

◇Table 2: Criteria for substances whose inclusion is banned

(Note) 1. Since examples of purposes and uses do not cover all cases, please check with the publisher if you are not sure.
 2. When there is no indication of exempt in the control level, it means “there is no exempt purposes and uses.”
 3. See Table 6 for the details of each substance group. As for ozone depleting substances, see Table 7.

No.	Name of substance	Control level	Examples of purposes and uses	Content threshold	Period when delivery is prohibited
1	Polychlorinated Biphenyls (PCBs)	Banned	Insulating oil, Lubricant, Electric insulating medium, Solvent, Electrolyte	—	Immediately
		Exempt	When contained as by-product	50ppm	—
2	Polychlorinated Terphenyls	Banned	Insulating oil, Lubricant, Electric insulating medium, Solvent, Electrolyte	—	Immediately
3	Polychloronaphthalenes (Cl=>1)	Banned	Lubricant, Paint, Plastic stabilizer, Electric insulating medium, Flame retardant	—	Immediately
4	Polybrominated Biphenyls (PBBs)	Banned	Flame retardant	1000ppm	Immediately
5	Polybrominated Diphenyl ethers (PBDEs)	Banned	Flame retardant	RoHS subjected products: 1000ppm RoHS unsubjected products: 500ppm (the sum of the concentration of tetra-, penta-, hexa-, hepta- and decaBDE) Note: DecaBDE shall be managed independently due to its un-specified threshold value.	Immediately
6	Short Chain Chlorinated Paraffins	Banned	PVC plasticizer, Flame retardant	1000ppm	Immediately
7	Asbestos	Banned	Brake lining pad, Insulator, Filler, Rubbing agent, Electric insulating medium, Filler, Pigment/Paint, Talc, Heat insulator	—	Immediately
8	Ozone Depleting Substances [*1]	Banned	Coolant, Foaming agent, Digestive, Detergent	—	Immediately
		Exempt	When contained as by-product	—	—
9	Cadmium and its compounds	Banned	• Packaging materials	100ppm (The sum of the concentration of cadmium, hexavalent chromium, lead and mercury) and Intentional addition prohibited	Immediately
			• Portable battery, Battery Excludes the following Alkaline zinc-manganese dioxide portable batteries	20ppm [*2]	
			Alkaline zinc-manganese dioxide portable batteries	10ppm	
			• Paint, ink • Additives such as pigment, dye, stabilizer in resin (including gum) materials (excluding impurities) • Material or a part treated with cadmium electroplating or cadmium coating. • Parts Electroless plated with nickel using luster, containing cadmium • Pigment and dye in glass and paint for glass • Silver brazing filler metals containing cadmium • Material and parts such as zinc, zinc alloy, and zinc compound, etc. (free-cutting brass rods, rubber belt, etc.) • Electric point of contact of DC motor, switch, relay, breaker and the like • Fuse element of temperature fuse • Fluorescent tubes (small-size fluorescent tubes, straight fluorescent tubes) • Fluorescent material contained in fluorescent indicator	100ppm	

*1. Ozone depleting substances are banned from use in manufacturing process as well. (See Section 5)

*2. The threshold value of cadmium contained in the battery shall be calculated with the weight of cadmium in the gross weight of battery (namely, concentration of cadmium per battery), same as the definition of the European Battery Regulation.

No.	Name of substance	Control level	Examples of purposes and uses	Content threshold	Period when delivery is prohibited
10	Hexavalent chromium and its compounds	Banned	• Products that come into contact with skin, including leather products and leather parts	3ppm (In total dry weight of leather)	Immediately
			• Packaging materials	100ppm (The sum of the concentration of cadmium, hexavalent chromium, lead and mercury) and Intentional addition prohibited	
			• Paint, ink • Materials and parts galvanized and treated with chromate (sheet metal, screw, shafts, bearings, etc. used for general machinery components, purchased electronic components, electric power devices, etc.) • Materials and parts such as aluminum, copper alloys and zinc alloys chemically synthesized with chromate (treatment before painting)	1000ppm	
11	Lead and lead compounds	Banned	• Packaging materials	100ppm (The sum of the concentration of cadmium, hexavalent chromium, lead and mercury) and Intentional addition prohibited	Immediately
			• Lead in polyvinyl chloride electric wire coating	300ppm [*3]	
			• Portable batteries Excludes the following — Zinc-manganese dioxide button portable batteries — Alkaline zinc-manganese dioxide portable batteries	100ppm [*4]	From February 18, 2024
			• Non-alkaline zinc-manganese dioxide portable batteries (Until February 17, 2024)	1000ppm [*5]	Immediately
			• Zinc-silver oxide button portable batteries (Until February 17, 2024)	200ppm [*5]	
			• Zinc-air button portable batteries (Until February 17, 2028)	500ppm [*5]	
			• Zinc-manganese dioxide button portable batteries • Alkaline zinc-manganese dioxide portable batteries	40ppm	
• Paint, ink • Additives such as pigment, dye, stabilizer in resin (including gum) materials • Material and parts plated with lead alloy (e.g. piano wire plated with tin) • Parts containing lead as lubricant (e.g. Dry bearing) • Optical glass, filter glass • Various alloys containing lead(However, exempt alloys are excluded.) • Solder materials (solders with Pb = 85% or less) • Soldered parts and units (Printed Circuit Board, electric power device, motor, clutch, sensor, etc) • Lead in server and storage (HDD) • FFC connector contact part	1000ppm				

*3. According to the Proposition 65 of the State of California, USA

*4. Lead content threshold in battery is calculated by the proportion of the mass of lead in the total mass of battery cell (i. e., concentration per one battery cell), in the same way as the definition in the EU Battery Regulation.

*5. Portable battery threshold (100 ppm) will apply after the deadline.

No.	Name of substance	Control level	Examples of purposes and uses	Content threshold	Period when delivery is prohibited
11	Lead and lead compounds	Exempt	<ul style="list-style-type: none"> • Glass fluorescent tube with lead content of no more than 0,2wt% • 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 • Lead as an alloying element in aluminium containing up to 0,4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling • Lead as an alloying element in aluminum for machining purposes with a lead content up to 0,4% by weight • Lead contained in copper alloy (no more than 4.0wt%) • Lead contained in high melting point solder (Lead alloy with 85wt% or more of lead content) • Electric and electronic parts containing lead in glass or ceramic exempt dielectric ceramic in condenser (example: piezo element), or electric and electronic parts containing lead in glass or ceramic base compound • Lead in dielectric ceramic in condenser with rated voltage of AC125V or DC 250 or more. • Lead in dielectric ceramic in condenser with rated voltage of AC125 or less than DC250V. However , limited to the spare parts for electrical and electronic products placed on the market prior to January 1, 2013 • Lead contained in white glass used for optical purposes • Lead contained in solder composed of more than two kinds of elements, and is used for joining pin and package of microprocessor, of which lead content is more than 80wt% and less than 85wt%. However, spare parts of products put on market before Jan. 1, 2011 only are applicable • 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: <ul style="list-style-type: none"> — 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. 	—	—

No.	Name of substance	Control level	Examples of purposes and uses	Content threshold	Period when delivery is prohibited	
12	Mercury and mercury compounds	Banned	<ul style="list-style-type: none"> • Packaging materials 	100ppm (The sum of the concentration of cadmium, hexavalent chromium, lead and mercury) and Intentional addition prohibited	Immediately	
			<ul style="list-style-type: none"> • Batteries Excludes the following <ul style="list-style-type: none"> — Alkaline zinc-manganese dioxide portable batteries — Non-alkaline zinc-manganese dioxide portable batteries 	5ppm [*6]		
			<ul style="list-style-type: none"> • Alkaline zinc-manganese dioxide portable batteries • Non-alkaline zinc-manganese dioxide portable batteries 	1ppm		
			<ul style="list-style-type: none"> • Dispensation into pigment, paint, ink and resin • Relay, switch and sensor with mercury as contact point 	1000ppm		
		Exempt	Cold cathode fluorescent lamp for special uses and external electrode fluorescent lamp (mercury included in CCFL and EEFL)	Short lamp (500mm or less) (effective until 24 August 2024)	3.5mg	—
				Medium length lamp (over 500mm and no more than 1500) (effective until 24 August 2024)	5mg	
				Long lamp (over 1500mm) (effective until 24 August 2024)	13mg	
			Mercury in other discharge lamps for special purposes not specifically mentioned in EU RoHS Annex(effective until 24 August 2024)		—	
			Mercury in high pressure mercury vapour lamps used in projectors where an output ≥ 2000 lumen ANSI is required(effective until 24 August 2026)		—	
			Mercury in high pressure sodium vapour lamps used for horticulture lighting(effective until 24 August 2026)		—	
Mercury in lamps emitting light in the ultraviolet spectrum(effective until 24 August 2026)		—				
13	Perfluorooctanesulfonic acid and its salts (PFOS)	Banned	<ul style="list-style-type: none"> • Surface treatment, plating, fabric 	1 μ g/m ² or 1000 ppm	Immediately	
			<ul style="list-style-type: none"> • Other than preparations, surface treatment, plating, and fabric 	1000ppm		
14	Certain Azocolourants and Azodyes that form certain amines	Banned	<ul style="list-style-type: none"> • Fabric and leather parts/products that can come into direct contact with human skin (or mouth orifice) for extended period of time. [*7] 	30ppm	Immediately	
			<ul style="list-style-type: none"> • Purpose of use other than the above 	—		
15	Trisubstituted organotin compound	Banned	<ul style="list-style-type: none"> • Antiseptic, antimold, paint, colorant, antifoulant paint, cooling medium, bloating agent, extinguishing agent, cleaning agent, stabilization agent, antioxidizing agent/age inhibitor, antibacterial and antifungal agents, antifoulant 	1000ppm [*8]	Immediately	
16	Dibutyltin compounds	Banned	<ul style="list-style-type: none"> • Stabilizers for vinyl chloride resin , lubricants and catalyst 	1000ppm [*8]	Immediately	

*6. Mercury content threshold in battery is calculated by the proportion of the mass of mercury in the total mass of battery cell (i. e., concentration per one battery cell), in the same way as the definition in the EU Battery Regulation.

*7. Only those instructed in drawings or specifications are applicable

*8. Concentration of tin mass after conversion into metal

No.	Name of substance	Control level	Examples of purposes and uses	Content threshold	Period when delivery is prohibited
17	Diocetyl tin compounds	Banned	<ul style="list-style-type: none"> • RTV-2 moulding kits • Two uses of articles made of fabric with an intention to come into contact with skin 	1000ppm [*8]	Immediately
		Exempt	<ul style="list-style-type: none"> • Use other than the above two uses 	—	—
18	Dimethyl fumarate (DMF)	Banned	<ul style="list-style-type: none"> • Antiseptic of leather products • Desiccant (silica gel pack) 	0.1ppm	Immediately
19	Polycyclic aromatic hydrocarbons (PAHs)	Banned	<ul style="list-style-type: none"> • Rubber or plastic components that come in direct contact with human skin or in the mouth for extended period or short period repeatedly [*9] 	1ppm	Immediately
		Exempt	<ul style="list-style-type: none"> • Applications other than the above 	—	—
20	Perfluorooctanoic acid (PFOA) and any related substances 1: eight substances regulated by Norwegian law [*10]	Banned	<ul style="list-style-type: none"> • Textile and coated materials 	1µg/m ³	Immediately
			<ul style="list-style-type: none"> • Articles (other than the above) 	1000ppm	
	Perfluorooctanoic acid (PFOA) and any related substances 2: Substance regulated by EU POPs regulation [*10]	Banned	<ul style="list-style-type: none"> • Article (except for the following) 	PFOA and its salt : 25ppb One or a combination of related substances : 1000ppb [*11]	Immediately
		Exempt [*12]	<ul style="list-style-type: none"> • equal to or below 20 mg/kg (0,002 % by weight) where they are present in a substance to be used as a transported isolated intermediate for the production of fluorochemicals with a perfluoro carbon chain equal to or shorter than 6 atoms 	—	—
			<ul style="list-style-type: none"> • photolithography or etch processes in semiconductor manufacturing, until 4 January 2025 	—	—
			<ul style="list-style-type: none"> • photographic coatings applied to films, until 4 January 2025 	—	—
<ul style="list-style-type: none"> • invasive and implantable medical devices, until 4 January 2025 	—		—		
<ul style="list-style-type: none"> • equal to or below 2 mg/kg (0,0002 % by weight) where they are present in medical devices other than invasive devices and implantable devices. • the use of perfluorooctyl bromide containing perfluorooctyl iodide for the purpose of producing pharmaceutical products. 	—	—			
21	Hexabromocyclododecane (HBCDD)	Banned	<ul style="list-style-type: none"> • Flame retardant 	100ppm	Immediately
22	Bis (2-ethylhexyl) phthalate (DEHP)	Banned	<ul style="list-style-type: none"> • Plasticizers, etc. 	1000ppm [*13]	Immediately
23	Benzyl butyl phthalate (BBP)	Banned	<ul style="list-style-type: none"> • Plasticizers, etc. 	1000ppm [*13]	Immediately
24	Dibutyl phthalate (DBP)	Banned	<ul style="list-style-type: none"> • Plasticizers, etc. 	1000ppm [*13]	Immediately
25	Diisobutyl phthalate (DIBP)	Banned	<ul style="list-style-type: none"> • Plasticizers, etc. 	1000ppm [*13]	Immediately
26	Polymers in which halogens are contained structurally and polymers to which halogenated compounds are added	Banned	<ul style="list-style-type: none"> • Plastic parts for packaging [*14] 	—	Immediately
		Exempt	<ul style="list-style-type: none"> • Plastic parts used for purposes except for packaging 	—	—

*9. The suppliers of the relevant parts shall be contacted by RICOH IMAGING COMPANY, LTD. individually.

*10. Refer to Table 10 for details of target substances

*11. The threshold value in the molded product is used.

*12. Eight substances regulated by Norwegian law must meet Norwegian law standards even if they are excluded.

*13. For products that are not subject to the EU RoHS directive (packaging materials, promotional items, etc.), the threshold value is the sum of DEHP, BBP, DBP, and DIBP in the plasticized material.

*14. Packaging plastic parts refer to "parts that are part of products (e.g., styrene foam, bubble cushioning material, tape, etc.)" used to wrap RICOH IMAGING products to prevent damage or staining when the products are placed on the market, and packaging materials used only for delivery to the RICOH IMAGING COMPANY, LTD. are excluded from the scope.

No.	Name of substance	Control level	Examples of purposes and uses	Content threshold	Period when delivery is prohibited
27	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs), their salts and C9-C14 PFCA-related substances	Banned	• Article (except for the following)	the concentration in the substance, the mixture, or the article is below 25 ppb for the sum of C9-C14 PFCAs and their salts or 260 ppb for the sum of C9-C14 PFCA-related substances	Immediately
		Exempt	• the concentration limit shall be 10 ppm for the sum of C9-C14 PFCAs, their salts and C9-C14 PFCA related substances, where they are present in a substance to be used as a transported isolated intermediate met for the manufacturing of fluorochemicals with a perfluoro carbon chain length equal to or shorter than 6 atoms	—	—
			• exempted until 4 January 2025 for: photolithography or etch processes in semiconductor manufacturing;	—	—
			• exempted until 4 January 2025 for: photographic coatings applied to films;	—	—
			• exempted until 4 January 2025 for: invasive and implantable medical devices;	—	—
			• exempted until 25 February 2028 to the can coating for pressurised metered-dose inhalers	—	—
			• exempted until 30 June 2030 to semiconductors used in spare or replacement parts for finished electronic equipment placed on the market before 31 December 2023.	—	—
			• Until 24 February 2024, the concentration limit shall be 2000ppb for the sum of C9-C14 PFCAs in fluoroplastics and fluoroelastomers that contain perfluoroalkoxy groups. From 25 February 2024, the concentration limit shall be 100 ppb for the sum of C9-C14 PFCAs, in fluoroplastics and fluoroelastomers that contain perfluoroalkoxy groups.	—	—
• less than 1000ppb for the sum of C9-C14 PFCAs, where these are present in PTFE micro powders produced by ionising irradiation or by thermal degradation, as well as in mixtures and articles for industrial and professional uses containing PTFE micro powders.	—	—			
28	Phenol, isopropylated phosphate (3:1) (PIP (3:1))	Banned	PIP 3:1 containing parts and materials to be adopted newly	—	Immediately
		Exempt	PIP 3:1 containing existing parts and materials to be purchased on and before 31 March 2022	—	—
29	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS related compounds	Banned	• Fluorine coating, metal plating, etc.	25 ppb for PFHxS or any of its salts 1000 ppb (1 ppm) for the sum of concentrations of all PFHxS related compounds	Immediately

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