

Appendix Table 1

## List of Substances Banned by the Tsubaki Group

No.	Substances	CAS No.	Threshold level	Major laws and regulations	Major applications and usage examples
1	Asbestos	Refer to IEC 62474	No intentional addition	REACH	Brake lining pads, insulators, fillers, abrading agents, pigments, paints, talc, thermal insulators
2	Azocolorants and azodyes which form certain aromatic amines	Refer to IEC 62474	No intentional addition	REACH	Pigments, dyes, and coloring agents
3	Cadmium/cadmium compounds	Refer to IEC 62474 or GADSL	100 ppm and over or no intentional addition	RoHS, ELV	Surface treatments, photograph films, fluorescent lamps, DC motor contacts, electrical contacts such as switches, etc., thermal fuses, dyes or pigments for glasses and glass paints, solders (20 ppm and over), phosphors, photoconductive cell resistors, resistor pastes, Ni-Cd batteries, etc.
4	Hexavalent chromium compounds	Refer to IEC 62474 or GADSL	100 ppm and over or no intentional addition	RoHS, ELV	Pigments, paints, inks, catalysts, plating, anticorrosion surface treatments, dyes
5	Lead/lead compounds	Refer to IEC 62474 or GADSL	1000 ppm and over or no intentional addition 300 ppm and over is not allowed (vinyl chloride cable only)	RoHS, ELV	Rubber curing agents, pigments, paints, lubricants, plastic stabilizers, free-cutting alloys, free-cutting steels, optical materials, CRT glass X-ray shielding, electric solder materials, mechanical solder materials, curing agents, vulcanizing agents, ferroelectric materials, plating, alloys, resin additives
6	Mercury/mercury compounds	Refer to IEC 62474 or GADSL	1000 ppm and over or no intentional addition	RoHS, ELV	Fluorescent lamps, electrical contact materials, pigments, anticorrosive agents, switches, highly efficient illuminants, antibacterial treatments
7	Substances that deplete the ozone layer (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc.)	Refer to IEC 62474	No intentional addition	Montreal Protocol	Refrigerants, foaming agents, extinguishing agents, cleaning agents
8	Polybrominated biphenyls (PBBs) for specific bromine flame retardant	Refer to IEC 62474 or GADSL	1000 ppm and over or no intentional addition	RoHS	Flame retardants
9	Polybrominated diphenyl ethers (PBDEs) for specific bromine flame retardant	Refer to IEC 62474 or GADSL	1000 ppm and over or no intentional addition	RoHS	Flame retardants
10	Polychlorinated biphenyls (PCBs)	Refer to IEC 62474	No intentional addition	Chemical Substances Control Law	Insulation oils, lubricants, electrical insulation materials, solvents, electrolysis solutions; plasticizing agents, fire retardants, flame retardants, dielectric sealants
11	Polychlorinated naphthalenes (more than 3 chlorine atoms)	Refer to IEC 62474	No intentional addition	Chemical Substances Control Law	Lubricants, paints, stabilizers (electrical property, flame resistant, water resistant) insulation materials, flame retardants
12	Radioactive substances	Refer to IEC 62474	No intentional addition	Act on Control of Nuclear Reactors	Optical property (thorium), measurement devices, gauges, detectors
13	Certain short chain chlorinated paraffin (10-13 carbon chains)	Refer to IEC 62474	No intentional addition	POPs, REACH	Plasticizing agents and flame retardants for PVCs
14	Tri-substituted organostannic compounds Example: Tributyl tins (TBTs), triphenyl tins (TPTs) compounds	Refer to IEC 62474	No intentional addition	Chemical Substances Control Law, REACH	Stabilizers, antioxidizing agents, antibacterial and antifungal agents, antifouling agents, antiseptic agents, antifungal agents, paints, pigments, contamination resistant agents
15	Bis (tributyl tin) oxide (TBTO)	56-35-9	No intentional addition	REACH	Antiseptic agents, antifungal agents, paints, pigments, contamination resistant agents, refrigerants, foaming agents, extinguishing agents, cleaning agents
16	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	1000 ppm and over or no intentional addition	RoHS	Plasticizing agents, dyes, pigments, paints, inks, adhesive agents, and lubricants
17	Butyl benzyl phthalate (BBP)	85-68-7	1000 ppm and over or no intentional addition	RoHS	Plasticizing agents, dyes, pigments, paints, inks, adhesive agents, and lubricants
18	Dibutyl phthalate (DBP)	84-74-2	1000 ppm and over or no intentional addition	RoHS	Plasticizing agents, dyes, pigments, paints, inks, adhesive agents, and lubricants
19	Diisobutyl phthalate (DIBP)	84-69-5	1000 ppm and over or no intentional addition	RoHS	Plasticizing agents, dyes, pigments, paints, inks, adhesive agents, and lubricants

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20	Hexabromocyclododecane (HBCD) and all major diastereoisomers	Refer to IEC 62474	No intentional addition	REACH, SVHC Chemical Substances Control Law, POPs	Flame retardants mainly used for expanded polystyrenes and certain fibers
21	Arsenic/arsenic compounds	Refer to IEC 62474	1000 ppm and over or no intentional addition Semiconductor compounds containing arsenic constituents and copper foil bonding on printed circuit boards are exempted	REACH	Additives for woods, metals, glasses, and plastics
22	Perfluorooctane sulfonate (PFOS) C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> X (X=OH, metal salt, halide, amide, and other derivatives including polymers)	-	No intentional addition	POPs, REACH	Antistatic agents for films and plastics
23	Phenol, 2-(2H-benzotriazole-2-yl)-4,6-bis(1,2-dimethylethyl); 2-(2H-1,2,3-benzotriazole-2-yl)-4,6-di-tert-butylphenol	3846-71-7	No intentional addition	Chemical Substances Control Law, REACH	Adhesive agents, paints, waxes, decorative plates, sealing agents, air fresheners, plastic resin moldings
24	Polychlorinated terphenyls (PCTs)	61788-33-8	No intentional addition	REACH	Insulation oils, lubricants, electrical insulation materials, solvents, electrolysis solutions; plasticizing agents, fire retardants, coating agents for electric wires and cables, dielectric sealants
25	Dimethyl fumarate (DMF)	624-49-7	No intentional addition	REACH	Pesticides, antifungal treatments of electronic leather sheets for reclining and massage chairs
26	Dibutyltin compounds (DBT)	Refer to IEC 62474	1000 ppm and over by weight of tin is not allowed	REACH	PVC stabilizers, curing catalysts for silicone resins and urethane resins
27	Diocetyl tin compounds (DOT)	Refer to IEC 62474	1000 ppm and over by weight of tin is not allowed	REACH	PVC stabilizers, curing catalysts for silicone resins and urethane resins