

**Table 1 Containment-prohibited substances and control values**

Substance group	Control value	Target items, applications, etc.
Cadmium and cadmium compounds *2RoHS Directive (2011/65/EU)	Less than 75ppm in homogeneous material	All applications except for the following:
	Less than 100ppm	Packaging materials/inks/paints*1
Lead and lead compounds *2RoHS Directive (2011/65/EU)	Less than 1000ppm	All applications except for the following:
	Less than 100ppm	① Stabilizers, pigments, and dyes contained in plastic (including rubber) materials ② Paints, inks ② Packaging materials*1
	Less than 800 ppm	① Lead-free solder (lead-free solder in flow solder baths, solder joints on circuit boards, component solder) ② Electroless nickel plating and electroless gold plating films
	Less than 0.35wt%	Steel material
	Less than 0.4wt%	Aluminum alloy
	Less than 4wt%	Copper alloy (including brass, phosphor bronze)
Mercury and mercury compounds *2RoHS Directive (2011/65/EU)	Intentional addition prohibited and Less than 1000ppm in homogeneous material	All applications except for the following:
	Less than 100ppm	Packaging materials/inks/paints*1
Hexavalent chromium compounds *2RoHS Directive (2011/65/EU)	Less than 1000ppm in homogeneous material	All applications except for the following:
	Less than 3 ppm	Natural leather parts and materials
	Less than 100ppm	Packaging materials/inks/paints*1

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Poly brominated biphenyl (PBB) *2RoHS Directive (2011/65/EU)	Intentional addition prohibited and Less than 1000ppm in homogeneous material	All applications, including plastic flame retardant
Poly brominated diphenyl ether (PBDE) *2RoHS Directive (2011/65/EU)	Intentional addition prohibited and Less than 1000ppm in homogeneous material	All applications, including plastic flame retardant *Including Decabromodiphenyl ether (DecaBDE)
Specific phthalates (DEHP, DBP, BBP, DIBP) *2RoHS Directive (2011/65/EU)	Less than 1000ppm in homogeneous material	All applications
Tri-substituted organotin compounds, including tributyltin (TBT) compounds and triphenyltin (TPT) compounds	Intentional addition prohibited and tin concentration in parts: less than 1000ppm	All applications
Dibutyltin(DBT) compounds *3	Tin concentration in parts is less than 1000ppm	All applications
Diocetyl tin(DOT) compounds *4	Tin concentration in parts is less than 1000ppm	Materials for textiles, fabrics, and leather products
Polychlorinated biphenyls (PCBs)	Intentional addition prohibited and 0.5ppm in materials	All applications
Polychlorinated naphthalenes (PCNs)	Intentional addition prohibited	All applications, including insulating oil, lubricating oil, and plastic flame retardant
Polychlorinated terphenyl (PCT)	Intentional addition prohibited and 50ppm in materials	All applications
Short-chain chlorinated paraffins (carbon number 10–13) (SCCP)	Intentional addition prohibited and less than 1000ppm in molded products	All applications

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Substance group	Control value	Target items, applications, etc.
Fluorinated Greenhouse Gases (PFC, SF6, HFC)	Intentional addition prohibited	All applications for products such as refrigerants, heat insulation materials, and insulating materials
Perfluorooctane sulfonic acid (PFOS) and its salts	Intentional addition prohibited The total amount of PFOS and its derivatives in articles or mixtures: less than 1 ppm	All applications
Perfluorooctanoic acid (PFOA) and its salts and related compounds	Intentional addition prohibited The total amount of PFOA and its salts in articles or mixtures: 25 ppb or less	All applications
	Intentional addition prohibited PFOA-related compounds or their combinations in molded articles or mixtures: less than 1 ppm	
Cobalt Dichloride	Intentional addition prohibited	Humidity indicators used in desiccants (silica gel, etc.)
Beryllium Oxide	Intentional addition prohibited and less than 1000ppm in molded products	All applications including heat sinks
Polyvinyl chloride (PVC) and PVC blends	Intentional addition prohibited	① Cable ties, heat shrink tubes, insulating sheets, decorative panels, labels, sheets, laminates ② Packaging parts and materials used for accessories included with products (bags, adhesive tape, blister packs, etc.) ③ Flexible flat cables (FFC)
Asbestos *6	Intentional addition prohibited	All applications
Azocolourants and azodyes which form certain aromatic amines *7	Less than 30 ppm of Generated amine in materials	Materials for textiles, fabrics, and leather products
Formaldehyde	Standard value (concentration for release) established with testing method	Wood products (speaker, rack, etc.) using materials such as fiber boards, particle boards, and plywood boards which are incorporated in final products Testing methods and standard value (concentration for release) established according to customers' applications. concentration in the air: Equal to or less than 0.1ppm in an air-tight test chamber (chamber method) Equal to or less than 8.0mg in 100g of a particleboard/fiberboard (perforator method) Aqueous solution concentration Average 0.5mg/L or less, maximum 0.7mg/L or less (desiccator method)
	75ppm or less	Woven fabric products

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Substance group	Control value	Target items, applications, etc.
Ozone depleting substance (ODS) (CFCs, Halon, HBFCs, HCFCs, etc.)	Intentional addition prohibited	All applications
Hexabromocyclododecane(HBCDD)	Intentional addition prohibited and 75ppm or less in molded articles or mixtures	All applications
Hexachlorobutadiene (HCBd)	Intentional addition prohibited	All applications
Perfluorohexane-1-sulfonic acid (PFHxS) and its salts	Intentional addition prohibited And the total of PFHxS and its salts in articles and mixtures: 25 ppb or less	All applications
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 (Dechlorane Plus)	Intentional addition prohibited	All applications
Long-chain (C9-C21) perfluorocarboxylic acids (PFCAs) and its salts and related substances	Intentional addition prohibited	All applications
Perfluorocarboxylic acids (PFCAs) C9-C14 and its salts and related substances	PFCAs related compounds or their combinations in molded articles or mixtures: 260 ppb or less	All applications
	Total of PFCAs and its salts in articles and mixtures: 25 ppb or less	All applications
Dimethyl fumarate(DMF)	Less than 0.1ppm	All applications
Phenol,Isopropylated,Phosphate(3:1)(PIP (3:1))	Intentional addition prohibited	All applications
2,4,6-Tris(tert-butyl)phenol (TTBP)	Intentional addition prohibited	All applications
2-(2H-benzotriazol-2-yl)-4,6- ditertpentylphenol (UV-328)	Intentional addition prohibited	All applications
2-(2H-1,2,3-benzotriazol-2-yl)-4,6-di-tert- butylphenol (UV-320)	Intentional addition prohibited and less than 1000 ppm	All applications

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Substance group	Control value	Target items, applications, etc.
Pentachlorothiophenol(PCTP)	Intentional addition prohibited	All applications
Chlorinated phosphate ester flame retardants (3 types) Tris(1,3-dichloro-2-propyl) phosphate (TDCPP) Tris(2-chloroethyl) phosphate(TCEP) Tris(1-chloro-2-propyl) phosphate(TCPP)	Intentional addition prohibited and less than 1000 ppm	All applications

10 substances regulated by RoHS directive

\*1 Total amount of heavy metals: lead, cadmium, mercury, hexavalent chromium contained in packaging material and packaging part is less than 100ppm at a ratio by weight. However, in plastic part (including rubber part), cadmium concentration is less than 5ppm.

\*2 For particular issues including expiration of exemptions regarding RoHS Directive, the latest requirements in effect should be followed

\*3 Refer to Appendix Table 3. Dibutyltin (DBT) compounds.

\*4 Refer to Appendix Table 4. Dioctyltin (DOT) compounds.

\*5 Refer to Appendix Table 5. Polycyclic aromatic hydrocarbons (PAH).

\*6 Refer to Appendix Table 6. Asbestos.

\*7 Refer to Appendix Table 7. Certain aromatic amines .

**Table 2. List of Controlled substances**

Category	Substance group	Substance	Major applications
Metal and metal compounds	Antimony and antimony compounds	Antimony and Antimony Compounds	Pigment, paint, catalytic agent, flame retardant, stabilizer, optical lens, solder, ink
	Arsenic and arsenic compounds	Arsenic and Arsenic Compounds	Decoloring of glass, pigment, paint, dye, semiconductor device, flame retardant, ink
	Beryllium and beryllium compounds	Beryllium and Beryllium Compounds	Ceramic raw material, alloy, catalytic agent, electrode, mold, contact, spring material
	Nickel and nickel compounds *8	Nickel and Nickel Compounds	Pigment, paint, coloring agent, battery material, plating, electrode, surface treatment
Halogenated organic compounds	Brominated Flame Retardants *9	Brominated Flame Retardants	Plastic flame retardant
Other	Other phthalates *10	Phthalates	Plasticizer for rubber, elastomer, and polymer products such as PVC, etc., workability improvement additive agent, paint, pigment, dye, ink, adhesive, and sealing agent.
	Perfluorohexanoic acid (PFHxA) and its salts and related substances	Perfluorohexanoic acid	Metal plating, textiles, leather products, abrasives and cleaning agents, coating reinforcements, flame retardants, and corrosion inhibitors
	per- and polyfluoroalkyl substances(PFAS)	Per-and poly fluoro alkyl substances	Containers and packaging, photoresists (photosensitive materials), metal plating agents

\*8 The parts that come into continuous contact with the human body are considered controlled substances.

\*9 Bromine-type flame retardants except PBBs and PBDEs.

\*10 The following three chemical substances are target substances for EU risk assessment.

•Di-"isononyl" phthalate (28553-12-0) •Di-"isodecyl" phthalate (26761-40-0) •Diocetyl phthalate (117-84-0)

**Appendix Table 3 List of Dibutyltin (DBT) compounds**

<b>CAS No.</b>	<b>Name</b>	<b>Abbreviated name/also known as</b>
818-08-6	Dibutyltin oxide	
1067-33-0	dibutyltin diacetate	
77-58-7	Dibutyltin dilaurate	
78-04-6	Dibutyltin maleate	
683-18-1	Dibutyltin dichloride	DBTC

**Appendix Table 4 List of Dioctyltin (DOT) compounds**

<b>CAS No.</b>	<b>Name</b>	<b>Abbreviated name/also known as</b>
870-08-6	Dioctyltin oxide	
3648-18-8	Dioctyltin dilaurate	

**Appendix Table 5. List of Polycyclic aromatic hydrocarbons (PAH)**

<b>CAS No.</b>	<b>Name</b>	<b>Abbreviated name/also known as</b>
50-32-8	Benzo[a]pyrene	BaP
92-87-5	Benzo[e]pyrene	BeP
56-55-3	Benzo[a]anthracene	BaA
218-01-9	Chrysen	CHR
205-99-2	Benzo[b]fluoranthene	BbFA
205-82-3	Benzo[j]fluoranthene	BjFA
207-08-9	Benzo[k]fluoranthene	BkFA
53-70-3	Dibenzo[a, h]anthracene	DBAhA

**Appendix Table 6. List of Asbestos**

<b>CAS No.</b>	<b>Name</b>	<b>Abbreviated name/also known as</b>
1332-21-4	Asbestos, unspecified	
12172-73-5	Amosite	
12001-29-5	Chrysotile	
12001-28-4	Crocidolite	
77536-66-4	Actinolite	
77536-67-5	Anthophyllite	
77536-68-6	Tremolite	



Appendix Table 7. List of amines that must not be generated by decomposition of azo compounds

CAS №	Name
92-67-1	4-aminodiphenyl
92-87-5	Benzidine
95-69-2	4-chloro-o-toluidine; 4-chloro-2-methylaniline
91-59-8	2-naphthylamine
97-56-3	o-aminoazotoluene
99-55-8	2-amino-4-nitrotoluene; 5-nitro-o-toluidine
106-47-8	p-chloroaniline
615-05-4	2, 4-diaminoanisole
101-77-9	4,4'-diaminodiphenylmethane; 4,4'-methylenedianiline
91-94-1	3,3'-dichlorobenzidine
119-90-4	3,3'-dimethoxybenzidine
119-93-7	3,3'-dimethylbenzidine
838-88-0	3,3'-dimethyl-4,4'-diaminodiphenylmethane; 4,4'-diamino-3,3'-dimethylphenylmethane
120-71-8	p-cresidine; 6-methoxy-m-toluidine
101-14-4	4,4'-methylene-bis-(2-chloroaniline)
101-80-4	4,4'-oxydianiline
139-65-1	4,4'-thiodianiline; 4,4'-diaminodiphenylsulfide
95-53-4	o-toluidine
95-80-7	2,4-toluenediamine; 4-methyl-m-phenylenediamine
137-17-7	2,4,5-trimethylaniline
90-04-0	o-anisidine
60-09-3	4-amino azobenzene
95-68-1	2,4-Dimethylaniline
87-62-7	2,6-Dimethylaniline