

HORIBA Group Banned Chemical Substances Standard

The 4.1st Edition

October 17, 2017
HORIBA, Ltd.

Revision History

Revised on	Revised content
4 January 2013 The 2 nd Edition	The 2 substances added: - (8) fluorinated greenhouse gases, for EU Regulations and Kyoto Protocol; - (20) polychlorinated terphenyls, for Restrictions by Annex XVII, REACH.
6 January 2014 The 3 rd Edition	The following substance added: (26) cobalt chloride (for use as silica gel and desiccant agent) Reason: To respond to domestic and international regulations and demands of the market
1 July 2017 The 4 th edition	The 4 substances added:
16 October 2017 The 4.1 edition	The date July 1 st 2017 is added to 'Time to Banned Use' of the 4 substances added as of July 1 st 2017.

Banned chemical substances listed in HORIBA Group Green Procurement Guideline (By Category)

Components and materials delivered to HORIBA Group and the products of HORIBA Group must be guaranteed that the contamination of each chemical substance is less than the values of each listed below.

No	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
1	Asbestos	Intentional use banned	Annex XVII of REACH Regulation (EC) No 1907/2006; US TSCA; Swiss Ordinance on Reduction of Risk from Chemical Products	Brake linings/pads, Insulator, filler, pigment, paint, talc,	Immediate
2	Azocolourants and azodyes which form certain aromatic amines (*1)	0.003% by weight (30 ppm) of the finished textile/leather product	Annex XVII of REACH Regulation (EC) No 1907/2006;	Pigment, dyes, colorants	Immediate

No	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
3	Cadmium/cadmium compounds	All, except substances below	0.01% by weight (100 ppm) of cadmium in homogeneous materials	Annex XVII of REACH Regulation (EC) No 1907/2006; EU Directive 2002/95/EC and 2005/618/EC; China MII Methods; Korea RoHS; Japan J-MOSS; US/CA SB-20/50	Pigment, anti-corrosion surface treatment, optical glass, stabilizer, plating, fluorescent lights, electrode, solder, electric contact, contact point, zinc plating, Stabilizer for PVC	Immediate
		Packaging Material (*5)	Less than 100ppm	EU Directive 94/62/EC	Packaging Material	Immediate
		Batteries (*2)	0.0005% by weight (5 ppm) of cadmium in battery	Swiss Ordinance on Reduction of Risk from Chemical Products; EU Battery Directive 2006/66/EC; Chinese Standard GB 24427-2009 "Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries"	NiCd accumulators	Immediate

No	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
4	Chromium VI compounds	All, except substances below	0.1% by weight (1 000 ppm) of chromium (VI) in homogeneous materials	EU Directive 2002/95/EC and 2005/618/EC; China MII Methods; Korea RoHS; Japan J-MOSS; US/CA SB-20/50	Pigment, paint, ink, catalyst, plating, anticorrosion surface treatment, dye	Immediate
		Packaging Material (*5)	Less than 100ppm	EU Directive 94/62/EC	Packaging Material	Immediate
5	Dibutyltin (DBT) compounds (*3)		0.1% by weight 1 000 ppm) of tin in a material	Annex XVII of REACH Regulation (EC) No 1907/2006 and Commission Regulation (EU) No 276/2010	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	Immediate
6	Dioctyltin (DOT) compounds (*3)	(a) textile and leather articles intended to come into contact with the skin, (b) childcare articles (c) two-component room temperature vulcanization molding kits (RTV-2 molding kits)	0.1% by weight (1 000 ppm) of tin in a material	Annex XVII of REACH; Regulation (EC) No 1907/2006; and Commission Regulation (EU) No 276/2010	Stabilizer for PVC, curing catalyst for silicone resin and urethane resin	Immediate

№	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
7	Dimethyl fumarate (*3)	0.00001% by weight (0.1 ppm) in a material	COMMISSION DECISION 2009/251/EC	Biocide and mold treatment of electronic leather seats, including recliners and massage chairs	Immediate
8	Fluorinated greenhouse gases (PFC, SF6 and HFC)	Intentional use banned	Regulation (EU) 842/2006	Refrigerant, blowing agent, extinguishant, cleaning agent, insulator, caustic gas	Immediate
9	Formaldehyde Composite wood (plywood, particle board, medium density fiberboard), products or components (*4)	Intentional use banned	US/CA CARB Rule; US Federal Law 111-199/TSCA Section 601	Stereo cabinets, kiosk enclosures	Immediate

No	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
10	Lead/lead compounds	All, except substances below	0.1% by weight (1 000 ppm) of lead in homogeneous materials	EU Directive 2002/95/EC and 2005/618/EC; Annex XVII of REACH Regulation (EC) No 1907/2006; China MII Methods; Korea RoHS; Japan J-MOSS; US/CA SB-20/50	Rubber hardener, pigment, paint, lubricant, plastic stabilizer, free-machining alloy, free-cutting steels, optical materials, X-ray shielding in CRT glass, solder materials, curing agent, vulcanizing agent, ferroelectrics, plating, metal alloy	Immediate
		Packaging Material (*5)	Less than 100ppm	EU Directive 94/62/EC	Packaging Material	Immediate
		Cables/cords with thermoset or thermoplastic coatings	0.03% by weight (300 ppm) of lead in surface coating	US/CA Proposition 65 Case law	Pigment, paint, stabilizer, colorant	Immediate

No	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
		Batteries (*2)	0.004% by weight (40 ppm) of lead in battery	EU Battery Directive 2006/66/EC; Chinese Standard GB 24427-2009 “Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries”	Zinc carbon batteries, alkaline button cells	Immediate
11	Mercury/mercury compounds	All, except substances below	Intentionally added or 0.1% (1 000 ppm) of mercury in homogeneous material	Vermont act relating to comprehensive management of exposure to mercury; Rhode Island General Laws 23- 24.9 and amendment of 2007; Louisiana Mercury Risk Reduction Act; Annex XVII of REACH Regulation (EC) No 1907/2006; EU Directives 2002/95/EC and 2005/618/EC; China MII Methods; Korea RoHS; Japan J-MOSS; US/CA SB-20/50	Fluorescent bulb, contact point material, pigment, anti-corrosion, switches, antibacterial treatment	Immediate

№	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
		Packaging Material (*5)	Less than 100ppm	EU Directive 94/62/EC	Packaging Material	Immediate
		Batteries (*2)	0.0001% by weight (1 ppm) of mercury	New York Env Law § 27-0719 Battery Management and Disposal; Taiwan Restrictions on the Manufacture, Import, and Sale of Dry Cell Batteries; Korea: Law on quality management and control of safety of industrial products Battery regulation; Chinese Standard GB 24427-2009 “Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries”; EU Battery Directive 2006/66/EC	Silver-oxide button cells, alkaline batteries, zinc carbon batteries	Immediate

No	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
12	Nickel (*6)	All, where prolonged skin contact is expected	Intentional use banned	Annex XVII of REACH Regulation (EC) No 1907/2006	Stainless steel, plating; example application for prolonged skin contact is headphone	Immediate
13	Ozone depleting substances		Intentional use banned	Montreal Protocol; EU EC No. 2037/2000; EC 1005/2009; US Clean Air Act	Refrigerant, foaming agent, extinguishant, solvent cleaner	Immediate
14	Perchlorates		0.0000006% by weight (0.006 ppm) of the product	US/CA DTSC Rulemaking	Coin cell batteries	Immediate
15	Perfluorooctane sulfonate (PFOS) (*3)		Intentionally added or 0.1% by weight (1000 ppm) in material	Annex XVII of REACH Regulation (EC) No 1907/2006 and Commission Regulation (EC) No 552/2009; Canadian Environmental Protection Act SOR/2008-178; Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc.	Antistatic agent for films and plastics	Immediate

No	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
16	Phenol,2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethylethyl)	Intentional use banned	Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc	Adhesives, paints, printing inks, plastics, inked ribbons, putty, caulking or sealing fillers	Immediate
17	Polybrominated biphenyls (PBBs)	0.1% by weight (1 000 ppm) in homogeneous material	EU Directive 2002/95/EC and 2005/618/EC; China MII Methods; Korea RoHS; Japan J-MOSS	Flame retardant	Immediate
18	Polybrominated diphenylethers (PBDEs)	Intentionally added or 0.1% by weight (1 000 ppm) in homogeneous material	EU Directive 2002/95/EC and 2005/618/EC; China MII Methods; Korea RoHS; Japan J-MOSS, Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc	Flame retardant	Immediate

№	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
19	Polychlorinated biphenyls (PCBs) and specific substitutes	Intentional use banned	Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc.; Annex XVII of REACH Regulation (EC) No 1907/2006; US TSCA.	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution; plasticizers, flame retardants, dielectric sealants	Immediate
20	polychlorinated terphenyls (PCTs)	0.005% by weight (50 ppm) in material	ANNEX XVII of REACH Regulation (EC) No 1907/2006;	Insulation oil, lubricant oil, electrical insulation medium, solvent, electrolytic solution; plasticizers, flame retardants, coatings for electrical wire and cable, dielectric sealants	Immediate

№	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
21	Polychlorinated naphthalenes (more than 3 chlorine atoms)	Intentional use banned	Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc	Lubricant, paint, stabilizer (electric characteristic, flame-resistant, water-resistant) insulator, flame retardant	Immediate
22	Radioactive substances	Intentional use banned	EU-D 96/29/Euratom; Japan Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986; Japan Law Concerning Prevention from Radiation Hazards; US NRC	Optical properties (thorium), measuring devices, gauges, detector	Immediate

№	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
23	Shortchain chlorinated paraffins (C10 – C13)	0.1% by weight (1 000 ppm) of the product	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008), Norway Product Regulations FOR-2004-06-01-922; Swiss Ordinance on Reduction of Risk from Chemical Products	Plasticizer for PVC, flame retardant	Immediate
24	Tri-substituted organostannic compounds	Intentionally added or 0.1% by weight (1 000 ppm) of tin in a material	Annex XVII of REACH Regulation (EC) No 1907/2006 and Commission Regulation (EU) No 276/2010; Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc Norwegian product regulation	Stabilizer, antioxidant, antibacterial and antifungal agents, antifoulant, antiseptic, paint, pigment, antistaining	Immediate

No	Substance/Category		Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
25	Tributyl tin oxide (TBTO)		Intentionally added or 0.1% by weight (1 000 ppm) of the product	Act on the Evaluation of Chemical Substances and Regulation of Their manufacture, etc Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization 28.10.2008)	Antiseptic, antifungal agent, paint, pigment, antistaining, refrigerant, foaming agent, extinguishant, solvent cleaner	Immediate
26	cobalt chloride	silica gel, desiccant	0.1% by weight (1,000ppm) of the product	Article 33 and 7.2 of REACH Regulation (EC) No 1907/2006 (Candidate list of SVHC for authorization), Industrial Safety and Health Act	Moisture content indicator	Immediate
27	Benzyl butyl phthalate (BBP)		0.1% by weight (1 000 ppm) in homogeneous material	ANNEX II of RoHS Directive (EU) 2015/863 (The list of restricted substances)	Polyvinyl chloride sheet, adhesive agent, seal component. coating material	July 1 st 2017

№	Substance/Category	Control Level	Key Legal and Regulatory or Industry Standard/Agreement Citation	Examples of Use	Time to banned use
28	Dibutyl phthalate(DBP)	0.1% by weight (1 000 ppm) in homogeneous material	ANNEX II of RoHS Directive (EU) 2015/863 (The list of restricted substances)	cable, plug, rubber, tube, seal material, adhesive agent, antiskid coating, coating material	July 1 st 2017
29	Bis(2-ethylhexyl)phthalate(DEHP)	0.1% by weight (1 000 ppm) in homogeneous material	ANNEX II of RoHS Directive (EU) 2015/863 (The list of restricted substances)	polyvinyl chloride cable and wire(versatile plasticizer)	July 1 st 2017
30	Diisobutyl phthalate(DIBP)	0.1% by weight (1 000 ppm) in homogeneous material	ANNEX II of RoHS Directive (EU) 2015/863 (The list of restricted substances)	Plasticizer	July 1 st 2017

**1 The European Community's ban applies to azocolourants and azodyes that by reductive cleavage of azo groups release one of the aromatic amines listed in the Annex. The threshold level given applies to these amines, not to the azocolourants and azodyes.*

**2 The battery reporting threshold level is based on the strictest known legal requirement. However, for simplification, the same reporting threshold level is set for all kind of batteries, even if the underlying legal requirement is only applicable for only one specific battery type. Concentration value shall be calculated by total weight of the battery.*

**3 Commission Regulation (EU) No 276/2010 defines a concentration limit of 0.1% by weight of tin in the article or part thereof. Likewise Commission Decision 2009/251/EC defines a concentration limit of 0.00001% by weight of DMF in the product or part of the product and Commission Regulation (EC) No 552/2009 defines a concentration limit of 0.1% by weight of PFOS in the semifinished product or article or part thereof. Because no legal definition of*

part is provided in these legislations, the most potentially restrictive concentration limit is not adequately specified. Therefore, the concentration limit is applied at the level of a material vs. a part to ensure disclosure of the regulated substances for the most basic unit of a part.

**4 Regulatory thresholds for substances in these applications are based on emission or exposure limits rather than on the concentration in the product.*

Examples of regulatory limits are:

Formaldehyde in hardwood plyboard with veneer core – 0.05 ppm (measured as gaseous emission from product);

For Nickel in applications of prolonged skin contact - 0.5 micrograms/sq cm/week per DIN EN 1811;

Radioactive substances -a dose rate exceeding 1 μ Sv h⁻¹ at a distance of 0.1 m.

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.

**5 Total weight containing heavy metal such as lead, cadmium, mercury and hexavalent chrome per homogeneous material composing packaging (ex. Resin, ink, paint) shall be less than 100ppm by weight. Intentional adding is banned.*

Annex: List of banned substances

<i>Azocolourants and azodyes which form certain aromatic amines</i>	
Control Subject	
<ul style="list-style-type: none"> Subjects with a possibility of direct and long-haul contact with human skin or buccal cavity Ex) clothes, bedclothes, towels, hairpieces, wigs, hats, other sanitary goods, blanket rolls, footwear, gloves, watchbands, earphones, headphones, straps and shoulder belts, etc. List of specific amines which is not to generate by reductive degradation of azocolourants and azodyes	
Aromatic Amines	CAS No.
Biphenyl-4-ylamine	92-67-1
Benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene	97-56-3
5-nitro-o-toluidine	99-55-8
4-chloroaniline	106-47-8
4-methoxy-m-phenylenediamine	615-05-4
4,4'-methylenedianiline	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
4,4'-methylenedi-o-toluidine	838-88-0
6-methoxy-m-toluidine	120-71-8
4,4'-methylene-bis(2-chloroaniline)	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
4-methyl-m-phenylenediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidine	90-04-0
4-amino azobenzene	60-09-3
*This list conforms to JOINT INDUSTRY GUIDELINE(JIG)	

<i>Cadmium/Cadmium Compounds</i>	
Control Subject	
<ul style="list-style-type: none"> • Banned for all, except use of exemption Ex. <ul style="list-style-type: none"> • Stabilizer, pigment, dye and ink used for plastic (including gum and film) • Fluorescence substance, alloy, packaging, etc. 	
Exemption	Substances stated in Exemption List

<i>Lead/lead compounds</i>	
Control Subject	
<ul style="list-style-type: none"> • Banned for all, except use of exemption Ex. <ul style="list-style-type: none"> • Paint, pigment, dye and ink • Stabilizer into plastic material (including gum) • External electrode, solder treatment of lead terminal and packaging etc. 	
Exemption	Substances stated in Exemption List

<i>Chromium VI Compounds</i>	
Control Subject	
<ul style="list-style-type: none"> • Banned for all, except use of exemption Ex. <ul style="list-style-type: none"> • Corrosion control • Resin, paint, pigment and ink • Packaging, etc. 	
Exemption	Substances stated in Exemption List

<i>Mercury/mercury compounds</i>	
Control Subject	
<ul style="list-style-type: none"> • Banned for all, except use of exemption Ex. <ul style="list-style-type: none"> • Resin, paint, pigment and ink • Indicator of horologe etc. • Relay, switch and sensor using mercury in contact point • Preparation for plastic and packaging etc. 	
Exemption	Substances stated in Exemption List

<i>Formaldehyde</i>
Control Subject
Wood products and parts using a particle board and MDF(Medium Density Fiberboard), etc. need to meet the following condition (ex. Speaker box and rack) <ul style="list-style-type: none"> • Not intentional use but control level in the chart 1 is to be ensured. Regarding the products outside of the restricted area, however, it is possible to apply less than 0.5mg/L (JIS: Desicator method).

<i>PBB, PBDE</i>
Control Subject
<ul style="list-style-type: none"> • All PBB and PBDE (Deca BDE (decabromodiphenyl ether) is to be banned)

<i>Perfluorooctane sulfonate and its salts</i> (PFOS) Molecular formula: C ₈ F ₁₇ SO ₂ X (X=OH, metallic salt, halide, amide, other derivative including polymer)	
Control Subject	
<ul style="list-style-type: none"> • Banned for all, except use of exemption Note) “Surface finishing under 1µg/m ² ”, which is permitted in EU regulation of hazardous substances, is banned due to intentional use.	
Exemption	<ul style="list-style-type: none"> • Photoresist for photolithography process • Photo coating agent for film, paper or printing original plate

Specified benzotriazoles
Control Subject
<ul style="list-style-type: none"> • Banned for all, <p>Ex.</p> <ul style="list-style-type: none"> • Ultraviolet ray absorber for plastic resin • Plastic building materials • Coating resin of photographs by sublimation transfer printing

Dimethyl fumarate
Control Subject
<ul style="list-style-type: none"> • Banned for all, <p>Examples of use</p> <ul style="list-style-type: none"> • Desiccant, antifungal agent

<i>Specified organostannic compounds</i> 'Bis (Tributyl tin) = oxide', 'Tri-substituted organostannic compounds'
Control Subject
<ul style="list-style-type: none"> • Banned for all use <p>Examples of use</p> <p>'Bis (Tributyl tin) = oxide' : paint, pigment and anticeptic agent</p> <p>"Tri-substituted organostannic compounds" : paint, pigment and stabilizer</p>

<i>Diocetyl tin Oxide Compounds and Dibutyltin Compounds</i>
Control Subject
<ul style="list-style-type: none"> • Banned for all use <p>Ex.</p> <ul style="list-style-type: none"> • Resin stabilizer • Calcification catalyst for polyurethane / silicone • Glass covering agent • Modifier for rubber



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