6-dioxaoct-7-ene)sulfonyl fluoride	16090-14-5
Methyl perfluoro-3-[(perfluoro-3-oxopropan-2- yl)oxy]propanoate	69116-72-9
Perfluorooctanesulfonyl fluoride	307-35-7
1H,1H,2H-Perfluorocyclopentane	15290-77-4
Trifluoro(trifluoromethyl)oxirane	428-59-1
Perfluoro(N-methylmorpholine)	382-28-5
3-(Perfluorohexyl)-1,2-epoxypropane	38565-52-5
3-Methyl-3-[[(3,3,4,4,5,5,6,6,6-nonafluorohexyl)oxy]methyl]-oxetane	475678-78-5
2,3,3,3-Tetrafluoro-2-(trifluoromethyl)propanenitrile	42532-60-5
Perfluoropropyl trifluorovinyl ether	1623-05-8
2,3,3,3-Tetrafluoro-2-(perfluoroethoxy)propanoyl fluoride	1682-78-6
Hexafluoroamylene glycol	376-90-9
3,3,4,4,5,5,6,6,6-Nonafluorohexane-1-sulphonyl chloride	27619-88-1
1H,1H,5H-Perfluoropentanol	355-80-6
Perfluoro(2-methyl-3-oxahexanoyl) fluoride	2062-98-8
2H-Perfluoro-5-methyl-3,6-dioxanonane	3330-14-1
Perfluorohexane	355-42-0
Octafluorocyclobutane	115-25-3
Perflunafene	306-94-5
2:1 Fluorotelomer alcohol	422-05-9

17	**Decabromodiphenyl ethane (DBDPE)**	Additional candidate substances to the Canada prohibition of Certain Toxic Substances Regulations	All	Intentionally added (2)	Flame retardant

Representative examples of relevant substance

Substance name	CAS No.
Decabromodiphenyleth ane (DBDPE)	84852-53-9

18	**4'-Isopropylidenediphenol (Bisphenol A, BPA) and bisphenols of similar concern**	Additional candidate substances to ANNEX XVII of REACH Regulation (EC) No 1907/2006	All	Intentionally added (2)	Resin materials, PVC additives

Representative examples of 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
2,2-Bis(4-hydroxyphenyl)hexafluoropropane (Bisphenol AF)	1478-61-1

Notes:

(1) A laminated printed wiring board refers to the layered board materials excluding surface finishing and components

(2) Intentionally added: It means that the corresponding substance or compound including the corresponding substance is intentionally added during manufacturing process, etc., irrespective of quantity.
Ordinary impurities do not fall under this category.
The substance, for which “Intentionally added” is written in its threshold field, must not be intentionally added.

(3) 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/cm^2/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.

(4) 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.

(5) According to the judgement of European Court of Justice on September 2015, in principle the denominator of the threshold (control value) would be a part or material constituting the product.

(6) CAS number of these substances is not disclosed due to CBI (confidential business information).

I-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 October 1, 2023. Refer to the following ECHA website for the latest SVHCs information.

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 I-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	247-148-4 221-695-9 — — —	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	Flame retarder	PCS No.23
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, distn. 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, ectrolyte 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, adhesive, plastic stabilizer	
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		
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]cyclohexa-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	Pentacosafluorotridecanoic acid	276-745-2	72629-94-8	Fluorochemical surfactant	PCS No.35
87	Tricosafluorododecanoic acid	206-203-2	307-55-1		
88	Henicosafluoroundecanoic acid	218-165-4	2058-94-8		
89	Heptacosafluorotetradecanoic 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 ($H_2Si_2O_5$), 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 cynamidate	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	Perfluorononan-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 ≧ 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	Dioctyltin 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		
	Dioctyltin 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		
	Phenol, tetrapropylene-	—	57427-55-1		
213	Orthoboric acid, sodium salt	—	—	Solvent, corrosion inhibitor	
	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		
	Orthoboric acid, sodium salt	237-560-2	13840-56-7		
	Boric acid (H3BO3), sodium salt (1:1)	—	14890-53-0		
214	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	—	—	Chlorinated flame retardants, flame retardant plasticizers, sealant, rubber, textile, thermoplastic, paint, varnish	
	Alkanes, C14-16, chloro	—	1372804-76-6		
	Alkanes, C14-17, chloro	287-477-0	85535-85-9		
	di-, tri- and tetrachlorotetradecane	950-299-5	950-299-5		
	Tetradecane, chloro derivs	—	198840-65-2		
215	Glutaral	203-856-5	111-30-8	Biocide, leather tanning, X-ray film developing process, cosmetic	
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-diylbisoxy]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	

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 (Na2O+K2O+CaO+MgO+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 (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight

(4) Those substances are identified as SVHCs in case [with ≧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).

II. Manufacturing Processes

II-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, please do not use the chemical substances listed in II-1-(1)-(5) below.

II-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.

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

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

II-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	Bistributyltin 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	2,2,2-trichloro-1,1-bis(4-chlorophenyl) ethanol (also know as kelthane or dicofol)	Mitcide
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	(1alpha,2alpha,3beta,4alpha,5beta,6beta)-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
34	10606-46-9	2,2,2-trichloro-1-(2-chlorophenyl)-1-(4-chlorophenyl) ethanol -	Pesticide, insecticide

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

No.	CAS No.	Substance name	Example of use
35	335-67-1 3825-26-1 335-95-5 2395-00-8	Perfluorooctanoic acid, its salts	Extinguishing agent, water repellent, surface-active agent, anti-rust, etching solution, antireflection coating, photoresist

II-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.	

II-1-(5) Other

No.	CAS No.	Substance name
1	-	Perfluorohexane-1-sulphonicacid (PFHxS), its salts and PFHxS-related substances

II-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 II-2-(1) to II-2-(3) below under appropriate control.

II-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

II-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

II-2-(3) Others

No	CAS No.	Substance name
1	-	Perfluorohexanoic acid (PFHxA), its salts and PFHxA-related substances

Revision History		
Date	**Edition**	**Description**
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.
April 1, 2014	1.1	Based on the revision of the Japan Law concerning the evaluation of chemical substances of March 19, 2014, Endosulfan and HBCD are specified as Class I specified Chemical Substances, and some modifications are made as follows. - some changes to the items mentioned in No.23 HBCD of Ⅰ-1-(1) Prohibited Chemical Substances in Products - some changes to the items mentioned in No.15 HBCD of Ⅱ-1 Prohibited Chemical Substances in Packaging Materials - Endosulfan and HBCD are added, as No.29 and No.30, into the list of Ⅲ-1-(2) Class I specified Chemical Substances under “Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances”
October 1, 2014	1.2	- Changed descriptions of the following items of Ⅰ-1- (1) Prohibited Chemical Substances in Products. ·No.3 Lead/lead compounds ··· Threshold Level and Exempted applications ·No.19 Polyvinyl chloride (PVC) & PVC Copolymers ··· Exempted applications ·No.24 Pentadecafluorooctanoic acid (PFOA) ··· Threshold Level - Added No.4(g) and 41 to Ⅰ-1- (1) Annex 1 "Applications exempted from the RoHS Directive Annex Ⅲ". - Added No.35,36,37,38,39,40 to Ⅰ-1- (1) Annex 2 "Applications exempted from the RoHS Directive Annex Ⅳ", and also corrected No.1d in the same Annex 2. - Changed descriptions of the following item of Ⅰ-2- (1) Controlled Chemical Substances in Products. ·No.16 Fluorinated greenhouse gases (HFC, PFC, SF_6) ··· Key Legal and Regulatory or Industry Standard/Agreement Citation, and, gas and products to be prohibited - Added No.36 Polycyclic-aromatic hydrocarbons (PAH) to Ⅰ-2- (1) Controlled Chemical Substances in Products. - Added four substances to Ⅰ-2-(2) and Ⅱ-2-(2) of "SVHCs in REACH" respectively. - Changed descriptions of the following item of Ⅱ-1 Prohibited Chemical Substances in Packaging Materials. ·No.12 Polyvinyl chloride (PVC) ··· Substance/Category, Key Legal and Regulatory or Industry Standard/Agreement Citation, Application(s), Threshold Level, and Exempted applications

April 1, 2015	1.3	- Changed descriptions in Ⅰ-1- (1) Prohibited Chemical Substances in Products as follows. ·No.2 Chromium VI compounds ･･･ Added a new regulation ·No.25 Polycyclic-aromatic hydrocarbons (PAH) ･･･ Added as a new item (transferred from Ⅰ-2- (1)) - Deleted No.36 Polycyclic-aromatic hydrocarbons (PAH) in Ⅰ-2- (1) Controlled Chemical Substances in Products. - Added six substances to Ⅰ-2-(2) and Ⅱ-2-(2) of "SVHCs in REACH" respectively. - Changed opening descriptions of Ⅰ-1, Ⅰ-2, Ⅰ-2-(2), Ⅱ-1, Ⅱ-2, Ⅱ-2-(2) respectively.
May 15, 2015	1.4	- Added the following item to Ⅰ-1- (1) Prohibited Chemical Substances in Products. ·No.26 Benzenamine, *N*-phenyl-,reaction products with styrene and 2,4,4-trimethylpentene (BNST)
October 1, 2015	1.5	- Added No.27 Selected four Phthalates to Ⅰ-1- (1) Prohibited Chemical Substances in Products. - Deleted the following five items in Ⅰ-2- (1) Controlled Chemical Substances in Products. ·No.24 Bis (2-ethylhexyl) phthalate (DEHP) ·No.25 Dibutyl phthalate (DBP) ·No.26 Benzyl butyl phthalate (BBP) ·No.27 Diisobutyl phthalate (DIBP) ·No.28 Selected Phthalates Group 1 (BBP, DBP, DEHP) - Deleted No.4(d) in Ⅰ-1- (1) Annex 1 "Applications exempted from the RoHS Directive Annex Ⅲ". - Added No.41,42 to Ⅰ-1- (1) Annex 2 "Applications exempted from the RoHS Directive Annex Ⅳ". - Added two substances to Ⅰ-2-(2) and Ⅱ-2-(2) of "SVHCs in REACH" respectively.
December 1, 2015	1.6	- Changed descriptions in Ⅰ-1- (1) Prohibited Chemical Substances in Products as follows. ·No.3 Lead/lead compounds ･･･ Added a new regulation
December 15, 2016	1.7	- Changed descriptions in Ⅰ-1- (1) Prohibited Chemical Substances in Products as follows ·No.9 Polychlorinated naphthalenes(Changed 3 chlorine atoms to 2) ·No.10 Shortchain chlorinated paraffins ·No.12 Tributyl tin oxide ·No.23 Hexabromocyclododecane ·No.24 Pentadecafluorooctanoic acid ·No.25 Polycyclic-aromatic hydrocarbons ·No.27 Selected four Phthalates - Changed and added the dates of applicability in Ⅰ-1- (1) Annex 1" Applications exempted from the RoHS Directive Annex III" - Changed and added the dates of applicability in Ⅰ-1- (1) Annex 2 "Applications exempted from the RoHS Directive Annex IV" - Added note No.8 in some of threshold level and deleted the following items in I-2-(1) Controlled Chemical Substances in Products ·No.18 Lead chromate ·No.19 Lead chromate molybdate sulphate red ·No.20 Lead sulfochromate yellow ·No.22 Pentazinc chromate octahydroxide ·No.25 Potassium hydroxyoctaoxodizi ncate dichromate ·No.28 Strontium chromate - Added six substances to Ⅰ-2-(2) and Ⅱ-2-(2) of "SVHCs in REACH" respectively and changed some explaination and added the remarks column. - Changed descriptions in Ⅱ-1- (1) Prohibited Chemical Substances in Packaging Materials as follows ·No.4 Polychlorinated naphthalenes(Changed 3 chlorine atoms to 2) ·No.5 Shortchain chlorinated paraffins ·No.7 Tributyl tin oxide

		・No.15　Hexabromocyclododecane ・No.16　Pentadecafluorooctanoic acid -Deleted No.28 Trilead diarsenate in Ⅱ-2-(1) Controlled Chemical Substances in Packaging Materials - Added No.31 Pentachlorophenol and its salts and esters to Ⅲ-1-(2) “Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances
April 1, 2018	1.8	-Integration of “Ⅰ.Products” and “Ⅱ.Packaging Materials”. -Changed "Prohibited Chemical Substances in products" to "Prohibited Chemical Substances" -Changed "Controlled Chemical Substances in products" to "Controlled Chemical Substances" -Changed descriptions in Ⅰ-1- (1) Prohibited Chemical Substances as follows ・Changed contents of No.10 “Shortchain chlorinated paraffins” ・Deleted No.26 “Benzenamine, N-phenyl-,reaction products with styrene and 2,4,4-trimethylpentene (BNST)” because it was deleted from the list of Canada Prohibition of Certain Toxic Substances Regulations, 2012. ・Added No.27 “Formaldehyde” (changed from “Controlled Chemical Substances in Packaging Materials” to “Prohibited Chemical Substances”) ・Added No.28 “Arsenic Compounds” (changed from “Controlled Chemical Substances in Packaging Materials” to “Prohibited Chemical Substances”) -Revised the expiration dates and notes in Ⅰ-1- (1) Annex 1" Applications exempted from the RoHS Directive Annex III" -Deleted Ⅰ-1- (3) Prohibited Chemical Substances in Optical Materials -Changed descriptions in Ⅰ-2- (1) Controlled Chemical Substances as follows ・Deleted substances listed in I-2- (2) SVHC of REACH Regulation and integrated them to No.1 “Candidate substances for authorization of REACH Regulation (SVHC)” ・Changed denominator of threshold and its notes in SVHC -Added four substances of 16th SVHC, one substance of 17th SVHC and seven substances of 18th SVHC to Ⅰ-2- (2) SVHCs of REACH Regulation -Added examples of use and changed some contents of remarks column in Ⅰ-2- (2) SVHCs of REACH Regulation -Added No.12 “Chloroethylene” to Ⅱ-2-(2) “Class I designated Hazardous Substances in the Soil Contamination Countermeasures Law”
April 1, 2019	1.9	-Changed descriptions in I -1- (1) Prohibited Chemical Substances as follows ・Changed contents of No.1 “Cadmium/cadmium compounds” ・Changed contents of No.2 “Chromium VI compounds” ・Changed contents of No.3 “Lead/lead compounds” ・Changed contents of No.19 “Polyvinyl chloride (PVC) & PVC Copolymers” ・Changed contents of No.20 “Perfluorooctane sulfonate (PFOS)” ・Changed contents of No.23 “Hexabromocyclododecane (HBCD) and all major diastereoisomers” ・Changed contents of No.24 “Pentadecafluorooctanoic acid (PFOA)” ・Changed contents of No.26 “Selected four Phthalates” ・Changed contents of No.28 “Arsenic Compounds” ・Added No.29 “Fluorinated greenhouse gases (HFC, PFC,SF6)” (changed from “Controlled Chemical Substances in Packaging Materials” to “Prohibited Chemical Substances”) -Updated the expiration dates and notes in I -1- (1) Annex 1" Applications exempted from the RoHS Directive Annex III" -Changed descriptions in I -2- (1) Controlled Chemical Substances as follows ・Deleted No.8 “Selected Phthalates Group 2 (DIDP, DINP, DNOP)” ・Added No.7 “Diisodecycl phthalate (DIDP)” ・Added No.8 “Diisononyl phthalate (DINP)” ・Added No.9 “Di-n-octyl phthalate (DNOP)” ・Added No.10 “Polyvinyl chloride (PVC) / PVC compounds” -Added 8 substances of 19th SVHC (Separately 2 substances added), 6 substances of 20th SVHC to “Ⅰ-2- (2) SVHCs of REACH Regulation” -Added the following two substances to Ⅱ-1-(2) “Class I specified Chemical Substances

		under the Chemical Substances Control Law ” ・No.32 “Chloroalkanes C10-13” ・No.33 “1,1’-oxybis(2,3,4,5,6-pentabromo-benzen (Decabromodiphenyl oxide) -Added Ⅱ-2-(3) “Others” ・No.1 “Pentadecafluorooctanoic acid (PFOA), Its salts and PFOA-related substances” ・No.2 “Perfluorohexane-1-sulphonicacid (PFHxS), its salts and PFHxS-related substances”
April 1, 2020	2.0	-Changed contents of I -1- (1) Prohibited Chemical Substances (No.11,13,14,20,21,24). -Updated the expiration dates in I -1- (1) Annex 1" Applications exempted from the RoHS Directive Annex III" and added No.42-44. -Updated the expiration dates in I -1- (1) Annex 2" Applications exempted from the RoHS Directive Annex IV ". -Added I -2- (1) Controlled Chemical Substances No.11 “Perfluorohexane-1-sulphonicacid (PFHxS), its salts and PFHxS-related substances”. -Added 4 substances of 21th SVHC and 4 substances of 22th SVHC to “I -2- (2) SVHCs of REACH Regulation”. -Deleted “Ⅲ. Others” and “Ⅲ−1. Chemical Substances in Equipment and Tools (either General Purpose or Exclusive)”.
November 1, 2020	2.1	-Changed contents of I -1- (1) Prohibited Chemical Substances (No.6,24,25,27,29). -Added I -1- (1) Prohibited Chemical Substances No30 “CMR substances listed in Annex XVII of REACH Regulation (Excluding substances already listed as prohibited chemical substances)”. -Updated the expiration dates in I -1- (1) Annex 1" Applications exempted from the RoHS Directive Annex III". -Updated the expiration dates in I -1- (1) Annex 2" Applications exempted from the RoHS Directive Annex IV " and added No43-44. -Added Perfluorohexanoic acid (PFHxA), its salts and PFHxA-related substances” to I -2- (1) Controlled Chemical Substances No.12 and Ⅱ-2-(3) “Others” No.3. -Added 4 substances of 23th SVHC to “I -2- (2) SVHCs of REACH Regulation”
November 1, 2021	2.2	-Revised and added contents of I -1.Prohibited Chemical Substances (No.1-4,6,24). -Added No31-35 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 I-1-(2) Prohibited Chemical Substances in Batteries. -Added No.13-15 of I -2- (1) Controlled Chemical Substances. -Added 2 substances of 24th SVHC and 8 substances of 25th SVHC in “I -2- (2) SVHCs of REACH Regulation”. -Added No.34 and 35 in II-1-(2) Class I specified Chemical Substances under the Chemical Substances Control Law. -Deleted No.1“Pentadecafluorooctanoic acid (PFOA), Its salts and PFOA-related substances” of Ⅱ-2-(3) “Others”.
November 1,2022	2.3	-Revised and added contents of I -1.Prohibited Chemical Substances (No.3,24-27,31). -Added No36-37 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.11 of I -2- (1) Controlled Chemical Substances. -Added No.15-19 of I -2- (1) Controlled Chemical Substances. -Added 4 substances of 26th SVHC and 1 substance of 27th SVHC in “I -2- (2) SVHCs of REACH Regulation”. -Added “PFHxS” of II-1-(5) “Others”. -Deleted “PFHxS” of II-2-(3) “Others”. -Added explanation of changes after April 2023 for II-2-(1) regulated substances.

December 1 ,2023	2. 4	-Revised and added contents of I -1. Prohibited Chemical Substances (No.1-4,26,31,35,36,37). -Added No38-42 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.12,17,19 of I -2- (1) Controlled Chemical Substances. -Added No.17,18 of I -2- (1) Controlled Chemical Substances. -Added 9 substances of 28th SVHC and 2 substances of 29th SVHC in “I -2- (2) SVHCs of REACH Regulation”. −Revised contents of II-1 Prohibited Chemical Substances in Manufacturing Processes -Revised contents of II-2 Controlled Chemical Substances in Manufacturing Processes -Deleted list of II-2-(1) Class I designated Chemical Substances under the PRTR Law