

SURUGA SEIKI Specified Chemical Substances Summary Table

The survey covers a total 27 substances as specified below prohibited substances and controlled substances.

Please note that this list is reviewed on an ongoing basis consider ring the legal and social requirements, and that specified chemical substances are sometimes added to or removed from this list.

Classification	No.	Substance	Target Items and Applications	SURUGA SEIKI Regulation Value				
Prohibited Substances	1	Tributyl Tin Oxide (TBTO)	Coating, pigments	Prohibition of intentional use and less than 1000ppm				
	2	Tributyl Tins (TBTs), Triphenyl Tins (TPTs)	Stabilizers, antioxidants, age resisters	Prohibition of intentional use and less than 1000ppm				
	3	Polychlorinated Biphenyls (PCBs)	Insulating oil, Lubricating oil, fire retardants	Prohibition of intentional use				
	4	Polychloronaphthalenes (Cl=3 or more)	Lubricating oil, coatings, resin stabilizers, fire retardants	Prohibition of intentional use				
	5	Polychlorinated Terphenyls (PCT)	Lubricating oil, coatings, antiseptics	Prohibition of intentional use				
	6	Short Chain Chlorinated Paraffins	Fire retardants, plasticizers	Prohibition of intentional use				
	7	Asbestos	Electric insulation, bulking agents, gaskets	Prohibition of intentional use and less than 1000ppm				
	8	Azo Dies and Pigments that Generate Specific Amines	Pigments and colorants for electric wire coatings * Limited to sections in continuous contact with the human body	Prohibition of intentional use and less than 30mg/Kg (30ppm) when used as specific amines				
	9	Ozone-Depleting Substances	Cooling Medium	Prohibition of intentional use				
	10	Radioactive Substances	Packing, packaging materials	Prohibition of intentional use				
	11	Formaldehyde	Fiberboard, wooden products	Aerial concentration of less than 0.1ppm				
	6 RoHS Directive Substances	12	Cadmium and Cadmium Compounds	Cadmium contained in alloys with zinc content (brass, zinc die cast, lead-free solder, etc.), plating, plastic, rubber, coating, etc.	Prohibition of intentional use and less than 75 ppm*1	For packaging materials, less than 100 ppm combined of cadmium, lead, mercury, and hexavalent chromium		
		13	Lead and Lead Compounds	Lead contained in all types of alloys, solder, and all items other than those which are exempted	Less than 1,000 ppm			
					Exemptions		Lead contained in steel materials	0.35wt% (3,500 ppm) or less
					Lead contained in aluminum alloys		0.4wt% (4,000ppm) or less	
					Lead contained in copper alloys		4wt% (40,000ppm) or less	
					Solder with a lead content of at least 85%		-	
14		Mercury and Mercury Compounds	Mercury contained in all items aside from small fluorescent light bulbs and straight-tube fluorescent light bulbs	Prohibition of intentional use and less than 1,000 ppm				
15	Hexavalent Chromium Compounds	All hexavalent chromium in chromate treatment, plating, coating, etc. Chromium metal and chrome in metal alloys are exempted.	Prohibition of intentional use and less than 1,000 ppm					
16	Polybrominated Biphenyls (PBBs)	All PBBs including those in fire retardants	Prohibition of intentional use and less than 1,000 ppm					
17	Polybrominated Diphenyl Ethers (PBDEs)	All PBDEs including those in fire retardants	Prohibition of intentional use and less than 1,000 ppm					
Controlled Substances	18	Antimony and Antimony Compounds	Pigments, coatings, lead-free solder, etc.	Prohibition of intentional use and monitoring of the data on substances whose concentration exceeds 1000 ppm				
	19	Arsenic and Arsenic Compounds	Pigments, coatings, dyes, fire retardant					
	20	Beryllium and Beryllium Compounds	Ceramics, alloys, catalysts, and solder					
	21	Bismuth and Bismuth Compounds	Glass, lead-free solder, easy-cutting aluminum materials					
	22	Nickel and Nickel Compounds	Plating, coatings, pigments (alloys are exempted)					
	23	Selenium and Selenium Compounds	Pigments, coatings					
	24	Other Brominated Flame Retardants (other than PBBs and PBDEs)	Fire retardants					
	25	Phthalate esters	Plasticizers, pigments, dyes, coatings, adhesives					
	26	Polyvinyl Chloride (PVC)	Resins, cord sheathing, plasticizers					
	27	Other chlorinated organic compounds	Fire retardants, plasticizers					

*1 Less than 100 ppm under the RoHS Directive

1. The prohibited substances and controlled substances are the 24 JIG* substances and three substances specified by Suruga Seiki, covering a total of 27 substances

*JIG (Joint Industry Guide): Guidelines jointly deliberated and issued by the Japan Green Procurement Survey Standardization Initiative (JGPSSI), the European Information, Communications and Consumer Electronics Industry Technology Association and US Electronic Industries Alliance (EIA) for the standardization of chemical substances surveys.

2. The regulation values are not for intentional additives, but rather stipulate the maximum permitted concentrations allowed for the impurities which are contained homogeneous materials that cannot be mechanically separated

3. If substances that are not included in this table are regulated by treaties, laws, ordinances, or industry guidelines, and other rules, these regulations shall be observed.

4. For exemption, items are listed in [SURUGA SEIKI Exempted Items List].

Prohibited Substances' Controlled Values

The controlled values of the following prohibited substances are equivalent to concentrations that would not normally be exceeded without intentional uses, and used for controlled purposes in SURUGA SEIKI and our suppliers. In the event the concentration of a prohibited substance exceeds the controlled value, the supplier is required to reduce the concentration to a level below the controlled value.

Prohibited Substance	Applicable part/material	Controlled Value		
Cadmium	<ul style="list-style-type: none"> • Resin (including Rubber, film) • Coatings, inks, pigments, dyes 	Less than 5ppm (High-precision analysis method) (in state with no volatile elements)		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; vertical-align: middle;">Lead-free solder</td> <td> <ul style="list-style-type: none"> • Bar solder • Wire solder • Resin flux cored solder • Solder paste • Solder ball </td> </tr> </table>	Lead-free solder	<ul style="list-style-type: none"> • Bar solder • Wire solder • Resin flux cored solder • Solder paste • Solder ball 	Less than 20ppm (High-precision analysis method)
Lead-free solder	<ul style="list-style-type: none"> • Bar solder • Wire solder • Resin flux cored solder • Solder paste • Solder ball 			
Lead	<ul style="list-style-type: none"> • Resin (including Rubber, film) • Coatings, inks, pigments, dyes 	Less than 100ppm (High-precision analysis method) (with no volatile elements)		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; vertical-align: middle;">Lead-free solder</td> <td> <ul style="list-style-type: none"> • Bar solder • Wire solder • Resin flux cored solder • Solder paste • Solder ball </td> </tr> </table>	Lead-free solder	<ul style="list-style-type: none"> • Bar solder • Wire solder • Resin flux cored solder • Solder paste • Solder ball 	Less than 500ppm (High-precision analysis method)
	Lead-free solder	<ul style="list-style-type: none"> • Bar solder • Wire solder • Resin flux cored solder • Solder paste • Solder ball 		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; vertical-align: middle;">Lead-free solder</td> <td> <ul style="list-style-type: none"> • Soldered sections of purchased PC boards • Component solder </td> </tr> </table>	Lead-free solder	<ul style="list-style-type: none"> • Soldered sections of purchased PC boards • Component solder 	Less than 1000ppm (High-precision analysis method)
	Lead-free solder	<ul style="list-style-type: none"> • Soldered sections of purchased PC boards • Component solder 		
	Metal materials other than lead-free solder		Less than 500ppm	
	Glass(limited to uses in lamps)		Less than 800ppm (High-precision analysis method)	
Electroless nickel plating		Less than 800ppm (High-precision analysis method)		
Lead-free solder in a flow-solder bath		Less than 800ppm (High-precision analysis method)		
Hexavalent Chromium	Chromate treatment parts/materials (based-layer zinc plating)	Less than 100ppm (Simple analysis method)		
P B B P B D E	Resin (including Rubber, film)	Less than 100ppm (High-precision analysis method)		
Lead, mercury, cadmium, hexavalent chromium	Packaging material For each homogenous material comprising packaging (for example, resin, ink, paint)	Less than 100ppm (High-precision analysis method) of total quadruple heavy metals		

SURUGA SEIKI Exempted Items List

- 1) Mercury in compact fluorescent lamps not exceeding 5 mg per lamp.
- 2) Mercury in straight fluorescent lamps for general purposes not exceeding
 - halophosphate 10 mg
 - triphosphate with normal lifetime 5 mg
 - triphosphate with long lifetime 8 mg.
- 3) Mercury in straight fluorescent lamps for special purposes.
- 4) Mercury in other lamps not specifically mentioned in this Annex.
- 5) Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.
- 6) Lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminium containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.
- 7) - Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing 85 % by weight or more lead),
 - lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications
 - lead in electronic ceramic parts (e.g. piezoelectronic devices).
- 8) Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC (1) amending Directive 76/769/EEC (2) relating to restrictions on the marketing and use of certain dangerous substances and preparations.
- 9) Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.
- 10) Lead in lead-bronze bearing shells and bushes.
- 11) Lead used in compliant pin connector systems.
- 12) Lead as a coating material for the thermal conduction module c-ring.
- 13) Lead and cadmium in optical and filter glass.
- 14) 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.
- 15) Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages.