English Version

EPSON

Epson Group

Green Purchasing Standard for Production Materials

Rev. 9

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SEIKO EPSON CORPORATION

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STANDARDS

1. Purpose

This Green Purchasing Standard sets forth the principles, specific criteria for, and use of a product substance assurance system that can ensure that certain hazardous substances are not present in products. The purpose is to prevent substance-related problems for the Epson Group ("Epson" hereafter) and its customers.

2. Scope

This Green Purchasing Standard applies to all production materials that Epson procures. "Production materials" include all finished products, semi-finished products, units, components, raw materials, accessories, options, packaging materials* and other goods comprising Epson products.

* Examples of packaging materials that fall within the scope of this standard: individual boxes, outer boxes (carton boxes), carrying cases, cushioning material, internal and external partitions, fixtures, adhesives, coating materials, staples, OPP tape, ink, and transport pallets (Epson specification).

3. Epson's Basic Principles of Product Substance Assurance

Epson procures production materials on the basis of the following five principles:

(1) Comply with applicable laws and regulations.
(2) Procure materials from suppliers that can comply with conditions specified in this standard regarding prohibited substances (e.g., thresholds, parts and locations where substances are present, uses).
(3) Procure materials from suppliers who can guarantee that prohibited substances are not present in their products.
(4) Procure materials from suppliers who can provide data on target substances present in their products.
(5) Accept goods that have been guaranteed by the supplier.

4. Epson's Expectations of Suppliers

Epson asks its suppliers to do the following three things for the purpose of product substance assurance based on "3. Epson's Basic Principles of Product Substance Assurance":

(1) Comply with this standard.
(2) Build and maintain a product substance assurance system.
(3) Report information about substances in products.

Details are provided below.

(1) Comply with this standard.

Epson generally buys from suppliers who agree to comply with the content of this standard. This standard will be presented to suppliers prior to the start of transactions and each time it is revised. Epson asks that suppliers agree to comply with this standard.
Please see "5. Before Transactions Can Begin" and "6. When This Standard is Revised" for details.

(2) Build and maintain a product substance assurance system.

To provide reliable product substance assurance, suppliers need to build and maintain a system for doing so.

Epson asks that you build and maintain a product substance assurance system based on this Green Purchasing Standard.

Please see "8. Requests Regarding the Assurance System for Substances in Products" for details.

Epson will check your product substance assurance system before beginning transactions and thereafter as necessary. For details about the checking method, please see "5. Before Transactions Can Begin."

(3) Report information about substances in products.

Information about substances present in products must be accurately communicated to guarantee that restricted substances are not present in products in the supply chain. Please follow the instructions of the Epson business unit and use either or both of 1) the chemSHERPA-AI file and 2) a format specified by the Epson business unit to report substances in production materials delivered to Epson. Please notify Epson if a substance of high concern (SVHC) on the Candidate List is found to be present in a concentration greater than 0.1% w/w in articles in accordance with the manual and usage rules in 1) the chemSHERPA-AI file or 2) the specified format.

1) chemSHERPA-AI file

Please use the data entry support tool provided by chemSHERPA when filling out the chemSHERPA-AI file. Both compliance assessment information and composition information will be needed. For detailed information and instructions about chemSHERPA, please see the following website:

Information about Product Substances (Epson Standard Survey)

URL: https://corporate.epson/en/sustainability/supply-chain/green-purchasing/chemical-substances.html

2) Other: Format specified by Epson

Surveys and Submissions (Operations Division Surveys)

URL: https://corporate.epson/en/sustainability/supply-chain/green-purchasing/green-standards.html

Epson may ask you to provide information by other means if necessary to respond to our customers' requirements or Epson's business unit, industry, or legal and regulatory needs. Please provide information using the method specified by Epson.

Examples:

- Report on the results of analyses or tests of substances specified by an Epson business unit (Use the method of analysis, testing, or measurement specified by the Epson business unit, if any. See Table 2.1-5 for analysis standards.)
- Survey data on the amount of substances prohibited in products, non-controlled substances in products, or a certificate declaring that a product does not contain prohibited substance

5. Before Transactions Can Begin

Epson presents new suppliers with the latest version of this standard before beginning new transactions. Please complete and submit to Epson the separately requested survey forms to meet the expectations in "4. Epson's Expectations of Suppliers" to (1) comply with this standard and (2) build and maintain a product substance assurance system.

Epson will evaluate your answers and decide whether transactions can begin.

6. When This Standard is Revised

Epson will present the revised version of this standard to you at least 30 days before the effective date each time it is updated. Please review the revised version, agree to comply with it, and notify Epson to that effect. In general, you should use the electronic survey system prescribed by Epson for notification purposes.

If you do not agree to the revised content, please contact Epson by the effective date of the revised version.

If you do not contact us, Epson will assume that you have accepted the revised version of this standard.

If Epson does not notify you at least 30 days before the effective date of the revised version, we will separately discuss how to handle the situation with you.

7. Information Handling

Generally, the documents and information that you provide for product substance control will be used only within the Epson Group. However, we may share your information with third parties if required to do so by a public agency or certification authority or by an Epson customer or other delivery destination. In this case, care will be taken to ensure your anonymity. We handle personal data in accordance with legal, regulatory, and other requirements.

8. Requests Regarding the Assurance System for Substances in Products

Below are the requirements regarding suppliers' assurance system for substances in products.

8.1 Establishment of policies and plans

8.1.1 Preparation of policies

Establish and maintain policies that incorporate actions relating to product substance control.

8.1.2 Identification of requirements

(1) Identification of legal, regulatory, and customer requirements

Control documents describing laws, regulations, and customer requirements relating to products. Keep this information up to date. Communicate information relating to product substance control to other internal departments that need it.

Key points

Exercise close internal management of substance groups specified by laws, regulations, and Epson. Make information about these substance groups readily available for viewing by all departments that need access to such information.

(2) Definition of the scope of control

Specify the processes and substances to which product substance control applies.

8.1.3 Drafting targets and plans

Define the scope of control, and set clear internal targets and plans in line with the scope of control.

Key points

Prepare plans to eliminate any substances that are scheduled for prohibition in the future and monitor progress. This should result in meeting the legal, regulatory, and Epson requirements.

8.1.4 Definition of the system, roles, authority

Establish a system (responsible person and organization) for product substance control.

Key points

- Establish a shipping assurance system, and clearly identify the responsible departments and persons [when launching new products, in mass production, when there is a 4M change (a change in man, machine, material, and manufacturing method), in supplier management, etc.].
- If using alternative goods, decide what departments are to be responsible for selecting and evaluating alternatives, and ensure that quality, legal, regulatory, and Epson requirements are met.

8.1.5 Document control

Prepare documents (including records) relating to product substance control and have in place a system for maintaining and controlling the documents.

Key points

- Document the specific procedures based on the shipping assurance system described above in item 8.1.4. Control all forms that are used.

8.1.6 Training

Identify your training needs and establish a curriculum that suits those needs and that is useful in enabling people to acquire sufficient knowledge about chemicals and other substances themselves and about their control. Provide systematic training to all employees who need it.

Key points

Prepare and implement a plan that follows a training curriculum so that legal, regulatory and Epson requirements are understood and so that operations are carried out by people who have the required knowledge and skills.

8.2 Implementation and operation

8.2.1 Design & development

Identify and implement the things that should be done in the product design and development process (design and verification) in order to avoid using substances prohibited in products.

Key points

- Specify materials in specifications, drawings, and other documentation, and clearly note requirements regarding the avoidance of prohibited substances.
- Communicate legal, regulatory, and Epson requirements to your suppliers.
- Check that the production materials used conform to all legal, regulatory, and Epson requirements.

8.2.2 Obtaining and checking substance content information

Check that all product substance information obtained from suppliers is complete and proper. Carefully check the information against the requirements.

Key points

Establish a form that allows you to check that all legal, regulatory and Epson requirements are met. Check whether the production materials procured with this form conform to all legal, regulatory, and Epson requirements.

8.2.3 Procurement management

Check whether the suppliers of the components and raw materials that comprise your products are properly controlling substances contained in products. You should have a system for urging and implementing improvements.

Key points

- Require suppliers to build and maintain a product substance assurance system based on this Green Purchasing Standard.
- Procure goods from suppliers that conform to the requirements of this Green Purchasing Standard.
- Confirm and instruct suppliers on the things they need to do based on this Green Purchasing Standard. Rectify any problems.
- Ask suppliers to request that secondary suppliers and other suppliers all the way down the supply chain build and maintain a product substance assurance system.

8.2.4 Manufacturing process

(1) Incoming checks

Clearly specify and implement inspection methods and criteria for substances in products within your own incoming checks. Check physical goods by using the proper analytical measurement methods.

Key points

- Check the data for incoming components and raw materials or conduct screening analysis to confirm that they conform to all legal, regulatory, and Epson requirements.
- If you cannot ascertain the state of control exercised over incoming components and raw materials (because recycled materials were used, etc.), physically inspect the item to verify conformance to legal, regulatory and Epson requirements.

(2) Process control

1) Control processes in a way that prevents commingling and contamination (including migration) in manufacturing processes and that prevents processes and goods from being affected by oxidation, vaporization, chemical reactions, changes in material concentrations, and so forth.

Key points

- Use separate production lines for products that have different legal, regulatory and customer requirements to prevent commingling and contamination. If lines cannot be separated, clearly specify and implement means to prevent the commingling of and contamination by substances prohibited in products in mixed product processes.
- Identify products according to legal, regulatory, and customer requirements.
- If you have inventory that includes substances prohibited in products, store goods that contain prohibited substances separately from those that do not. Keep records about goods that do and do not contain prohibited substances. For substances such as phthalates that are known to migrate from article to article, assess the risk of contamination from them in-process and implement preventive measures.
- Do not use prohibited substances in processes used to manufacture production materials destined for Epson (Appendix 1: 2.2).

2) Require contract manufacturers to comply with the requirements for controlling substances in products. Prepare and use a system for periodically checking, giving instructions on, and auditing the state of control at contract manufacturer sites.

Key points

- Require contract manufacturers to build and maintain a product substance assurance system based on this Green Purchasing Standard.
- Confirm and instruct contract manufacturers on the things they need to do based on this Green Purchasing Standard. Rectify any problems.
- Request that contract manufacturers and others down the supply chain build and maintain a product substance assurance system.
- Ask contract manufacturers not to use substances prohibited from use in manufacturing processes (see item 2.2 in Appendix 1) in manufacturing processes for production materials destined for Epson.

8.2.5 Change control

Establish and strictly follow change control rules involving product substance control.

Key points

- Provide and follow clear procedures for 4M changes
  - Define as a 4M change any change that has the potential to affect substances present in products. This includes things such as a change in manufacturer or a change in raw materials.
  - Verify that the 4M change will not lead to problems.
  - Epson needs to verify any changes that have the potential to affect the substances present in products. Notify your point of contact at Epson before implementing changes.
  - Wait for Epson to check the situation before making a 4M change.
- Control changes in the same way for your own suppliers.

8.2.6 Shipping verification

Perform shipping verification in all processes relating to product substance control. Shipping decisions must be made on the basis of reliable data.

Key points

Specify and implement a method for verifying that all legal, regulatory and Epson requirements have been met. Keep records of the results of verification.

8.2.7 Handling nonconformance

Nonconforming goods must be disposed of appropriately (including to prevent commingling with conforming products). Put in place a system for promptly reporting nonconformances to all stakeholders (officers, managers, relevant departments, suppliers, customers, etc.). Investigate the causes of accidents and take action to prevent recurrence.

Key points

- Establish who is to be responsible for reporting to Epson in the event of a nonconformance and establish the reporting procedure.
- Establish and implement a method (lot tracing) that enables you to identify nonconforming goods.
- Establish and implement clear corrective actions and preventive actions.

8.2.8 Providing information

Calculate data on specific substances contained in products so that you can provide accurate information to customers and third parties.

Key points

Establish a route for providing information in response to inquiries from Epson.

8.3 Inspection and issues needing correction

Conduct internal audits to assess product substance control practices.

Key points

- Check that procedures relating to product substance assurance are being observed. Rectify any problems.
- Conduct checks at supplier and contract manufacturer sites in accordance with “8.2.3 Procurement management” and “8.2.4 (2) Process control.”

8.4 Management review

When an internal audit shows that a problem exists, create targets, action plans, and/or other means to resolve the problem.

Key points

Continuously improve your assurance system based on the results of checks described in “8.3 Inspection and issues needing correction.”

Appendix 1: Substance Handling Standards

1. Explanation of Terms
   (1) substance prohibited in products
   A substance to which criteria (requirements, thresholds, etc.) regarding prohibition of inclusion in Epson products (including supplied accessories, options, packaging materials, etc.) are applied. These substances are classified into the following two categories:
   Level 1 prohibited substances: Substances to which criteria apply currently.
   Level 2 prohibited substances: Substances to which criteria apply from a specified date in the future.

   (2) substance prohibited from use in manufacturing processes
   A substance whose use is banned by Epson in manufacturing processes for production materials.

   (3) substance
   A chemical element or compound that either exists in nature or is obtained through a manufacturing process.

   (4) present/included
   This means that a substance is present in a component or material that comprises a product, regardless of whether the substance was added intentionally. Substances are considered to be present or included in products even if the substances remain in a product as impurities or if they are present due to unintentional mixing or contamination (including migration) from auxiliary materials, packaging, or other sources during the product manufacturing, storage, or transportation processes.
   Substances will not be considered present or included in any of the following cases, except where threshold values are specified in this standard:
   1. A substance resides in a product due to factors that are generally not possible to foresee.
   2. Quantitative data regarding the concentration of a substance that resides in a product cannot be obtained because it is present in only traces levels.

   (5) intentional inclusion
   This means that a substance remains in a component or material that comprises a product due to having been intentionally added or generated through a chemical reaction to bring specific characteristics, appearance, properties, functions, or qualities to the product.

   (6) impurity
   An impurity is a substance that is present in a naturally occurring material and that cannot be completely removed by technical means in a typical refining process for industrial material. An impurity may also be a substance that was produced synthetically and cannot be completely removed by technical means in a typical refining process.

   (7) threshold
   Threshold refers to the maximum allowable value of a specific substance that remains in components or materials that make up a product. In most cases, thresholds are defined using concentration as the measure, but there are also instances where thresholds are defined using different quantities.

   (8) concentration
   (weight of the substance) / (weight of part in which the substance is present)
   Since the denominator of the concentration differs depending on the law or regulation, please calculate the concentration of the substance based on the denominator specified for the threshold in this standard.

(9) homogeneous material
One material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions.

(10) article
An object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition; production materials other than chemical substances and mixtures (preparations) are considered to be articles.

(11) mixture (preparation)
A mixture intentionally comprising two or more chemical substances. Examples are paints, inks, alloy ingot, solder, resin pellets containing additives, etc.

(12) Scope of Application (item in the table of substances prohibited in products)
This item specifies the types of products, components, materials, and uses that the criteria for the substances listed in the table cover.

(13) Requirements and Thresholds (item in the table of substances prohibited in products)
This item specifies requirements that must be met for conformance. It indicates whether the presence of a substance is prohibited and lists concrete threshold values.

(14) Exemptions (item in the table of substances prohibited in products)
This item specifies the products, components, materials, uses or conditions to which the criteria for substances in the table do not apply. Even if products, components, materials, uses or conditions fall under the Scope of Application, the criteria do not apply if they fall under an exemption.

(15) Referenced Regulations (item in the table of substances prohibited in products)
This item specifies representative laws and regulations on which the criteria for substances listed in the table are based. Not all laws and regulations in every country and region are covered. A list of regulations corresponding to the assigned numbers in the table is provided in Table 2.1-4.

2. Substance Group Handling Standards
Standards for the handling of substance groups are shown in items 2.1 and 2.2 below.
Please ensure compliance with the specified criteria (requirements and thresholds, etc.) for the substances.

2.1 Substances Prohibited in Products
Level 1 prohibited substances
Level 2 prohibited substances
Table 2.1-1 Battery Restrictions
Table 2.1-2 EU RoHS Directive Exemptions
Table 2.1-3 Examples of Prohibited Substances & Substance Groups
Table 2.1-4 Regulations Referenced
Table 2.1-5 Analysis Standards

2.2 Substances Prohibited from Use in Manufacturing Processes

2.1 Substances Prohibited in Products

Substances prohibited in products are shown below.

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
1	Benzidine and its salts	92-87-5, etc.	All	Presence prohibited	—	16
2	4-aminodiphenyl and its salts	92-67-1, etc.	All	Presence prohibited	—	16
3	4-nitrodiphenyl and its salts	92-93-3, etc.	All	Presence prohibited	—	16
4	Bis (chloromethyl) ether	542-88-1	All	Presence prohibited	—	16
5	2-naphthylamine (also known as beta-naphthylamine) and its salts	91-59-8, etc.	All	Presence prohibited	—	16
6	Benzene	71-43-2	Rubber cement	5% in a rubber cement solvent containing a diluent	—	16
7	Polychlorinated biphenyls (PCBs) and specific substitutes	See Table 2.1-3	All	Presence prohibited	—	6, 17, 25
8	Polychlorinated terphenyls (PCTs) [*1]	See Table 2.1-3	All	Presence prohibited	—	3
9	Hexachlorobenzene	118-74-1	All	Presence prohibited	—	6, 17
10	Aldrin	309-00-2	All	Presence prohibited	—	6, 17
11	Dieldrin	60-57-1	All	Presence prohibited	—	6, 17
12	Endrin	72-20-8	All	Presence prohibited	—	6, 17
13	DDT	50-29-3	All	Presence prohibited	—	6, 17
14	Chlordane or Heptachlor	57-74-9, etc.	All	Presence prohibited	—	6, 17
15	Bis (tributyltin) oxide	56-35-9	All	Presence prohibited	—	17
16	N,N’-ditolyl-p-phenylenediamine, N-Tolyl-N’-xylyl-p-phenylenediamine, or N,N’-Dixylyl-p-phenylenediamine	27417-40-9 28726-30-9 70290-05-0	All	Presence prohibited	—	17
17	2,4,6-tri-tert-butylphenol	732-26-3	All	Presence prohibited	—	17, 25
18	Toxaphene	8001-35-2	All	Presence prohibited	—	6, 17
19	Mirex	2385-85-5	All	Presence prohibited	—	6, 17

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
20	2,2,2-trichloro-1,1-bis (4-chlorophenyl) ethanol (Kelthane or Dicofol)	115-32-2	All	Presence prohibited	—	6, 17
21	Hexachlorobuta-1,3-diene	87-68-3	All	Presence prohibited	—	6, 17, 25
22	2-(2H-Benzo[d][1,2,3]triazol-2-yl)-4,6-di-tert-butylphenol (also known as UV-320)	3846-71-7	All	Presence prohibited	—	17
23	Perfluorooctane sulfonyl fluoride (PFOS-F)[*2]	307-35-7	All	Presence prohibited	—	17
24	Pentachlorobenzene	608-93-5	All	Presence prohibited	—	6, 17
25	Alpha hexachlorocyclohexane	319-84-6	All	Presence prohibited	—	6, 17
26	Beta hexachlorocyclohexane	319-85-7	All	Presence prohibited	—	6, 17
27	Gamma hexachlorocyclohexane	58-89-9	All	Presence prohibited	—	6, 17
28	Chlordecone	143-50-0	All	Presence prohibited	—	6, 17
29	Endosulfan	115-29-7 959-98-8 33213-65-9	All	Presence prohibited	—	6, 17
30	Hexabromocyclododecane (HBCDD)	See Table 2.1-3	All	Presence prohibited	—	6, 17
31	Pentachlorophenol or its salts and esters	87-86-5, etc.	All	Presence prohibited	—	6, 17
32	DBBT (monomethyl-dibromo-diphenyl methane)	99688-47-8	All	Presence prohibited	—	3
33	DBB (di-μ-oxo-di-n-butyltin hydroxyborane)	75113-37-0	All	Presence prohibited	—	3
34	Monomethyl-tetrachloro-diphenyl methane	76253-60-6	All	Presence prohibited	—	3
35	Monomethyl-dichloro-diphenyl methane	81161-70-8	All	Presence prohibited	—	3

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
36	Polybrominated biphenyls (PBB)[*1]	See Table 2.1-3	All	Presence prohibited	—	2
37	Polybrominated diphenylethers (PBDE)	See Table 2.1-3	All	Presence prohibited	—	2, 17, 25[*3]
38	Polychlorinated naphthalene (Cl: 1 or more)	See Table 2.1-3	All	Presence prohibited	—	6, 17
39	Asbestos	See Table 2.1-3	All	Presence prohibited	—	3, 11, 25
40	Ozone-depleting substances (CFC, Halon, HBFC, HCFC & others)	See Table 2.1-3	All	Presence prohibited	—	1, 5, 18, 27
41	Dimethyl fumarate[*1]	624-49-7	All	Presence prohibited	—	3
42	Alkanes, C10-13, chloro (Short chain chlorinated paraffins)	See Table 2.1-3	All	Presence prohibited	—	6, 11, 15, 17
43	Perfluorooctane sulfonates (PFOS) and its salts[*4]	See Table 2.1-3	All	Presence prohibited	—	6.17, 34

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
44	Nickel and nickel compounds	See Table 2.1-3	Products that come into direct and prolonged contact with the skin, including watch cases and watch belts	Rate of nickel release from products: 0.5 μg/cm^2/week	Products that have a non-nickel coating that ensures that the rate of nickel release from products does not exceed 0.5 μg/cm^2/week for at least two years under normal usage conditions.	3
45	Formaldehyde	50-00-0	• Clothing or related accessories • Textiles other than clothing that come into contact with human skin to an extent similar to clothing • Footwear	75 ppm in homogeneous material	—	3
			The following composite wood products: (1) Hardwood plywood - veneer core (HWPW-VC) (2) Hardwood plywood - composite core (HWPW-CC) (3) Particleboard (PB) (4 Medium density fiberboard (MDF) (5) Thin medium density fiberboard (Thin MDF) (6) Finished goods that contain (1)-(5)	Presence is prohibited if the following regulatory requirements are not satisfied: • California Code of Regulations title17, §93120-93120.12 • TSCA Title VI • Canada SOR/2021-148	Exempt if any of the following apply: - Packaging materials - Products where the final place of consumption is outside either of the following two countries: - United States - Canada	28, 38
46	Cadmium and cadmium compounds	See Table 2.1-3	All	100 ppm in homogeneous material	Exemptions: Table 2.1-2	2
			Stabilizers, pigments, paints/inks, and plating used in products	75 ppm in homogeneous material	—	14
			Batteries	See Table 2.1-1	—	Table 2.1-1
			Packaging materials	Intentional inclusion prohibited. 100 ppm in total for heavy metals (lead, mercury, cadmium, and hexavalent chromium) present in materials as impurities.	—	7, 31

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
47	Hexavalent chromium compounds	See Table 2.1-3	All	1,000 ppm in homogeneous material	—	2
			Leather articles and articles containing leather parts that come into contact with the skin	Prohibited in leather parts in concentrations equal to or greater than 3 ppm of the total dry weight of the leather.	—	3
			Packaging materials	Intentional inclusion prohibited 100 ppm in total for heavy metals (lead, mercury, cadmium, and hexavalent chromium) present in materials as impurities.	—	7, 31
48	Lead and lead compounds	See Table 2.1-3	All	1,000 ppm in homogeneous material	Exemptions: Table 2.1-2	2, 3
			Plastics, paints, and inks used in products	Prohibited in homogeneous materials in concentrations equal to or greater than 100 ppm	—	13
			Batteries	See Table 2.1-1	—	Table 2.1-1
			Packaging materials	Intentional inclusion prohibited. 100 ppm in total for heavy metals (lead, mercury, cadmium, and hexavalent chromium) present in materials as impurities.	—	7, 31
			Thermoset and thermoplastic-sheathed electrical wires, cables and cords:	300 ppm in surface coating material	If the amount has been reported to and approved by Epson	32
			Jewelry (including watch bands)	Prohibited in individual parts in concentrations equal to or greater than 500 ppm	Exempt if any of the following apply: 1) internal watch parts that consumers do not touch 2) crystal glass 3) natural gems that have not been treated with a lead additive	3
49	Lead carbonate	598-63-0	Paint/Ink	Presence prohibited	—	13
50	Lead sulfate	7446-14-2	Paint/Ink	Presence prohibited	—	13

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
51	Mercury and mercury compounds	See Table 2.1-3	All	Intentional inclusion prohibited. Or, 1,000 ppm in homogeneous material	Exemptions: Table 2.1-2	2, 12
			Batteries	See Table 2.1-1	—	Table 2.1-1
			Packaging materials	Intentional inclusion prohibited 100 ppm in total for heavy metals (lead, mercury, cadmium, and hexavalent chromium) present in materials as impurities.	—	7, 31
52	Azocolourants and azodyes which form certain aromatic amines[*5]	—	Parts that contact the human body in products designed to come into direct and prolonged contact with the human body	Presence prohibited	—	3
53	Azodyes contained in the list of azodyes (see Table 2)	See Table 2	Substance or mixture intended for coloring leather and textile articles	Use as a substance is prohibited. Or, 1,000 ppm in mixtures	—	3
54	Cobalt chloride[*6]	7646-79-9	Silica gel and other preparations	100 ppm in silica gel and other preparations	—	3
55	Tri-substituted organostannic compounds[*7]	See Table 2.1-3	All	1,000 ppm in articles and their parts (calculated as a tin equivalent)	—	3, 15, 17
56	Dioctyltin (DOT) compounds	See Table 2.1-3	• Textile or leather articles intended to come into contact with the skin • Footwear • Childcare articles • Two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits)	1,000 ppm in articles and their parts (calculated as a tin equivalent)	—	3
57	Dibutyltin (DBT) compounds	See Table 2.1-3	Mixtures (preparations) and articles and their parts for the general public	1,000 ppm in mixtures (preparations) and articles and their parts (calculated as a tin equivalent)	—	3

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
58	Di (2-ethylhexyl) phthalate (DEHP) Dibutyl phthalate (DBP) Benzyl butyl phthalate (BBP) Diisobutyl phthalate (DIBP)	117-81-7 84-74-2 85-68-7 84-69-5	All	1,000 ppm of each substance in homogeneous materials	—	2
			Production materials not subject to the RoHS Directive (examples: carrying cases, screens, packaging materials, batteries, instruction manuals)	Prohibited in plasticized material[*8] in concentrations equal to or greater than 1,000 ppm of total DEHP, DBP, BBP, and DIBP.	Production materials corresponding to the conditions in both 1) and 2) below: 1) Production materials are not in contact with human mucous membranes and are not in prolonged contact with human skin. 2) Production materials for products exclusively for industrial or agricultural use, or for use exclusively in the open air.	3
59	Polyvinyl chloride (PVC)	9002-86-2	Packaging materials	Intentional inclusion prohibited	Packaging materials for industrial products	21
60	Red phosphorus	7723-14-0	Resin materials used in electrical or electronic parts	1,000 ppm in resin materials	Exempt if any of the following apply: 1) Present in parts or locations that are not involved in the electrical insulation between different electrodes 2) Red phosphorus is coated with a water-proof substance or a corresponding action has been taken to effectively control the generation of phosphate.	Epson policy[*9]
61	PAH Benzo[a]pyrene Benzo[e]pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[j]fluoranthene Benzo[k]fluoranthene Dibenzo[a,h]anthracene	 50-32-8 192-97-2 56-55-3 218-01-9 205-99-2 205-82-3 207-08-9 53-70-3	Production materials containing rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the skin or oral cavity	Prohibited in applicable parts and materials in concentrations of 1 ppm or more	—	3
62	4,4'-isopropylidenediphenol (bisphenol A, BPA)	80-05-7	Thermal paper	Prohibited in thermal paper in concentrations of 200 ppm or more	—	3

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
63	Perfluorooctanoic acid (PFOA) and its salts and PFOA-related compounds[*10]	See Table 2.1-3	All	Presence prohibited	Exempt if any of the following apply: 1) The sum of PFOA or any of its salts are present as impurities in substances, mixtures or articles in concentrations equal to or below 0.025 ppm (25 ppb). 2) Any individual PFOA-related compound or a combination of PFOA-related compounds are present as impurities in substances, mixtures or articles in concentrations equal to or below 1 ppm (1,000 ppb). 3) Presence is due to use of PFOA, its salts and PFOA-related compounds for photolithography or etch processes in semiconductor manufacturing: until 4 July 2024.	6, 17
64	Long-chain perfluoroalkyl carboxylate subject to the TSCA Significant New Use Rule[*11]	See Table 3	Parts that have a surface coating (including platings) and in materials for coatings	Intentional inclusion prohibited	—	26
65	Phenol, isopropylated phosphate (3:1) [PIP(3:1)]	68937-41-7	All	Presence prohibited	—	25
66	Pentachlorothiophenol (PCTP)	133-49-3	All	Presence prohibited	Cases corresponding to the conditions in both 1) and 2) below: 1) 10,000 ppm (1 wt%) or less as delivered 2) The amount was reported to and approved by Epson	25
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	See Table 2.1-3	Applications in Table 4	Intentional inclusion prohibited	—	8
68	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds[*12]	See Table 2.1-3	All	Presence prohibited	Exempt if any of the following apply: 1) Perfluorohexane sulfonic acid (PFHxS) or its salts are present in substances, mixtures or articles in concentrations equal to or below 0.025 ppm (25 ppb) 2) The sum of PFHxS-related compounds present in substances, mixtures, or articles is equal to or below 1 ppm (1,000 ppb)	6, 11

Level 1 prohibited substances: Substances to which criteria apply currently

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Referenced Regulations
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs), their salts and C9-C14 PFCA-related substances*13	See Table 2.1-3	All Depending on the application, they may be designated as Level 2 prohibited substances (substances to which criteria will apply from a specified date in the future).	Presence prohibited	Exempt if any of the following apply: 1) The sum of C9-C14 PFCAs and their salts present in substances, mixtures, or articles is below 0.025 ppm (25 ppb). 2) The sum of C9-C14 PFCA-related substances present in substances, mixtures, or articles is below 0.26 ppm (260 ppb). 3) Presence is due to use in photolithography or etch processes in semiconductor manufacturing 4) They are contained in photographic coatings applied to films.	3
70	Mineral oil aromatic hydrocarbons (MOAH) comprising 1 to 7 aromatic rings	—	Packaging material	10,000 ppm (1 wt%) in printing ink	—	39
71	Per- and poly-fluoroalkyl substances (PFAS) (*14)	See Table 2.1-3	Textile articles consisting of fibers, yarns and fabrics that include below - Natural fiber - Manmade fiber - Synthetic fiber - Natural leather, synthetic leather	Intentional inclusion prohibited. Presence in fibrous materials in concentrations equal to or greater than 100 ppm as total organic fluorine is prohibited, regards to unintentional inclusion.	—	40

Treatment of Substances Regulated by REACH Regulation No. 1907/2006

Substances subject to restrictions under Annex X-VIII shall be handled as required by law.

Reference: European Chemical Agency website https://echa.europa.eu/web/guest/home

IEC 62474 and other sources were used for the CAS Nos. Not all substances prohibited in products are covered. See Table 2.13 “Examples of Prohibited Substances & Substance Groups”.

For referenced regulations, see Table 2.1-4 “Regulations Referenced”.

Level 2 prohibited substances: Substances to which criteria apply from a specified date in the future

No.	Substance (Group) Name	CAS No.	Scope of Application	Requirements and Thresholds	Exemptions	Effective Date	Referenced Regulations
1	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs), their salts and C9-C14 PFCA-related substances[*13]	See Table 2.1-3	Semiconductor	Presence due to use in photolithography or etch processes in semiconductor manufacturing is prohibited.	Exempt if any of the following apply: 1) The sum of C9-C14 PFCAs and their salts in substances, mixtures, and articles is below 0.025 ppm (25 ppb). 2) The sum of C9-C14 PFCA-related substances in substances, mixtures, and articles is below 0.26 ppm (260 ppb).	July 5, 2024	3
			Photographic coatings applied to films	Presence prohibited			
2	Mineral oil aromatic hydrocarbons (MOAH) comprising 1 to 7 aromatic rings	—	Packaging materials and printed matter (warranties, instruction manuals, etc.)	1,000 ppm in printing ink	—	January 1, 2024	39
3	Mineral oil aromatic hydrocarbons (MOAH) comprising 3 to 7 aromatic rings	—	Packaging materials and printed matter (warranties, instruction manuals, etc.)	1 ppm in printing ink	—	January 1, 2024	39
4	Mineral oil saturated hydrocarbons (MOSH) with 16 to 35 carbon atoms	—	Packaging materials and printed matter (warranties, instruction manuals, etc.)	1,000 ppm in printing ink	—	January 1, 2024	39
5	Per- and poly-fluoroalkyl substances (PFAS) (*14)	See Table 2.1-3	Textile articles consisting of fibers, yarns and fabrics that include below - Natural fiber - Manmade fiber - Synthetic fiber - Natural leather, synthetic leather	Intentional inclusion prohibited. Presence in fibrous materials in concentrations equal to or greater than 50 ppm as total organic fluorine is prohibited, regards to unintentional inclusion.	—	January 1, 2026	40

Notes/Comments on substances

*1 Threshold per Epson policy

*2 Perfluorooctane sulfonyl fluoride (PFOS-F)

*3 Substance subject to the Toxic Substances Control Act (TSCA): Decabromodiphenyl ether (CAS. No.: 1163-19-5)

*4 Substance groups having C8F17SO2X [X=OH, Metal salts (O-M+), halide, amide, and other derivatives including polymers] Also known as perfluorooctane sulfonic acid.

*5 "Azocolourants and azodyes which form certain aromatic amines" means azo dyes/pigments that have the potential to generate aromatic amines listed in Table 1 at levels exceeding 30 ppm within the colored parts.

*6 Indicator cards are exempt because there are no risk of aspirating cobalt chloride under ordinary conditions (ordinary use).

*7 Refers to tributyltin (TBT) compounds / triphenyltin (TPT) compounds / other tri-substituted organostannic compounds. However, the presence of Bis (tributyltin) oxide is prohibited since it belongs to a group of substances that is unconditionally banned under Japan's Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances. (See No. 15.)

*8 "Plasticized material" means any of the following homogeneous materials:

– polyvinyl chloride (PVC), polyvinylidene chloride (PVDC), polyvinyl alcohol (PVA), polyurethanes;

– any other polymer (including, inter alia, polymer foams and rubber material) except silicone rubber and natural latex coatings;

– surface coatings, non-slip coatings, finishes, decals, printed designs;

– adhesives, sealants, paints and inks.

*9 To prevent a fire

For details on red phosphorus, see https://corporate.epson/ja/sustainability/supply-chain/pdf/seg_k_0100_rp_e.pdf

*10 Also known as perfluorooctane acid. The threshold is determined by national or local laws pursuant to the Stockholm Convention

PFOA-related compounds:

- Any substances (including salts and polymers) having a linear or branched perfluoroheptyl group with the moiety $(C_7F_{15})C$ as one of the structural elements.
- However, the following compounds are not included:
  - C_8F_{17}-X, where X = F, Cl, Br
  - fluoropolymers that are covered by $CF_3[CF_2]_n$-R', where R' = any group, n> 16
  - perfluoroalkyl carboxylic acids (including their salts, esters, halides and anhydrides) with ≥ 8 perfluorinated carbons
  - perfluoroalkane sulfonic acids and perfluoro phosphonic acids (including their salts, esters, halides and anhydrides) with ≥ 9 perfluorinated carbons
  - perfluorooctane sulfonic acid and its derivatives

*11 Applies to substances specified in 40 C.F.R. § 721.10536 (b) (2). See the Federal Register Notice for details.

*12 Also known as perfluorohexane sulfonic acid.

PFHxS-related compounds: Any substances (including salts and polymers) having a linear or branched perfluorohexyl group with the formula C_6F_{13} directly attached to a sulfur atom as one of the structural elements and that degrade to PFHxS

*13 C9-C14 PFCAs:

- Linear and branched perfluorocarboxylic acids of the formula C_nF_{2n+1}-C(= O)OH, where n = 8, 9, 10, 11, 12, or 13

C9-C14 PFCA-related substances:

- Any substance (including salts and any combinations thereof) having a perfluoro group with the formula C_nF_{2n+1}- directly attached to another carbon atom, where n = 8, 9, 10, 11, 12, or 13, and that has the potential to degrade to C9-C14 PFCAs
- Any substance (including salts and any combinations thereof) having a perfluoro group with the formula CnF2n +1- that it is not directly attached to another carbon atom, where n = 9, 10, 11, 12, 13 or 14 as one of the structural elements and that has the potential to degrade to C9-C14 PFCAs
- However, the following substances are not included:
  - C_nF_{2n+1}-X, where X = F, Cl, or Br and n = 9, 10, 11, 12, 13 or 14, including any combinations thereof
  - C_nF_{2n+1}-C(= O)OX', where n> 13 and X' = any group, including salts

*14 "Per- and poly-fluoroalkyl substances (PFAS)" means a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

Table 1: List of Some Aromatic Amines

No.	Substance Name	CAS No.
1	Biphenyl-4-ylamine	92-67-1
2	Benzidine	92-87-5
3	4-chloro-o-toluidine	95-69-2
4	2-naphthylamine	91-59-8
5	o-aminoazotoluene	97-56-3
6	5-nitro-o-toluidine	99-55-8
7	4-chloroaniline	106-47-8
8	4-methoxy-m-phenylenediamine	615-05-4
9	4,4'-methylenedianiline	101-77-9
10	3,3'-dichlorobenzidine	91-94-1
11	3,3'-dimethoxybenzidine	119-90-4
12	3,3'-dimethylbenzidine	119-93-7
13	4,4'-methylenedi-o-toluidine	838-88-0
14	6-methoxy-m-toluidine	120-71-8
15	4,4'-methylene-bis(2-chloroaniline)	101-14-4
16	4,4'-oxydianiline	101-80-4
17	4,4'-thiodianiline	139-65-1
18	o-toluidine	95-53-4
19	4-methyl-m-phenylenediamine	95-80-7
20	2,4,5-trimethylaniline	137-17-7
21	o-anisidine	90-04-0
22	4-amino azobenzene	60-09-3

Table 2: List of azodyes

Substance Name	CAS No.
A mixture of disodium(6-(4-anisidino)-3-sulfonato-2-(3.5-dinitro-2-oxidophenylazo) -1-naohtholato)(1-(5-chloro-2-oxidophenylazo)-2-naphtholato)chromate(1-); trisodium bis(6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)chromate(1-)	Not allocated Component 1: CAS-No.:118685-33-9 $C_{39}H_{23}ClCrN_7O_{12}S.2Na$ Component 2: $C_{46}H_{30}CrN_{10}O_{20}S2.3Na$

Table 3: List of long-chain perfluoroalkyl carboxylate subject to the TSCA Significant New Use Rule[*11]

No.	Substance (Group) Name	CAS No.	Notes
1	Sodium;2-methylpropane-1-sulfonate	68187-47-3	Use in adhesives is exempt.
2	1,1,2,2-Tetrahydroperfluoroalkyl (C8-C14) alcohol	68391-08-2	Uses in the manufacture or processing of surface coatings and finishes for surface treatments of textiles, leather, and hard materials (resins, wood, metals, etc.), and in the manufacture of wetting agents are exempt.
3	Thiols, C8-20, gamma-omegaperfluoro, telomers with acrylamide	70969-47-0	—
4	Thiols, C4-20, gamma-omega-perfluoro, telomers with acrylamide and acrylic acid, sodium salts	1078712-88-5	—
5	1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-(2-((gamma-omega-perfluoro-C4-20-alkyl)thio)acetyl) derivs., inner salts	1078715-61-3	—
6	Polyfluoroalkyl betaine	CBI	EPA accession number about CBI (Confidential Business Information): 71217
7	Modified fluoroalkyl urethane	CBI	EPA accession number about CBI (Confidential Business Information): 89419
8	Perfluorinated polyamine	CBI	EPA accession number about CBI (Confidential Business Information): 274147
9	Perfluorooctyl iodide	507-63-1	Substances included in “No. 63 PFOA and its salts and PFOA-related compounds” in Level 1 Prohibited Substances
10	Tetrahydroperfluoro-1-decanol	678-39-7	
11	Perfluoro-1-dodecanol	865-86-1	
12	Perfluorodecyl iodide	2043-53-0	
13	1,1,2,2-Tetrahydroperfluorododecyl iodide	2043-54-1	
14	Perfluorodecylethyl acrylate	17741-60-5	
15	1,1,2,2-Tetrahydroperfluorodecyl acrylate	27905-45-9	
16	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafluoro-14-iodotetradecane	30046-31-2	
17	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Pentacosafluorotetradecan-1-ol	39239-77-5	
18	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-Nonacosafluorohexadecan-1-ol	60699-51-6	
19	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-Nonacosafluoro-16-iodohexadecane	65510-55-6	
20	Silicic acid (H_4SiO_4), sodium salt (1:2), reaction products with chlorotrimethylsilane and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decanol	125476-71-3	—

Table 4: Uses for which the intentional inclusion of fluorinated greenhouse gases (PFCs, SF6, HFCs) is prohibited

Substance	Prohibited Uses	Exemptions, Date of Prohibition
PFCs, SF6, HFCs	Non-refillable containers, windows, footwear, tires	–
	One-component foams	Except when required to meet safety standards
HFCs, PFCs	Non-confined direct evaporation systems	–
PFCs, HFC-23	Fire protection equipment	–
HFCs (with a GWP of 150 or more)	Aerosol generators marketed and intended for sale to the general public for entertainment and decorative purposes; domestic refrigerators and freezers; industrial aerosol products; refrigerators and freezers for commercial use (with a GWP of 2,500 or more); movable room air-conditioning equipment; foam (extruded polystyrene) used for insulation, soundproofing, etc.	–
	Stationary refrigeration equipment (with a GWP2500 or more)	Except equipment intended for applications designed to cool products to temperatures below –50 °C
	Refrigerators and freezers for commercial use (with a GWP of less than 2,500) and multipack centralized refrigeration systems for commercial use with a rated capacity of 40 kW or more	–
	Foam used for insulation, soundproofing, etc. (and other foams)	–
	Single split air-conditioning systems containing less than 3 kg of fluorinated GHGs with GWP of 750 or more	Date of Prohibition: 2025/1/1

Table 2.1-1 Battery Restrictions

Primary battery						
Battery type			Substances prohibited in products, requirements, and thresholds			
			Cadmium and cadmium compounds	Lead and lead compounds	Mercury and mercury compounds	Referenced regulations
1	Alkaline battery	Button cell	10 ppm by weight of the battery	40 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 5 ppm in homogeneous material and 25 mg per button cell.	4, 19, 20, 24, 29, 30, 33, 36, 37
		Non-button cell	10 ppm by weight of the battery	40 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 1 ppm by weight of the battery and 5 ppm in homogeneous material.	4, 19, 20, 22, 23, 24, 29, 33
2	Manganese battery	All	10 ppm by weight of the battery	100 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 1 ppm by weight of the battery and 5 ppm in homogeneous material.	4, 19, 20, 22, 23, 24, 29, 30, 33, 37
3	Mercury-oxide battery	All	Use prohibited			4, 19, 24, 29, 30
4	Silver-oxide battery	Button cell	20 ppm by weight of the battery	100 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 5 ppm in homogeneous material and 25 mg per button cell.	4, 19, 23, 24, 30, 33, 36
5	Zinc-air battery	Button cell	20 ppm by weight of the battery	100 ppm by weight of the battery		
6	Other primary battery	All	20 ppm by weight of the battery	100 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 5 ppm in homogeneous material and 25 mg per button cell.	4, 19, 24, 30, 33, 35, 36

Table 2.1-1 Battery Restrictions

Secondary battery						
Battery type			Substances prohibited in products, requirements, and thresholds			
			Cadmium and cadmium compounds	Lead and lead compounds	Mercury and mercury compounds	Referenced regulations
7	Ni-MH battery, Alkaline secondary battery	Button cell	20 ppm by weight of the battery	100 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 5 ppm in homogeneous material and 25 mg per button cell.	4, 19, 24, 33, 36
		Non-button cell	10 ppm by weight of the battery	100 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 1 ppm by weight of the battery and 5 ppm in homogeneous material.	4, 19, 20, 24, 33, 36
8	Lead-acid battery	Use prohibited except for industrial/commercial batteries*				4, 36
		Industrial / commercial batteries	100 ppm by weight of the battery	—	Intentional inclusion prohibited If present as an impurity, 5 ppm in homogeneous material.	4, 19, 24, 33, 37
9	Other secondary battery	All	20 ppm by weight of the battery	100 ppm by weight of the battery	Intentional inclusion prohibited If present as an impurity, 5 ppm in homogeneous material and 25 mg per button cell.	4, 19, 24, 33, 36

* Commercial/industrial battery: A battery weighing 5 kg or more and designed exclusively for industrial or commercial use.

Table 2.1-2 EU RoHS Directive Exemptions

Table 2.1-2 lists exemptions that apply to Epson and exemption expiration dates. If the item is not listed, please check the legal exemption and its expiration date. Please contact Epson if you have any questions.

Reference: EU Commission website https://environment.ec.europa.eu/topics/waste-and-recycling/rohs-directive_en

This table lists exemptions and expiration dates based on legal requirements that are current as of August 1, 2023.
If the exemptions and their expiration dates are revised in conjunction with amendments to the exemptions of the RoHS Directive, please apply the exemptions and expiration dates of the latest legal requirements to this table.

Substances: Cadmium and Cadmium Compounds			
No.	Exemption *1	Expiration	Legal expiration date*1
8(b)*2	Cadmium and its compounds in electrical contacts	One year prior to the legal expiration date*4	7/21/2024
8(b)-I*3	Cadmium and its compounds in electrical contacts used in: - circuit breakers, - thermal sensing controls, - thermal motor protectors (excluding hermetic thermal motor protectors), - AC switches rated at: - 6 A and more at 250 V AC and more, or - 12 A and more at 125 V AC and more, - DC switches rated at 20 A and more at 18 V DC and more, and - switches for use at voltage supply frequency ≥ 200 Hz.		7/21/2021
13(b)*2	Cadmium in filter glasses and glasses used for reflectance standards		7/21/2024
13(b)-II*3	Cadmium in striking optical filter glass types; excluding applications falling under point 39 of this Annex		7/21/2021

Table 2.1-2 EU RoHS Directive Exemptions

Substances: Lead and Lead Compounds			
No.	Exemption [*1]	Expiration	Legal expiration date [*1]
5 (b)	Lead in glass of fluorescent tubes not exceeding 0.2% by weight	Expired[*6]	Undecided
6 (a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight	Expired	6/30/2019 *[5]
6(a)-I [*7]	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 weight	One year prior to the legal expiration date [*4]	7/21/2021 [*5]
6 (b)	Lead as an alloying element in aluminum containing up to 0.4% lead by weight	Expired	6/30/2019 [*5]
6 (b)-I [*7]	Lead as an alloying element in aluminum containing up to 0.4 % lead by weight, provided it stems from lead-bearing aluminum scrap recycling	One year prior to the legal expiration date [*4]	7/21/2021 [*5]
6 (b)-II [*7]	Lead as an alloying element in aluminum for machining purposes with a lead content up to 0.4 % by weight		5/18/2021 [*5]
6 (c)	Copper alloy containing up to 4% lead by weight		7/21/2021 [*5]
7 (a)	Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)		7/21/2021 [*5]
7 (b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications	Expired	7/21/2016 [*5]
7 (c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g., piezoelectronic devices, or in a glass or ceramic matrix compound	One year prior to the legal expiration date [*4]	7/21/2021 [*5]
7 (c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	One year prior to the legal expiration date [*4]	7/21/2021 [*5]
7 (c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expired	1/1/2013
7 (c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	One year prior to the legal expiration date [*4]	7/21/2021 [*5]
13 (a)	Lead in white glass used for optical applications	One year prior to the legal expiration date [*4]	7/21/2021 [*5]
15 (a)	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	Expired [*6]	2/29/2020 [*5] [*8]
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	Expired [*6]	7/21/2021 [*5]
34	Lead in cermet-based trimmer potentiometer elements	One year prior to the legal expiration date[*4]	7/21/2021 [*5]

Table 2.1-2 EU RoHS Directive Exemptions

Substance: Mercury and mercury compounds			
Epson prohibits the use of all exemptions for mercury and mercury compounds except those listed below.			
No.	Exemption *1	Expiration	Legal expiration date *1
4(f)-I	Mercury in other discharge lamps not specifically mentioned in RoHS Directive annexes	One year prior to the legal expiration date *4	2/24/2025
4(f)-II	Mercury in high-pressure mercury vapor lamps used in projectors where an output ≥ 2000 lumen ANSI is required		2/24/2027
4(f)-III	Mercury in high-pressure sodium vapor lamps used for horticulture lighting		2/24/2027
4(f)-IV	Mercury in lamps emitting light in the ultraviolet spectrum		2/24/2027

1 If the exemptions and their expiration dates are revised in conjunction with amendments to the exemptions of the RoHS Directive, please apply the exemptions and expiration dates of the latest legal requirements to this table

*2 Category 9 industrial monitoring and control equipment, and Category 11 exemptions

*3 Categories 1–7 and 10 electrical and electronic equipment exemptions

*4 The exemption expiration date is one year prior to the legal expiration date. If the exemptions and their expiration dates are revised based on amendments to the exemptions of the RoHS Directive, please comply with the latest legal requirements. However, exemptions may be approved after the expiration date only if you receive instructions from the Epson Group or the Epson Group has verified that legal and customer requirements can be met.
Example: If the materials are spare parts for a product that was put on the market prior to the legal expiration date. If an extension request has already been submitted and the substance can be used until the expiration date is decided by review.
In this case, we ask that you continue your efforts to develop alternatives so that you are prepared to begin shipping alternatives as soon as the legal expiration date is finalized. Your cooperation is greatly appreciated.
There are items whose legal expiration date has passed, but an extension request has already been submitted, so they can be used until one year prior to the new expiration date.

*5 The legal expiration date for the following electrical and electronic equipment is 7/21/2024:
- Category 9 monitoring and control instruments
- Category 11 electrical and electronic equipment

*6 The Epson Group has already prohibited these substances in goods delivered to the Epson Group in advance of the legal expiration date.

*7 New exempted applications under either 6(a) or 6(b).

*8 The expiration date is 7/21/2021 if any of the following criteria apply:
- a semiconductor technology node of 90 nm or larger;
- a single die of 300 mm^2 or larger in any semiconductor technology node;
- stacked die packages with die of 300 mm^2 or more, or silicon interposers of 300 mm^2 or larger

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
7	Polychlorinated biphenyls (PCBs) and specific substitutes	Polychlorinated biphenyls (all isomers and congeners)	1336-36-3
7	Polychlorinated biphenyls (PCBs) and specific substitutes	Monomethyl-tetrachloro-diphenyl methane	76253-60-6
7	Polychlorinated biphenyls (PCBs) and specific substitutes	Monomethyl-dichloro-diphenyl methane	81161-70-8
7	Polychlorinated biphenyls (PCBs) and specific substitutes	Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8
8	Polychlorinated terphenyls (PCTs)	Polychlorinated terphenyls (PCT) (all isomers and congeners)	61788-33-8
30	Hexabromocyclododecane (HBCDD)	Hexabromocyclododecane (HBCDD)	25637-99-4
30	Hexabromocyclododecane (HBCDD)	alpha-hexabromocyclododecane	134237-50-6
30	Hexabromocyclododecane (HBCDD)	beta-hexabromocyclododecane	134237-51-7
30	Hexabromocyclododecane (HBCDD)	gamma-hexabromocyclododecane	134237-52-8
30	Hexabromocyclododecane (HBCDD)	1,2,5,6,9,10-hexabromocyclodecane	3194-55-6
36	Polybrominated biphenyls (PBB)	Polybrominated biphenyls	59536-65-1
36	Polybrominated biphenyls (PBB)	Dibromobiphenyl	92-86-4
36	Polybrominated biphenyls (PBB)	2-Bromobiphenyl	2052-07-5
36	Polybrominated biphenyls (PBB)	3-Bromobiphenyl	2113-57-7
36	Polybrominated biphenyls (PBB)	4-Bromobiphenyl	92-66-0
36	Polybrominated biphenyls (PBB)	Tribromobiphenyl	59080-34-1
36	Polybrominated biphenyls (PBB)	Tetrabromobiphenyl	40088-45-7
36	Polybrominated biphenyls (PBB)	Pentabromobiphenyl	56307-79-0
36	Polybrominated biphenyls (PBB)	Hexabromobiphenyl	59080-40-9
36	Polybrominated biphenyls (PBB)	hexabromo-1,1-biphenyl	36355-01-8
36	Polybrominated biphenyls (PBB)	Firemaster FF-1	67774-32-7
36	Polybrominated biphenyls (PBB)	Heptabromobiphenyl	35194-78-6
36	Polybrominated biphenyls (PBB)	Octabromobiphenyl	61288-13-9
36	Polybrominated biphenyls (PBB)	Nonabromobiphenyl	27753-52-2
36	Polybrominated biphenyls (PBB)	Decabromobiphenyl	13654-09-6
37	Polybrominated diphenylethers (PBDE)	Bromodiphenyl ether	101-55-3
37	Polybrominated diphenylethers (PBDE)	Dibromodiphenyl ethers	2050-47-7
37	Polybrominated diphenylethers (PBDE)	Tribromodiphenyl ether	49690-94-0
37	Polybrominated diphenylethers (PBDE)	Tetrabromodiphenyl ethers	40088-47-9
37	Polybrominated diphenylethers (PBDE)	Hexabromodiphenyl ether	36483-60-0
37	Polybrominated diphenylethers (PBDE)	Heptabromodiphenylether	68928-80-3
37	Polybrominated diphenylethers (PBDE)	Nonabromodiphenylether	63936-56-1
37	Polybrominated diphenylethers (PBDE)	Decabromodiphenyl ether	1163-19-5
37	Polybrominated diphenylethers (PBDE)	Pentabromodiphenyl ether	32534-81-9
37	Polybrominated diphenylethers (PBDE)	Octabromodiphenyl ether	32536-52-0
38	Polychlorinated naphthalene (Cl: 1 or more)	Naphthalene, chloro derivatives	70776-03-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1-Chloronaphthalene	90-13-1
38	Polychlorinated naphthalene (Cl: 1 or more)	2-Chloronaphthalene	91-58-7
38	Polychlorinated naphthalene (Cl: 1 or more)	1,5-Dichloronaphthalene	1825-30-5
38	Polychlorinated naphthalene (Cl: 1 or more)	1,4-Dichloronaphthalene	1825-31-6
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2-Dichloronaphthalene	2050-69-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,6-Dichloronaphthalene	2050-72-8

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
38	Polychlorinated naphthalene (Cl: 1 or more)	1,7-Dichloronaphthalene	2050-73-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,8-Dichloronaphthalene	2050-74-0
38	Polychlorinated naphthalene (Cl: 1 or more)	2,3-Dichloronaphthalene	2050-75-1
38	Polychlorinated naphthalene (Cl: 1 or more)	2,6-Dichloronaphthalene	2065-70-5
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3-Dichloronaphthalene	2198-75-6
38	Polychlorinated naphthalene (Cl: 1 or more)	2,7-Dichloronaphthalene	2198-77-8
38	Polychlorinated naphthalene (Cl: 1 or more)	Chloronaphthalene	25586-43-0
38	Polychlorinated naphthalene (Cl: 1 or more)	Dichloronaphthalene	28699-88-9
38	Polychlorinated naphthalene (Cl: 1 or more)	Pentachloronaphthalene	1321-64-8
38	Polychlorinated naphthalene (Cl: 1 or more)	Trichloronaphthalene	1321-65-9
38	Polychlorinated naphthalene (Cl: 1 or more)	Hexachloronaphthalene	1335-87-1
38	Polychlorinated naphthalene (Cl: 1 or more)	Tetrachloronaphthalene	1335-88-2
38	Polychlorinated naphthalene (Cl: 1 or more)	Perchloronaphthalene	2234-13-1
38	Polychlorinated naphthalene (Cl: 1 or more)	1,4,6-Trichloronaphthalene	2437-54-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,4,5-Trichloronaphthalene	2437-55-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,4,5,8-Tetrachloronaphthalene	3432-57-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,8-Tetrachloronaphthalene	6529-87-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,5-Tetrachloronaphthalene	6733-54-6
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,6,7,8-Hexachloronaphthalene	17062-87-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4-Tetrachloronaphthalene	20020-02-4
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,5,8-Tetrachloronaphthalene	31604-28-1
38	Polychlorinated naphthalene (Cl: 1 or more)	Heptachloronaphthalene	32241-08-0
38	Polychlorinated naphthalene (Cl: 1 or more)	2,3,6,7-Tetrachloronaphthalene	34588-40-4
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4-Trichloronaphthalene	50402-51-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3-Trichloronaphthalene	50402-52-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,5-Trichloronaphthalene	51570-43-5
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,6-Trichloronaphthalene	51570-44-6
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,6-Tetrachloronaphthalene	51570-45-7
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5-Tetrachloronaphthalene	53555-63-8
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,5,7-Tetrachloronaphthalene	53555-64-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5,7-Pentachloronaphthalene	53555-65-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,5-Trichloronaphthalene	55720-33-7
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,7-Trichloronaphthalene	55720-34-8
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,8-Trichloronaphthalene	55720-35-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,6-Trichloronaphthalene	55720-36-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,7-Trichloronaphthalene	55720-37-1
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,8-Trichloronaphthalene	55720-38-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,6,7-Trichloronaphthalene	55720-39-3
38	Polychlorinated naphthalene (Cl: 1 or more)	2,3,6-Trichloronaphthalene	55720-40-6
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,7-Tetrachloronaphthalene	55720-41-7
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,6,7-Tetrachloronaphthalene	55720-42-8
38	Polychlorinated naphthalene (Cl: 1 or more)	1,4,6,7-Tetrachloronaphthalene	55720-43-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,5,6,7-Heptachloronaphthalene	58863-14-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,5,6,8-Heptachloronaphthalene	58863-15-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,5,6-Hexachloronaphthalene	58877-88-6
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,7-Tetrachloronaphthalene	67922-21-8

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,5,6-Tetrachloronaphthalene	67922-22-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,5,7-Tetrachloronaphthalene	67922-23-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,6,8-Tetrachloronaphthalene	67922-24-1
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,5-Pentachloronaphthalene	67922-25-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,6-Pentachloronaphthalene	67922-26-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,5,7-Hexachloronaphthalene	67922-27-4
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,5,6,8-Hexachloronaphthalene	90948-28-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,5,7,8-Hexachloronaphthalene	103426-92-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,5,8-Hexachloronaphthalene	103426-93-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5,7,8-Hexachloronaphthalene	103426-94-4
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5,6,8-Hexachloronaphthalene	103426-95-5
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,4,6,7-Hexachloronaphthalene	103426-96-6
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5,6,7-Hexachloronaphthalene	103426-97-7
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,6-Tetrachloronaphthalene	149864-78-8
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,6,7-Tetrachloronaphthalene	149864-79-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,5,8-Tetrachloronaphthalene	149864-80-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,8-Tetrachloronaphthalene	149864-81-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,7,8-Tetrachloronaphthalene	149864-82-4
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,7,8-Pentachloronaphthalene	150205-21-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,3,6,8-Tetrachloronaphthalene	150224-15-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,6,7-Pentachloronaphthalene	150224-16-1
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,6,7-Pentachloronaphthalene	150224-17-2
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5,6-Pentachloronaphthalene	150224-18-3
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,5,7-Pentachloronaphthalene	150224-19-4
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,5,6-Pentachloronaphthalene	150224-20-7
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,7,8-Pentachloronaphthalene	150224-21-8
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,6,8-Pentachloronaphthalene	150224-22-9
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,6,8-Pentachloronaphthalene	150224-23-0
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,3,5,8-Pentachloronaphthalene	150224-24-1
38	Polychlorinated naphthalene (Cl: 1 or more)	1,2,4,5,8-Pentachloronaphthalene	150224-25-2
39	Asbestos	Asbestos	1332-21-4
39	Asbestos	Actinolite	77536-66-4
39	Asbestos	Amosite (Grunerite)	12172-73-5
39	Asbestos	Anthophyllite	77536-67-5
39	Asbestos	Chrysotile	12001-29-5
39	Asbestos	Crocidolite	12001-28-4
39	Asbestos	Tremolite	77536-68-6
40	Ozone-depleting substances	CFC-11	75-69-4
40	Ozone-depleting substances	CFC-12	75-71-8
40	Ozone-depleting substances	CFC-13	75-72-9
40	Ozone-depleting substances	CFC-111	354-56-3
40	Ozone-depleting substances	CFC-112 CFC-112 CFC-112a	76-12-0 76-12-0 76-11-9
40	Ozone-depleting substances	CFC-113 CFC-113 CFC-113a	76-13-1 76-13-1 354-58-5

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
40	Ozone-depleting substances	CFC-114	76-14-2
40	Ozone-depleting substances	CFC-115	76-15-3
40	Ozone-depleting substances	CFC-211 CFC-211aa CFC-211ba	422-78-6 135401-87-5 422-78-6 422-81-1
40	Ozone-depleting substances	CFC-212	3182-26-1
40	Ozone-depleting substances	CFC-213	2354-06-5 134237-31-3
40	Ozone-depleting substances	CFC-214 CFC-214aa CFC-214cb	29255-31-0 2268-46-4 -
40	Ozone-depleting substances	CFC-215 CFC-215aa CFC-215ba CFC-215bb CFC-215cb CFC-215ca	1599-41-3 1599-41-3 76-17-5 - - 4259-43-2
40	Ozone-depleting substances	CFC-216	661-97-2
40	Ozone-depleting substances	CFC-217	422-86-6
40	Ozone-depleting substances	Halon-1011	74-97-5
40	Ozone-depleting substances	Halon-1202	75-61-6
40	Ozone-depleting substances	Halon-1211	353-59-3
40	Ozone-depleting substances	Halon-1301	75-63-8
40	Ozone-depleting substances	Halon-2402	124-73-2
40	Ozone-depleting substances	carbon tetrachloride	56-23-5
40	Ozone-depleting substances	Methylchloroform	71-55-6
40	Ozone-depleting substances	methyl bromide	74-83-9
40	Ozone-depleting substances	ethyl bromide	74-96-4
40	Ozone-depleting substances	trifluoromethyl iodide	2314-97-8
40	Ozone-depleting substances	methyl chloride	74-87-3
40	Ozone-depleting substances	HBFC-21 B2	1868-53-7
40	Ozone-depleting substances	HBFC-22 B1	1511-62-2
40	Ozone-depleting substances	HBFC-31 B1	373-52-4
40	Ozone-depleting substances	HBFC-121 B4	306-80-9
40	Ozone-depleting substances	HBFC-122 B3	-
40	Ozone-depleting substances	HBFC-123 B2	354-04-1
40	Ozone-depleting substances	HBFC-124 B1	124-72-1
40	Ozone-depleting substances	HBFC-131 B3	-
40	Ozone-depleting substances	HBFC-132 B2	75-82-1
40	Ozone-depleting substances	HBFC-133 B1	421-06-7
40	Ozone-depleting substances	HBFC-141 B2	358-97-4
40	Ozone-depleting substances	HBFC-142 B1	420-47-3
40	Ozone-depleting substances	HBFC-151 B1	762-49-2
40	Ozone-depleting substances	HBFC-221 B6	-
40	Ozone-depleting substances	HBFC-222 B5	-
40	Ozone-depleting substances	HBFC-223 B4	-
40	Ozone-depleting substances	HBFC-224 B3	-

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Chemical Group	Substance Name	CAS No.
40	Ozone-depleting substances	HBFC-225 B2	431-78-7
40	Ozone-depleting substances	HBFC-226 B1	2252-78-0
40	Ozone-depleting substances	HBFC-231 B5	-
40	Ozone-depleting substances	HBFC-232 B4	-
40	Ozone-depleting substances	HBFC-233 B3	-
40	Ozone-depleting substances	HBFC-234 B2	-
40	Ozone-depleting substances	HBFC-235 B1	460-88-8
40	Ozone-depleting substances	HBFC-241 B4	-
40	Ozone-depleting substances	HBFC-242 B3	70192-80-2
40	Ozone-depleting substances	HBFC-243 B2	431-21-0
40	Ozone-depleting substances	HBFC-244 B1	679-84-5
40	Ozone-depleting substances	HBFC-251 B3	75372-14-4
40	Ozone-depleting substances	HBFC-252 B2	460-25-3
40	Ozone-depleting substances	HBFC-253 B1	421-46-5
40	Ozone-depleting substances	HBFC-261 B2	51584-26-0
40	Ozone-depleting substances	HBFC-262 B1	-
40	Ozone-depleting substances	HBFC-271 B1	1871-72-3
40	Ozone-depleting substances	HCFC-21	75-43-4
40	Ozone-depleting substances	HCFC-22	75-45-6
40	Ozone-depleting substances	HCFC-31	593-70-4
40	Ozone-depleting substances	HCFC-121 HCFC-121 HCFC-121a	134237-32-4 354-14-3 354-11-0
40	Ozone-depleting substances	HCFC-122 HCFC-122 HCFC-122a HCFC-122b	41834-16-6 354-21-2 354-15-4 354-12-1
40	Ozone-depleting substances	HCFC-123 HCFC-123 HCFC-123a HCFC-123b	34077-87-7 306-83-2 354-23-4 90454-18-5 812-04-4
40	Ozone-depleting substances	HCFC-124 HCFC-124 HCFC-124a	63938-10-3 2837-89-0 354-25-6
40	Ozone-depleting substances	HCFC-131 HCFC-131 HCFC131a HCFC-131b	27154-33-2; (134237-34-6) 359-28-4 811-95-0 2366-36-1
40	Ozone-depleting substances	HCFC-132 HCFC-132 HCFC-132a HCFC-132b HFCF-132c	25915-78-0 431-06-1 471-43-2 1649-08-7 1842-05-3
40	Ozone-depleting substances	HCFC-133 HCFC-133 HCFC-133a HCFC-133b	1330-45-6 431-07-2 1330-45-6 75-88-7 421-04-5

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
40	Ozone-depleting substances	HCFC-141 HCFC-141 HCFC-141a HCFC-141b	1717-00-6; (25167-88-8) 430-57-9 430-53-5 1717-00-6
40	Ozone-depleting substances	HCFC-142 HCFC-142 HCFC-142b HCFC-142a	25497-29-4 338-65-8 75-68-3 338-64-7
40	Ozone-depleting substances	HCFC-151 HCFC-151 HCFC-151a	110587-14-9 762-50-5 1615-75-4
40	Ozone-depleting substances	HCFC-221 HCFC-221ab	134237-35-7 29470-94-8 422-26-4
40	Ozone-depleting substances	HCFC-222 HCFC-222ca HCFC-222aa	134237-36-8 422-49-1 422-30-0
40	Ozone-depleting substances	HCFC-223 HCFC-223ca HCFC-223cb	134237-37-9 422-52-6 422-50-4
40	Ozone-depleting substances	HCFC-224 HCFC-224ca HCFC-224cb HCFC-224cc	134237-38-0 422-54-8 422-53-7 422-51-5
40	Ozone-depleting substances	HCFC-225 HCFC-225aa HCFC-225ba HCFC-225bb HCFC-225ca HCFC-225cb HCFC-225cc HCFC-225da HCFC-225ea HCFC-225eb	127564-92-5 128903-21-9 422-48-0 422-44-6 422-56-0 507-55-1 13474-88-9 431-86-7 136013-79-1 111512-56-2
40	Ozone-depleting substances	HCFC-226 HCFC-226da	134308-72-8 431-87-8
40	Ozone-depleting substances	HCFC-231 HCFC-231bb	134190-48-0 421-94-3
40	Ozone-depleting substances	HCFC-232 HCFC-232fc	134237-39-1 460-89-9
40	Ozone-depleting substances	HCFC-233 HCFC-233fb	134237-40-4 7125-83-9
40	Ozone-depleting substances	HCFC-234 HCFC-234db	127564-83-4 425-94-5
40	Ozone-depleting substances	HCFC-235 HCFC-235fa	134237-41-5 460-92-4
40	Ozone-depleting substances	HCFC-241 HCFC-241db	134190-49-1 666-27-3
40	Ozone-depleting substances	HCFC-242 HCFC-242fa	134237-42-6 460-63-9

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
40	Ozone-depleting substances	HCFC-243 HCFC-243cc HCFC-243db HCFC-243fa	134237-43-7 7125-99-7 338-75-0 460-69-5
40	Ozone-depleting substances	HCFC-244 HCFC-244ca HCFC-244cc	134190-50-4 679-85-6 421-75-0
40	Ozone-depleting substances	HCFC-251 HCFC-251fb HCFC-251dc	134190-51-5 818-99-5 421-41-0
40	Ozone-depleting substances	HCFC-252 HCFC-252fb	134190-52-6 819-00-1
40	Ozone-depleting substances	HCFC-253 HCFC-253fb	134237-44-8 460-35-5
40	Ozone-depleting substances	HCFC-261 HCFC-261fc HCFC-261ba	134237-45-9 7799-56-6 420-97-3
40	Ozone-depleting substances	HCFC-262 HCFC-262ca HCFC-262da HCFC-262fc	134190-53-7 420-99-5 102738-79-4 421-02-3
40	Ozone-depleting substances	HCFC-271 HCFC-271ba HCFC-271fb	134190-54-8 420-44-0 430-55-7
42	Alkanes, C10-13, chloro (Short chain chlorinated paraffins)	Alkanes, C10-13, chloro	85535-84-8
42	Alkanes, C10-13, chloro (Short chain chlorinated paraffins)	Alkanes, C10-12, chloro	108171-26-2
42	Alkanes, C10-13, chloro (Short chain chlorinated paraffins)	Alkanes, C12-13, chloro	71011-12-6
42	Alkanes, C10-13, chloro (Short chain chlorinated paraffins)	Alkanes, chloro	61788-76-9
42	Alkanes, C10-13, chloro (Short chain chlorinated paraffins)	Other Short Chain Chlorinated Paraffins	-
43	Perfluorooctane sulfonates (PFOS) and its salt	2-Propenoic acid, 2-methyl-, dodecyl ester, polymers with 2-[methyl[(perfluoro-C4-8-alkyl)-sulfonyl]amino]ethyl acrylate and vinylidene chloride	306975-62-2
43	Perfluorooctane sulfonates (PFOS) and its salt	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt	2991-51-7
44	Nickel and nickel compounds	Nickel	7440-02-0
44	Nickel and nickel compounds	Nickel (II) oxide	1313-99-1
44	Nickel and nickel compounds	Nickel (II) chloride	7718-54-9
44	Nickel and nickel compounds	Nickel (II) chloride, hexahydrate	7791-20-0
44	Nickel and nickel compounds	Nickel(II) sulfate	7786-81-4
44	Nickel and nickel compounds	Nickel(II) sulfate, hexahydrate	10101-97-0
44	Nickel and nickel compounds	Nickel(II) sulfate, heptahydrate	10101-98-1
44	Nickel and nickel compounds	Antimony nickel titanium oxide yellow	8007-18-9
44	Nickel and nickel compounds	Nickel niobium titanium yellow rutile	68611-43-8
44	Nickel and nickel compounds	Cobalt titanate green spinel	68186-85-6
46	Cadmium and cadmium compounds	Cadmium	7440-43-9
46	Cadmium and cadmium compounds	Cadmium oxide	1306-19-0
46	Cadmium and cadmium compounds	Cadmium sulfide	1306-23-6

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
47	Hexavalent chromium compounds	Barium chromate	10294-40-3
47	Hexavalent chromium compounds	Calcium chromate	13765-19-0
47	Hexavalent chromium compounds	Strontium chromate	7789-06-2
47	Hexavalent chromium compounds	Zinc chromate	13530-65-9
48	Lead and lead compounds	Lead	7439-92-1
48	Lead and lead compounds	Lead (II) sulfate	7446-14-2
48	Lead and lead compounds	Lead (II) carbonate	598-63-0
48	Lead and lead compounds	Trilead bis(carbonate) dihydroxide	1319-46-6
48	Lead and lead compounds	Lead (II) acetate, trihydrate	6080-56-4
48	Lead and lead compounds	Lead selenide	12069-00-0
48	Lead and lead compounds	Lead (IV) oxide	1309-60-0
48	Lead and lead compounds	Lead (II,IV) oxide	1314-41-6
48	Lead and lead compounds	Lead (II) sulfide	1314-87-0
48	Lead and lead compounds	Lead (II) phosphate	7446-27-7
48	Lead and lead compounds	Lead (II) titanate	12060-00-3
48	Lead and lead compounds	Lead sulfate, sulphuric acid, lead salt	15739-80-7
48	Lead and lead compounds	Lead sulphate, tribasic	12202-17-4
48	Lead and lead compounds	Lead stearate	1072-35-1
48	Lead and lead compounds	Lead (II) chromate	7758-97-6
48	Lead and lead compounds	Lead chromate molybdate sulphate red	12656-85-8
48	Lead and lead compounds	Lead sulfochromate yellow	1344-37-2
51	Mercury and mercury compounds	Mercury	7439-97-6
51	Mercury and mercury compounds	Mercuric, chloro(cyclohexylmethyl)-	33631-63-9
51	Mercury and mercury compounds	Mercury (II) chloride	7487-94-7
51	Mercury and mercury compounds	Mercuric sulfate	7783-35-9
51	Mercury and mercury compounds	Mercuric nitrate	10045-94-0
51	Mercury and mercury compounds	Mercuric (II) oxide	21908-53-2
51	Mercury and mercury compounds	Mercuric sulfide	1344-48-5
55	Tri-substituted organostannic compounds	Triphenyltin-N, N-dimethyldithiocarbamate	1803-12-9
55	Tri-substituted organostannic compounds	Triphenyltinfluoride	379-52-2
55	Tri-substituted organostannic compounds	Triphenyltinacetate	900-95-8
55	Tri-substituted organostannic compounds	Triphenyltinchloride	639-58-7
55	Tri-substituted organostannic compounds	Triphenyltinhydroxide	76-87-9
55	Tri-substituted organostannic compounds	Triphenyltin fattyacid((9-11) salt)	18380-71-7 18380-72-8 47672-31-1 94850-90-5
55	Tri-substituted organostannic compounds	Triphenyltinchloroacetate	7094-94-2
55	Tri-substituted organostannic compounds	Tributyltinmethacrylate	2155-70-6
55	Tri-substituted organostannic compounds	Bis(tributyltin)fumalate	6454-35-9
55	Tri-substituted organostannic compounds	Tributyltinfluoride	1983-10-4
55	Tri-substituted organostannic compounds	Bis(tributyltin)2,3-dibromosuccinate	31732-71-5
55	Tri-substituted organostannic compounds	Tributyltinacetate	56-36-0
55	Tri-substituted organostannic compounds	Tributyltinlaurate	3090-36-6
55	Tri-substituted organostannic compounds	Bis(tributyltin)phthalate	4782-29-0
55	Tri-substituted organostannic compounds	Coplymer of alkyl(c=8) acrylate,methyl methacrylate and tributyltin methacrylate	67772-01-4
55	Tri-substituted organostannic compounds	Tributyltinsulfamate	6517-25-5

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
55	Tri-substituted organostannic compounds	Bis(tributyltin)maleate	14275-57-1
55	Tri-substituted organostannic compounds	Tributyltinchloride	1461-22-9 7342-38-3
55	Tri-substituted organostannic compounds	Tributyltin cyclopentane carbonate=mixture	85409-17-2
55	Tri-substituted organostannic compounds	Tributyltin-1, 2,3,4,4a, 4b, 5,6,10,10a-decahydro-7-isoplopyl-1, 4a-dimethyl-1-phenanthrencarboxylatemix	26239-64-5
55	Tri-substituted organostannic compounds	Other tri-substituted organostannic compounds	-
56	Dioctyltin (DOT) compounds	Dioctyl Tin Oxide	870-08-6
56	Dioctyltin (DOT) compounds	Dioctyltin dilaurate	3648-18-8
56	Dioctyltin (DOT) compounds	Other Dioctyltin compounds	-
57	Dibutyltin (DBT) compounds	Dibutyltin oxide	818-08-6
57	Dibutyltin (DBT) compounds	Dibutyltin diacetate	1067-33-0
57	Dibutyltin (DBT) compounds	Dibutyltin dilaurate	77-58-7
57	Dibutyltin (DBT) compounds	Dibutyltin maleate	78-04-6
57	Dibutyltin (DBT) compounds	Other dibutyltin compounds	-
63	Perfluorooctanoic acid (PFOA) and its salts	Pentadecafluorooctanoic acid	335-67-1
63	Perfluorooctanoic acid (PFOA) and its salts	Ammonium pentadecafluorooctanoate	3825-26-1
63	Perfluorooctanoic acid (PFOA) and its salts	Sodium pentadecafluorooctanoate	335-95-5
63	Perfluorooctanoic acid (PFOA) and its salts	Potassium pentadecafluorooctanoate	2395-00-8
63	Perfluorooctanoic acid (PFOA) and its salts	Silver pentadecafluorooctanoate	335-93-3
63	Perfluorooctanoic acid (PFOA) related compounds	Pentadecafluorooctanoic acid	335-67-1
63	Perfluorooctanoic acid (PFOA) related compounds	Ammonium pentadecafluorooctanoate	3825-26-1
63	Perfluorooctanoic acid (PFOA) related compounds	Sodium pentadecafluorooctanoate	335-95-5
63	Perfluorooctanoic acid (PFOA) related compounds	Potassium pentadecafluorooctanoate	2395-00-8
63	Perfluorooctanoic acid (PFOA) related compounds	Silver pentadecafluorooctanoate	335-93-3
63	Perfluorooctanoic acid (PFOA) related compounds	Pentadecafluoroctanoyl fluoride	335-66-0
63	Perfluorooctanoic acid (PFOA) related compounds	Methyl pentadecafluorooctanoate	376-27-2
63	Perfluorooctanoic acid (PFOA) related compounds	Ethyl pentadecafluorooctanoate	3108-24-5
63	Perfluorooctanoic acid (PFOA) related compounds	Perfluorooctyl iodide	507-63-1
63	Perfluorooctanoic acid (PFOA) related compounds	Tetrahydroperfluoro-1-decanol	678-39-7
63	Perfluorooctanoic acid (PFOA) related compounds	Perfluoro-1-dodecanol	865-86-1
63	Perfluorooctanoic acid (PFOA) related compounds	Perfluorodecyl iodide	2043-53-0
63	Perfluorooctanoic acid (PFOA) related compounds	1,1,2,2-Tetrahydroperfluorododecyl iodide	2043-54-1
63	Perfluorooctanoic acid (PFOA) related compounds	Perfluorodecylethyl acrylate	17741-60-5
63	Perfluorooctanoic acid (PFOA) related compounds	1,1,2,2-Tetrahydroperfluorodecyl acrylate	27905-45-9
63	Perfluorooctanoic acid (PFOA) related compounds	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-Pentacosafluoro-14-iodotetradecane	30046-31-2
63	Perfluorooctanoic acid (PFOA) related compounds	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Pentacosafluorotetradecan-1-ol	39239-77-5
63	Perfluorooctanoic acid (PFOA) related compounds	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-Nonacosafluorohexadecan-1-ol	60699-51-6
63	Perfluorooctanoic acid (PFOA) related compounds	1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-Nonacosafluoro-16-iodohexadecane	65510-55-6

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Trifluoromethane (HFC-23)	75-46-7
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Difluoromethane (HFC-32)	75-10-5
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Methyl fluoride (HFC-41)	593-53-3
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Pentafluoroethane (HFC-125)	354-33-6
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,2,2-Tetrafluoroethane (HFC-134)	359-35-3
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,2-Trifluoroethane (HFC-143)	430-66-0
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1-Trifluoroethane (HFC-143a)	420-46-2
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,2-difluoroethane (HFC-152)	624-72-6
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1-Difluoroethane (HFC-152a)	75-37-6
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Fluoroethane (HFC-161)	353-36-6
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	2H-Heptafluoropropane (HFC-227ea)	431-89-0
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1,2,2,3-Hexafluoro-propane (HFC-236cb)	677-56-5
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1,3,3-Pentafluoropropane (HFC-245fa)	460-73-1
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	406-58-6
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	2H,3H-Decafluoropentane (HFC-43-10mee)	138495-42-8
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Tetrafluoromethane (Carbon tetrafluoride, (PFC-14)	75-73-0
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Hexafluoroethane (PFC-116)	76-16-4
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Octafluoropropane (PFC-218)	76-19-7
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Decafluorobutane (PFC-3-1-10)	355-25-9
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Dodecafluoropentane (PFC-4-1-12)	678-26-2
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Tetradecafluorohexane (PFC-5-1-14)	355-42-0
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Octafluorocyclobutane (PFC-c-318)	115-25-3
67	Fluorinated greenhouse gases (PFCs, SF6, HFCs)	Sulfur Hexafluoride (SF_6)	2551-62-4
68	Perfluorohexane sulfonic acid (PFHxS) and its salts	Perfluorohexane-1-sulphonic acid	355-46-4
68	Perfluorohexane sulfonic acid (PFHxS) and its salts	Ammonium perfluorohexane-1-sulphonate	68259-08-5
68	Perfluorohexane sulfonic acid (PFHxS) and its salts	Potassium perfluorohexane-1-sulphonate	3871-99-6
68	Perfluorohexane sulfonic acid (PFHxS) related compounds	Perfluorohexane sulfonyl fluoride	423-50-7
68	Perfluorohexane sulfonic acid (PFHxS) related compounds	Perfluorohexane sulfonamide	41997-13-1
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Perfluorononan-1-oic acid	375-95-1
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Nonadecafluorodecanoic acid	335-76-2
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Henicosafluoroundecanoic acid	2058-94-8
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Tricosafluorododecanoic acid	307-55-1
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Pentacosafluorotridecanoic acid	72629-94-8
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Heptacosafluorotetradecanoic acid	376-06-7
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Ammonium salt of perfluorononan-1-oic-acid	4149-60-4

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Sodium salt of perfluorononan-1-oic-acid	21049-39-8
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Decanoic acid, nonadecafluoro-, sodium salt	3830-45-3
69	Perfluorocarboxylic acids containing 9 to 14 carbon atoms in the chain (C9-C14 PFCAs) and their salts	Ammonium nonadecafluorodecanoate	3108-42-7
69	C9-C14 PFCA-related substances	Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8, 9,9,10,10,11,11,12,12- pentacosafluoro-12-iodo-	307-60-8
69	C9-C14 PFCA-related substances	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12, 12-heneicosafluorododecyl ester	2144-54-9
69	C9-C14 PFCA-related substances	Dodecanoyl fluoride, 2,2,3,3,4,4,5,5,6,6,7,7, 8,8,9,9,10,10,11,12,12,12- docosafluoro-11-(trifluoromethyl)-	15811-52-6
71	Per- and poly-fluoroalkyl substances (PFAS)	Pentadecafluorooctanoic acid	335-67-1
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorooctylethyldimethylchlorosilane	74612-30-9
71	Per- and poly-fluoroalkyl substances (PFAS)	Bis(perfluorooctyl)phosphinic acid	40143-79-1
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorooctanoic anhydride	33496-48-9
71	Per- and poly-fluoroalkyl substances (PFAS)	1-bromohenicosafluorodecane	307-43-7
71	Per- and poly-fluoroalkyl substances (PFAS)	Pentacosafluorotridecanoic acid	72629-94-8
71	Per- and poly-fluoroalkyl substances (PFAS)	Tricosafluorododecanoic acid	307-55-1
71	Per- and poly-fluoroalkyl substances (PFAS)	Henicosafluoroundecanoic acid	2058-94-8
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorononan-1-oic acid	375-95-1
71	Per- and poly-fluoroalkyl substances (PFAS)	Heptacosafluorotetradecanoic acid	376-06-7
71	Per- and poly-fluoroalkyl substances (PFAS)	Nonadecafluorodecanoic acid	335-76-2
71	Per- and poly-fluoroalkyl substances (PFAS)	Pentadecanoic acid, nonacosafluoro-	141074-63-7
71	Per- and poly-fluoroalkyl substances (PFAS)	Hexadecanoic acid, hentriacontafluoro-	67905-19-5
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoroheptadecanoic acid	57475-95-3
71	Per- and poly-fluoroalkyl substances (PFAS)	Octadecanoic acid, pentatriacontafluoro-	16517-11-6
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorononadecanoic acid	133921-38-7
71	Per- and poly-fluoroalkyl substances (PFAS)	Eicosanoic acid, nonatriacontafluoro-	68310-12-3
71	Per- and poly-fluoroalkyl substances (PFAS)	ammonium undecafluorohexanoate	21615-47-4
71	Per- and poly-fluoroalkyl substances (PFAS)	undecafluorohexanoic acid (PFHxA), its salts and related substances	307-24-4
71	Per- and poly-fluoroalkyl substances (PFAS)	Sodium undecafluorohexanoate	2923-26-4
71	Per- and poly-fluoroalkyl substances (PFAS)	Hexafluoroethane	76-16-4
71	Per- and poly-fluoroalkyl substances (PFAS)	Octafluoropropane	76-19-7
71	Per- and poly-fluoroalkyl substances (PFAS)	Octafluorocyclobutane	115-25-3
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoropolyalkyl Ether	60164-51-4
71	Per- and poly-fluoroalkyl substances (PFAS)	Fluoroelastomers	64706-30-5
71	Per- and poly-fluoroalkyl substances (PFAS)	Polytetrafluoroethylene	9002-84-0

Table 2.1-3 Examples of Prohibited Substances & Substance Groups

IEC 62474 and other sources were used as references for the substance names and CAS Nos. Not all substances and substance families prohibited in products are covered. (No. is refer to the No. of the Level 1 prohibited substances.)

No.	Substance Group	Substance Name	CAS No.
71	Per- and poly-fluoroalkyl substances (PFAS)	Vinylidene fluoride-hexafluoropropylene polymer	9011-17-0
71	Per- and poly-fluoroalkyl substances (PFAS)	Polyvinylidene fluoride	24937-79-9
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoroethylene propylene copolymer	25067-11-2
71	Per- and poly-fluoroalkyl substances (PFAS)	2-(Perfluorohexyl)ethane-1-sulfonic acid	27619-97-2
71	Per- and poly-fluoroalkyl substances (PFAS)	Heptafluorobutyric acid	375-22-4
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorohexane	355-42-0
71	Per- and poly-fluoroalkyl substances (PFAS)	Chlorotrifluoroethylene polymer	9002-83-9
71	Per- and poly-fluoroalkyl substances (PFAS)	Poly(ethylene-alt-chlorotrifluoroethylene)	25101-45-5
71	Per- and poly-fluoroalkyl substances (PFAS)	Fluoroethylene-alkyl vinylether	146915-43-7
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoroindane	374-80-1
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorodecalin	306-94-5
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoroperhydrofluorene	307-08-4
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluorotetradecahydrophenanthrene	306-91-2
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoroperhydrofluoranthene	662-28-2
71	Per- and poly-fluoroalkyl substances (PFAS)	Perfluoroperhydrobenzyltetralin	116265-66-8
71	Per- and poly-fluoroalkyl substances (PFAS)	Ethyl perfluoroisoalkyl ether	297730-93-9
71	Per- and poly-fluoroalkyl substances (PFAS)	Methyl perfluoroisoalkyl ether	22052-84-2
71	Per- and poly-fluoroalkyl substances (PFAS)	Ethyl perfluoroisobutyl ether	163702-06-5

Table 2.1-4 Regulations Referenced

No.	Name of Regulation, Legislation, etc.	Country or Region
1	Montreal Protocol	Treaty
2	EU RoHS Directive and its revisions 2011/65/EU	EU
3	EU REACH Regulation (EC) No 1907/2006, Annex XVII (Restrictions on substances)	EU
4	(EU) 2023/1542 concerning batteries and waste batteries	EU
5	(EC) No. 1005/2009 on substances that deplete the ozone layer	EU
6	(EU) 2019/1021 on Persistent Organic Pollutants (POPS)	EU
7	EU Directive 94/62/EEC on packaging and packaging waste	EU
8	EU Regulation No. 517/2014 on Fluorinated Greenhouse Gases	EU
9	BGBI 1990/194: Formaldehyde Regulation §2, 12/2/1990	Austria
10	Lithuania HN 96:2000 "Hygiene Norms and Regulations"	Lithuania
11	ORRChem (Ordinance on the reduction of risks relating to substances)	Switzerland
12	Sweden SFS 1998:944	Sweden
13	Denmark Lead Regulation (Ordinance No. 1012)	Denmark
14	Denmark Cadmium Regulation	Denmark
15	Norway Product Regulations	Norway
16	Japan Industrial Safety and Health Act, Harmful Substances, etc., Prohibited for Manufacturing, etc.	Japan
17	Law Concerning the Examination and Regulation of the Manufacture etc. of Chemical Substances	Japan
18	Ozone Layer Protection Act	Japan
19	Act on Preventing Environmental Pollution of Mercury	Japan
20	Electrical Appliances and Consumer Products Safety Control Act	South Korea
21	Regulations concerning standards, etc., concerning packaging methods for packaging materials for Korean products	South Korea
22	Restrictions on the Manufacture, Import, and Sale of Dry Batteries	Taiwan
23	National Standard of the People's Republic of China, GB24427-2021, Content Limitation of Mercury, Cadmium and Lead for Zinc Anode Primary Battery	China
24	Limits on mercury content in battery products	China
25	Toxic Substances Control Act (TSCA)	US
26	TSCA Significant New Use Rule	US
27	Clean Air Act of 1990, Art. 611	US
28	Formaldehyde Standards for Composite Wood Products Act	US
29	Mercury-Containing and Rechargeable Battery Management Act	US
30	US state battery regulations (Maine, Connecticut, Rhode Island)	US
31	US regulations on hazardous substances in packaging materials	US
32	Proposition 65 Case Law	California
33	Products Containing Mercury Regulations (SOR/2014-254)	Canada
34	Prohibition of Certain Toxic Substances Regulations SOR/2012-285 and its amendment	Canada
35	Law No. 26.184 Portable Power and Resolution	Argentina
36	Manganese battery and alkaline-manganese battery regulations	Paraguay
37	US regulations on hazardous substances in packaging materials	US
38	Formaldehyde Emissions from Composite Wood Products Regulations SOR/2021-148	Canada
39	Law on the fight against waste and the circular economy	France
40	The Health and Safety Code, relating to public health: AB1817 Product safety: textile articles: PFAS	California

Table 2.1-5 Analysis Standards

Substance	Analysis Standard
Cadmium and cadmium compounds	Analytical method in accordance with IEC 62321 Polymers / Metals / Electronics - ICP-OES (inductively coupled plasma-optical emission spectrometry) - ICP-MS (inductively coupled plasma mass spectrometry) - AAS (atomic absorption spectroscopy) - AFS (atomic fluorescence spectroscopy) * Analysis should be performed by one of analytical methods described above[*1]. However, alternative analytical methods recommended by analysis laboratories are also acceptable. * It is preferable to perform analysis by laboratories certified according to ISO 17025.
Hexavalent chromium compounds	Analytical method in accordance with IEC 62321 Polymers / Metals / Electronics - Colorimetric method Analysis should be performed by the above analytical method[*1]. An analytical method recommended by an analysis laboratory may also be acceptable, but spot tests are not acceptable due to large limits of quantification (LOQ) and low accuracy. * It is preferable to perform analysis by laboratories certified according to ISO 17025.
Lead and lead compounds	Analytical method in accordance with IEC 62321 Polymers / Metals / Electronics - ICP-OES (inductively coupled plasma-optical emission spectrometry) - ICP-MS (inductively coupled plasma mass spectrometry) - AAS (atomic absorption spectroscopy) - AFS (atomic fluorescence spectroscopy) * Analysis should be performed by one of analytical methods described above[*1]. However, alternative analytical methods recommended by analysis laboratories are also acceptable. * It is preferable to perform analysis by laboratories certified according to ISO 17025.
Mercury and mercury compounds	Analytical method in accordance with IEC 62321 Polymers / Metals / Electronics - CV-AAS (cold vapor atomic absorption spectrometry) - CV-AFS (cold vapor atomic fluorescence spectrometry) - ICP-OES (inductively coupled plasma-optical emission spectrometry) - ICP-MS (inductively coupled plasma mass spectrometry) * Analysis should be performed by one of analytical methods described above[*1]. However, alternative analytical methods recommended by analysis laboratories are also acceptable. * It is preferable to perform analysis by laboratories certified according to ISO 17025.
Di (2-ethylhexyl) phthalate (DEHP) Dibutyl phthalate (DBP) Benzyl butyl phthalate (BBP) Diisobutyl phthalate (DIBP)	Analytical method in accordance with IEC 62321 Polymers / Electronics - GC-MS (gas chromatography-mass spectrometry) * Analysis should be performed by the above analytical method*[1]. However, alternative analytical methods recommended by analysis laboratories are also acceptable. * It is preferable to perform analysis by laboratories certified according to ISO 17025.

*1 Use the method of analysis, testing, or measurement specified by the Epson Group, if any.

2.2 Substances Prohibited from Use in Manufacturing Processes

The following is a list of substances whose use in manufacturing is prohibited by legal or other regulations. The list is not comprehensive.

No.	Substance (Group) Name	CAS No.	Referenced Regulations
1	White phosphorous match (white phosphorous)	12185-10-3	Substances prohibited by the Industrial Safety and Health Law (Japan) (Article 55 and Enforcement Order 16)
2	Benzidine and its salts	92-87-5, etc.	
3	4-aminodiphenyl / 4-aminodiphenyl and its salts	92-67-1, etc.	
4	Asbestos	See Table 2.1-3, No. 39	
5	4-nitrodiphenyl and its salts	92-93-3	
6	Bis (chloromethyl) ether	542-88-1	
7	2-Naphthylamine / beta-naphthylamine and its salts	91-59-8	
8	Rubber cement containing benzene, where the benzene accounts for more than 5% of the rubber cement solvent (including diluting agent)	-	
9	Preparations or other substances that contain > 0.1% asbestos by weight; or preparations or other substances that contain > 1% of items 2, 3, 5, 6, or 7 above by weight	-	
10	1,1,1-trichloroethane	71-55-6	Montreal Protocol Montreal Protocol Annex A, B, E and C-I, II, III
11	Carbon tetrachloride	56-23-5	
12	Methyl bromide / Bromomethane	74-83-9	
13	CFC	See Table 2.1-3, No. 40	
14	Halon		
15	HBFCs		
16	Bromochloromethane	74-97-5	
17	HCFC[*1]	See Table 2.1-3, No. 40	
18	Aldrin	309-00-2	POPs Convention, Annex A (Elimination)
19	Alpha hexachlorocyclohexane	319-84-6	
20	Beta hexachlorocyclohexane	319-85-7	
21	Chlordane	57-74-9	
22	Chlordecone	143-50-0	
23	Decabromodiphenyl oxide (DecaBDE)	1163-19-5	
24	Dieldrin	60-57-1	
25	Endrin	72-20-8	
26	Heptachlor	76-44-8	
27	Hexabromobiphenyl	36355-01-8	
28	Hexabromocyclododecane (HBCDD)	See Table 2.1-3	
29	Hexabromodiphenyl ether	36483-60-0, etc.	
30	Heptabromodiphenyl ether	68928-80-3, etc.	
31	Hexachlorobenzene	118-74-1	
32	Hexachlorobuta-1,3-diene	87-68-3	
33	Gamma hexachlorocyclohexane	58-89-9	
34	Mirex	2385-85-5	
35	Pentachlorobenzene	608-93-5	
36	Pentachlorophenol or its salts and esters	87-86-5, etc.	
37	Polychlorinated biphenyl (PCB)	See Table 2.1-3	
38	Polychlorinated naphthalenes (with 2–8 chlorine atoms)	See Table 2.1-3	

2.2 Substances Prohibited from Use in Manufacturing Processes

No.	Substance (Group) Name	CAS No.	Referenced Regulations
39	Short-chain chlorinated paraffins (SCCPs) (limited to those with carbon chains from C10 to C13 and a chlorine content that exceeds 48% to the total mass)	See Table 2.1-3	POPs Convention, Annex A (Elimination)
40	Endosulfan	115-29-7 959-98-8 33213-65-9	
41	Tetrabromodiphenyl ether	40088-47-9, etc.	
42	Pentabromodiphenyl ether	32534-81-9, etc.	
43	Toxaphene	8001-35-2	
44	2,2,2-trichloro-1,1-bis (4-chlorophenyl) ethanol (Kelthane or Dicofol)	115-32-2	
45	Perfluorooctanoic acid (PFOA) and its salts and PFOA-related compounds	See Table 2.1-3	
46	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	See Table 2.1-3	
47	DDT	50-29-3	POPs Convention, Annex B (Restriction)
48	Perfluorooctane sulfonates (PFOS) and its salts	See Table 2.1-3	
49	Perfluoro-1-octanesulfonyl fluoride (PFOS-F)	307-35-7	

The following uses are exempt from this prohibition:

(1) Small amounts of chemical reagent occasionally used as a comparative or calibration chemical in R&D applications.
(2) CFC and HCFC contained as a cooling agent in existing facilities or equipment.
(3) Halons contained as an extinguishing material in existing facilities or equipment.

*1 The elimination schedule is per the Montreal Protocol and applicable national laws and regulations.

Appendix 2: Revision History

Rev.	Date of Revision	Revised Content
1	January 15, 2003	Rev. 1.0
2	August 15, 2003	Added information on things such as groups of controlled substances in products added by Epson
3	April 15, 2005	Added information regarding an assurance system relating to substances included in products, etc.
3.1	December 15,2006	Added information to Appendix 1 Substance Handling Standards, including the addition of cobalt chloride to conditionally banned substances and exceptions to substances to be eliminated.
3.2	April 1, 2008	Appendix 1: Substance Handling Standards - Added 3 substances to unconditionally banned substances (subject to the Chemical Substance Control Law) - Added perfluorooctane sulfonate (PFOS) and its salts to conditionally banned substances Updated Appendix 3: List of Epson Group Companies
3.3	January 20, 2009	Added "Compliance documents for California Formaldehyde Regulation for Composite Wood Products" to Documents to Be Submitted Appendix 1: Substance Handling Standards - Added conditions to conditionally banned substances (formaldehyde) - Added conditions to conditionally banned substances (cadmium, mercury, lead) Added transport pallets (SEG specifications) to examples of packing materials
3.4	August 20, 2009	Appendix 1: Substance Handling Standards - Added dimethyl fumarate to unconditionally banned substances - Added examples of general use to unconditionally banned substances - Added conditions to conditionally banned substances (formaldehyde) - Added exempted applications to conditionally banned substances (cadmium and cadmium compounds) - Revised conditions for conditionally banned substances (lead and lead compounds) - Added exempted application to three substances to be eliminated from products (cadmium and cadmium compounds, mercury and mercury compounds, lead and lead compounds) - Revised analytical standards for four substances to be eliminated from products (cadmium and cadmium compounds, hexavalent chromium and its compounds, mercury and mercury compounds, lead and lead compounds - Added phthalate to level 2 substances to be eliminated from products Updated Appendix 3: List of Epson Group Companies
3.5	May 21, 2010	Appendix 1: Substance Handling Standards < Unconditionally banned substances > Added 6 substances to the "Group subject to the Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Japan)" < Conditionally banned substances > - Added tri-substituted organostannic compounds (tributyltin (TBT)/ triphenyltin (TPT) / other tri-substituted organostannic compounds) - Added dioctyltin (DOT) compounds - Revised condition of prohibitions for mercury and its compounds - Revised condition of prohibitions and exemptions for perfluorooctane sulfonates (PFOS) and its salts <Substances to be eliminated from products> - Added dibutyltin (DBT) compounds to level 2 substances *(Continued on the next page...)*

Rev.	Date of Revision	Revised Content
3.5	May 21, 2010	- Added exempted application for cadmium and cadmium compounds, mercury and mercury compounds, lead and lead compounds - Limit the scope of Phthalate to DEHP, DBP, BBP - Deleted conditions of prohibitions already controlled in accordance with those of conditionally banned substances (e.g., batteries, packaging materials) - Updated Appendix 3 List of Epson Group Companies *1 dioctyltin (DOT)/ tributyltin (TBT)/ triphenyltin (TPT) / other Tri-substituted organostannic compounds
3.6	July 1, 2011	Appendix 1: Substance Handling Standards < Unconditionally banned substances > - Added two substances to the "Group subject to the Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Japan)" < Conditionally banned substances > - Revised the conditions for prohibitions on cadmium and cadmium compounds, mercury and mercury compounds, lead and lead compounds - Added "Treatment of Substances Regulated by REACH Regulation No. 1907 / 2006" <Substances to be eliminated from products> - Revised exempted applications for cadmium and cadmium compounds, mercury and mercury compounds, lead and lead compounds - Added diisobutyl phthalate (DIBP) and hexabromocyclododecane (HBCDD) to level 2 substances to be eliminated from products
3.7	August 1, 2012	Deleted "PREFACE", "QUALITY PHILOSOPHY" Appendix 1: Substance Handling Standards < Conditionally banned substances > - Deleted one of the exemptions from Formaldehyde. - Revised conditions for mercury and mercury compounds. - Revised conditions for Tri-substituted organostannic compounds and Dioctyltin (DOT) compounds - Added (Di(2-ethylhexyl) phthalate(DEHP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Diisobutyl phthalate(DIBP), Dibutyltin (DBT) compounds, Hexabromocyclododecane (HBCDD) * moved from level 2 substances to be eliminated from products - Added "until December 31, 2014" to the exemption of Dioctyltin (DOT) compounds - Added URL of European Chemical Agency's website to "Treatment of Substances Regulated by REACH Regulation No. 1907/2006" - Revised the organization names. - Added "for information on production materials used for products to which EU RoHS Directive (2011/65/EU) applies" to Note A. <Substances to be eliminated from products> - Deleted "(e.g. Projector lamp) from Hg-4 of Mercury And Mercury Compounds. - Regarding exempted application of Lead and Lead Compounds "Pb-7", added "7(c)-IV" to the No. of application exempted from amended RoHS Directive and added "Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors" to the comment. - Deleted (Di(2-ethylhexyl) phthalate(DEHP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Diisobutyl phthalate(DIBP), Dibutyltin (DBT) compounds, Hexabromocyclododecane (HBCDD) from level 2 substances to be eliminated from products. * moved to conditionally banned substances. - Added Perfluorooctanoic acid (PFOA) and its salt, Musk xylene, 4,4'-Diaminodiphenylmethane (MDA), Diarsenic pentaoxide, Diarsenic trioxide, 2,4 - Dinitrotoluene (2,4-DNT), Tris(2-chloroethyl)phosphate (TCEP) to level2 Substances to be eliminated from products. - Updated Appendix 3 List of Epson Group Companies

Rev.	Date of Revision	Revised Content
3.7.1	April 1, 2013	Updated Appendix 3 List of Epson Group Companies
3.7.2	August 1, 2013	- Updated Appendix 3 List of Epson Group Companies - Revised the organization name from “Visual Device Business Unit (the former TFT Operations Division) of the Visual Products Operations Division” to “the TFT liquid crystal panels business of the Visual Products Operations Division”
3.8	July 1, 2014	Deleted “APPROACH TO ASSURANCE AGAINST CHEMICAL SUBSTANCE INCLUSION IN PRODUCTS” STANDARDS - Added 2. Basic rules for assuring that banned substances are not contained in products Appendix 1: Substance Handling Standards - Revised the explanation in 2. Substance group handling standards partially < Unconditionally banned substances > - Added Endosulfan, Hexabromocyclododecane (HBCDD) - Polychlorinated naphthalene: (Cl: 3 or more) => (Cl: 1 or more) < Conditionally banned substances > - Cadmium and its compounds, lead and its compounds, Mercury and its compounds: For use in batteries, see Appendix 2 - Added a condition for jewerly to Lead and its compounds - Added a condition for azodyes to azo compounds - Moved HBCDD to unconditionally banned substances - Moved musk xylene, MDA, diarsenic pentaoxide, diarsenic trioxide, 2,4-DNT, TCEP from level2 Substances to be eliminated from products <Notes regarding substances> *A: Moved “Products to which EU RoHS Directive (2011/65/EU) applies” from Notes regarding laws <Notes regarding laws> - Added *1 According to Annex XVII of REACH Regulation No. 1907/2006, revised the name of the law of *7 - Added list of azodyes <Substances to be eliminated from products > - Added the following explanations As of July 2014, applications exempted from the RoHS Directive are being reviewed. The dates provided in the "Effective date of the prohibition" column in the tables on pages 21-25 are the dates that Epson has independently set as the final dates for accepting goods containing substances that are being phased out. Exempted applications and effective dates of the prohibition may change, depending on the results of reviews of applications exempted from the RoHS Directive. - Deleted “Analytical standards for substances to be eliminated from products are also shown below. Analytical methods have not been established for all test samples.” - Added “Effective date of the prohibition” for exempted applications and the following explanation. Exempted applications and effective dates of the prohibition may change, depending on the results of reviews of applications exempted from the RoHS Directive. - Analytical standards: Added the following explanation. * Use the method of analysis, testing, or measurement specified by Epson, if any. - Moved musk xylene, MDA, diarsenic pentaoxide, diarsenic trioxide, 2,4-DNT, TCEP to Conditionally banned substances - Hexavalent Chromium and Its Compounds => Hexavalent Chromium Compounds - Added the following condition to level 2 of Hexavalent Chromium Compounds. - Hexavalent Chromium Compounds must not be present in leather articles and articles containing leather parts that come into contact with the skin in concentrations equal to or greater than 3 ppm of the total dry weight of the leather or leather part *(Continued on the next page...)*

Ver.	Date of Revision	Revised Content
3.8	July 1, 2014	- Mercury And Mercury Compounds: Revised the name of Hg-3 from “Mercury in straight fluorescent lamps for special purposes” to “Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes” - Lead and Lead Compounds: Revised the name of Pb-7 from Lead in ceramic for piezoelectronic devices to Lead in ceramic for electrical and electronic components - Lead and Lead Compounds: Revised the comment of Pb-7 - Lead and Lead Compounds: Added *See Pb-4 for high melting temperature type solders to the comment of Pb-14 - Added PAH, Trichloroethylene to level 2 <Substances Banned From Use In Manufacturing Processes> - Added Montreal Protocol Annex III and Bromochloromethane Appendix 2 - Deleted Appendix 2 “System Check Sheet for Assurance Against Chemical Substance Inclusion in Products” - Added Appendix 2 “Conditionally banned substances for battery” Appendix 3 - Updated Appendix 3 “List of Epson Group Companies”
3.9	July 1, 2015	< Conditionally banned substances > - Moved “Leather articles and articles containing leather parts that come into contact with the skin shall not contain in concentrations equal to or greater than 3 ppm of the total dry weight of the leather” from level 2 Substances to be eliminated from products - Dibutyltin (DBT) compounds: Deleted “Adhesives are exempt until December 31, 2014.” - Moved Trichloroethylene from level 2 Substances to be eliminated from products - Added Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-Trimethylpentene (BNST), and Polyvinyl chloride (PVC) <Substances to be eliminated from products> - Lead and Lead Compounds: Revised effective date of the prohibition for Pb-2 and Pb-3 from July 21, 2015 to April 21, 2016 - Added Arsenic acid, technical MDA, Diglyme, EDC to level 2 Appendix 2 “Conditionally banned substances for battery” - Mercury and its compounds: Revised threshold for button cell battery from 20,000ppm to 5ppm - Updated Appendix 3 “List of Epson Group Companies”
4	July 1, 2016	<Unconditionally banned substances> Revised “DBBTs: Pentachlorophenol (87-86-5)” to “Group subject to the Law Concerning the Examination and Regulation of the Manufacture etc. of Chemical Substances (Japan): Pentachlorophenol or its salts and esters" <Conditionally banned substances> - Changed the ban conditions for chlorinated paraffin to "Prohibited in amounts exceeding 1000 ppm per delivery configuration." - Added red phosphorus - Moved "Perfluorooctanoic acid (PFOS) and its salt" and "PAH” from "Substances to Be Eliminated From Products (Level 2) <Substances to Be Eliminated From Products> - Mercury and its compounds: The effective date of the prohibition was changed from July 21, 2015 to "Immediate" for Hg-1 and Hg-3 used in exempted applications. - Lead and its compounds: The effective date of the prohibition was changed from July 21, 2015 to "Immediate" for Pb-5, Pb-14, Pb-27, and Pb-33 used in exempted applications. *(Continued on the next page...)*

Ver.	Date of Revision	Revised Content
4	July 1, 2016	The effective date of the prohibition of Pb-2 and Pb-3 used in exempted applications was changed from April 21, 2016 to "One year prior to the legally mandated exemption expiration date." - Moved "Perfluorooctanoic acid (PFOS) and its salt" and "PAH" to "Conditionally banned substances."
5	July 1, 2018	STANDARDS - Added “(2) Ensure that banned substances are not present in your products." (See Appendix 1 for substance handling standards.)” to 4. Supplier Agreements - In accordance with the introduction of chemSHERPA, revised requirements in 5. (2) Reporting information about substances in products Appendix 1: Substance Handling Standards 1. Definitions (1) substance banned in products Consolidated conditionally banned substances, unconditionally banned substances, and substances to be eliminated from products to “substances banned in products” and regulated “Level 1 banned substances (currently banned)” and “Level 2 banned substances (substances scheduled to be banned)” - In accordance with the introduction of chemSHERPA, revised the definition of (3) controlled substances - Added the following definitions: (4) present, (5) presence banned, (6) intentional inclusion, (7) intentional inclusion prohibited, (8) impurity, (9) homogeneous material, (10) threshold, (11) concentration, (12) article - Added the following tables: Table 2.1-2 EU RoHS Directive Exemptions Table 2.1-3 Examples of Banned Substances & Substance Groups Table 2.1-4 Regulations Referenced Table 2.1-5 Analysis Standards 2.1 Substances Banned in Products - Consolidated conditionally banned substances, unconditionally banned substances, and substances to be eliminated from products to “substances banned in products” and specified “Regulation (Threshold)” and “Referenced Regulation” - In accordance with the introduction of chemSHERPA, revised the substance (group) names - Revised regulations (thresholds) of the following substances: No.43 SCCPs (short-chain chlorinated paraffin: 10-13 carbon atoms) are prohibited in amounts exceeding 1000 ppm per delivery configuration (Parts, units, finished products, etc.) => Presence banned No.44 Perfluorooctane sulfonates (PFOS) and its salt: deleted exemptions No.46 Formaldehyde: Composite wood products below that do not meet the requirements of sections 93120-92130.12, title 17, California Code of Regulations => Composite wood products below that do not meet the requirements of sections 93120-92130.12, title 17, California Code of Regulations and TSCA Title VI No. 49 Lead and lead compounds: - Cord and cable jackets/sheathing that contain 300 ppm lead or lead compounds must be labeled => Thermoset and thermoplastic-sheathed electrical wires, cables and cords: Prohibited in surface coating material in concentrations exceeding 300 ppm, unless the amount has been reported and approved by Epson. *(Continued on the next page...)*

Ver.	Date of Revision	Revised Content
5	July 1,2018	- In jewelry products (including watch bands), shall not exceed 200ppm. Crystal glass, glass, stainless steel, and natural jewelry not treated with lead additives are exempt. - Jewelry (including watch bands) glass and stainless steel shall not contain more than 500 ppm. This does not apply, however, to internal watch parts that consumers do not touch. => Jewelry (including watch bands): Prohibited in individual parts in amounts of 500 ppm or more. This does not apply, however, to internal watch parts that consumers do not touch, crystal glass, and natural gems that have not been treated with a lead additive. No.68 Polyvinyl chloride (PVC): Shall not intentionally be added to packing materials. Packing materials used for industrial products and TFT liquid crystal panels are exempt. => Intentional inclusion prohibited in packaging materials, except in packaging materials for industrial products. - Based on the latest legal requirements, revised Table 2.1-1 Battery Restrictions 2.2 Substances Banned from Use in Manufacturing Processes - Revised names of the following substances: No.4 Amosite, Crocidolite (blue asbestos) => Asbestos - Revised regulations (thresholds) of the following substances: No. 9 Formulations and other substances containing in excess of 1% by weight of any of the substances cited in Nos. 2 through 8 => Preparations or other substances that contain > 0.1% asbestos by weight; or preparations or other substances that contain > 1% of items 2, 3, 5, 6, or 7 above by weight - Added HCFC - Deleted Appendix 3, List of Epson Group Companies
6	October 1, 2019	STANDARDS 5. (2) Reporting information about substances in products - Additions: 5. (3) Information handling - chemSHERPA-AI file URL: https://chemsherpa.net/english => https://global.epson.com/SR/supply_chain_csr/green_purchasing/chemical_substances.html Appendix 1: Substance Handling Standards 1. Definitions - Added definitions for “chemical substance” and “mixture (preparation)” 2.1 Substances Banned in Products Level 1 banned substances - The names of the following substances were revised: No. 31: “Hexabromocyclododecane (HBCDD) and all major diastereoisomers” was changed to “Hexabromocyclododecane (HBCDD)” No. 69: “Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA” was changed to “Perfluorooctanoic acid (PFOA) and its salts and PFOA-related substances” - Revised “in articles” in the Regulation (Threshold) column to “articles and their parts” for the following substances: No. 53: Tri-substituted organostannic compounds; No. 54: Dioctyltin (DOT) compounds; and No. 59: Dibutyltin (DBT) compounds - Deletions: Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-Trimethylpentene (BNST) - Additions: No. 75: 4,4’-isopropylidenediphenol (bisphenol A, BPA) 2.1 Substances Banned in Products Level 2 banned substances - Added 14 substances to a list of level 2 banned substances *(Continued on the next page...)*

Ver.	Date of Revision	Revised Content
6	October 1, 2019	Table 2.1-1 Battery Restrictions - Deleted exemption for batteries designed exclusively for industrial or commercial use (except for lead-acid batteries) Table 2.1-2 EU RoHS Directive Exemptions - Updated based on the latest EU RoHS information Table 2.1-3 Examples of Banned Substances & Substance Groups - Updated based on the latest IEC62474 information Table 2.1-5 Analysis Standards - Updated based on the latest information
7	June 1, 2021	STANDARDS - Deleted “4. Supplier Agreements,” “5. Principles for Component Substance Assurance,” and “7. Additional Clauses” - Added “4. Epson’s Expectations of Suppliers,” “5. Before Transactions Can Begin,” “6. When This Standard is Revised,” “7. Information Handling,” and “Appendix 2: Revision History” - Changed the number and name of "2. Basic Principles of Product Substance Assurance" to "3. Epson’s Basic Principles of Product Substance Assurance" - Changed the number of “3. Scope” to “2. Scope” - Changed the number and name of “6. Requests Regarding Product Substance Assurance” to “8. Requests Regarding the Assurance System for Substances in Products" Appendix 1: Substance Handling Standards 2.1 Substances Banned in Products Level 1 banned substances - Revised names of the following substances: - No. 1 White phosphorous -> White phosphorous match (white phosphorous) - Added “intentional inclusion prohibited” to the thresholds for packaging materials for the following substances and revised the referenced regulations: - No. 47, No. 48, No. 49, No. 50 - Gathered the following 4 substances under No. 55: - Di (2-ethylhexyl) phthalate (DEHP), Dibutyl phthalate (DBP), Benzyl butyl phthalate (BBP), Diisobutyl phthalate (DIBP) - The following substances were transferred from the list of level 2 prohibited substances and the thresholds were revised based on the latest information on laws and regulations: - No.61 - Added the following substances: - No.62, No.63, No.64, No.65 - Removed 11 substances, of which referenced regulation is EU REACH Regulation (EC) No. 1907/2006, Annex XIV (Substances subject to authorization) - Added “Table 2. List of long-chain perfluoroalkyl carboxylate subject to the TSCA Significant New Use Rule” - Added “Table 3. Uses for which the intentional inclusion of fluorinated greenhouse gases (PFCs, SF6, HFCs) is prohibited” 2.1 Substances Banned in Products Level 2 banned substances - Deleted 14 substances Notes/Comments on substances - Added *3 and *11 - Revised the definition of PFOA-related substances in *10 based on the latest information on laws and regulations Table 2.1-1 Battery Restrictions - Revised the threshold for cadmium and cadmium compounds in button cell alkaline batteries *(Continued on the next page...)*

Ver.	Date of Revision	Revised Content
7	June 1, 2021	Table 2.1-2 EU RoHS Directive Exemptions - Added a table for cadmium and cadmium compounds exemptions Table 2.1-3 Examples of Banned Substances & Substance Groups - Updated based on the latest IEC62474 information - Added 12 substances to the substances that are known to be PFOA-related substances Table 2.1-4 Regulations Referenced - Revised number of the law in No. 6 based on the latest regulation - Revised the names of the regulation in No. 34 - Added the following laws and regulations: - EU Regulation No. 517/2014 on Fluorinated Greenhouse Gases - No. 26 TSCA Significant New Use Rule - No. 31 U.S. regulations on hazardous substances in packaging materials - Deleted the following laws and regulations: - EU REACH Regulation (EC) No 1907/2006, Annex XIV (Substances subject to authorization) 2.2 Substances banned from use in manufacturing processes - Revised names of the following substances: - No. 1 White phosphorous -> White phosphorous match (white phosphorous) - Added the following substances: - 31 substances from No. 18 to No. 48
8	June 1, 2022	2.1 Substances Banned in Products Level 1 banned substances - Revised names of the following substances based on the latest legislation and standard: No.61 Perfluorooctanoic acid (PFOA) and its salts and PFOA-related substances => Perfluorooctanoic acid (PFOA) and its salts and PFOA-related compounds - Added two substances, in No. 66 & 67 2.1 Substances Banned in Products Level 2 banned substances - Added one substance in No. 1 Notes/Comments on substances - Added “To prevent a fire.” to note *9 - Added *12 and *13 Table 2.1-1 Battery Restrictions - Revised the threshold for lead and lead compounds in button cell alkaline batteries - Added conditions for bans on silver-oxide batteries and zinc-air batteries Table 2.1-2 EU RoHS Directive Exemptions - Updated the table for mercury and mercury compounds based on the latest legal requirements Table 2.1-3 Examples of Banned Substances & Substance Groups - Added examples of substances in substance groups that were added to Level 1 & Level 2 banned substances Table 2.1-4 Regulations Referenced - Revised the name & number of the laws in No. 20 & No. 23 based on the latest legislation - Revised the name of the regulation in No. 34 2.2 Substances banned from use in manufacturing processes - Revised names of the following substances based on the latest legislation and standard: No.45 Perfluorooctanoic acid (PFOA) and its salts and PFOA-related substances => Perfluorooctanoic acid (PFOA) and its salts and PFOA-related compounds

Ver.	Date of Revision	Revised Content
9	September 1, 2023	STANDARDS ● Changed the expression “ban” to “prohibit” throughout the standard, except for a few. ● 4. Epson’s Expectations of Suppliers: (3) Report information about substances in products. - “Use either 1) the chemSHERPA-AI file or 2) a format specified by an Epson business unit to report substances in production materials delivered to Epson.” ⇒ “Please follow the instructions of the Epson business unit and use either or both of 1) the chemSHERPA-AI file and 2) a format specified by the Epson business unit to report substances in production materials delivered to Epson.” - “Compliance assessment information is mandatory. Please provide composition information to the extent possible.” ⇒ “Both compliance assessment information and composition information will be needed.” - Added website title: “Information about Product Substances (Epson Standard Survey))” - Changed the URL of Epson’s website Appendix 1: Substance Handling Standards ● 1. Definitions ⇒ 1. Explanation of Terms - The explanations and order of the following terms were changed: (1) substances prohibited in products, (2) substances prohibited from use in manufacturing processes, (3) substance, (4) present/included, (5) intentional inclusion, (6) impurity, (7) threshold, (8) concentration, (9) homogeneous material - The following terms were added: (12) Scope of Application (item in the table of substances prohibited in products) (13) Requirements and Thresholds (item in the table of substances prohibited in products) (14) Exemptions (item in the table of substances prohibited in products) (15) Referenced Regulations (item in the table of substances prohibited in products) - The following terms were deleted: controlled substances, presence banned, intentional inclusion prohibited ● 2. Substance Group Handling Standards - “Handling standards have been established pursuant to applicable laws and regulations.” ⇒ Deleted - “Please ensure compliance with specified conditions relating to banned substances (e.g., thresholds, parts where substances are present, uses).” ⇒ “Please ensure compliance with the specified criteria (requirements and thresholds, etc.) for the substances.” - 2.1 Substances Prohibited in Products Added information about the items for Level 1prohibited substances and Level 2 prohibited substances ● 2.1 Substances Banned in Products - Changed the layout and column titles of the tables for Level 1prohibited substances and Level 2 prohibited substances - Deleted the “Regulation (Threshold)” title - Added titles for three columns: “Scope of Application,” “Requirements and Thresholds,” and “Exemptions” - Changed the column titles in the table for Level 2 prohibited substances - Column title: “Effective date of the ban” ⇒ “Effective Date” - In conjunction with the change in table column titles, the wording of criteria was changed for Level 1prohibited substances and Level 2 prohibited substances. Except for where noted below, the essential requirements have not changed. *(Continued on the next page...)*

Ver.	Date of Revision	Revised Content
9	September 1, 2023	● Level 1prohibited substances - Changed the criteria for the following substances,based on the latest regulations: - No. 45 Formaldehyde - No. 56 Dioctyltin (DOT) compounds - No. 69 C9-C14 PFCAs, their salts, and C9-C14 PFCA-related substances - The following substances were given their own entries as substances in conjunction with changes in the table layout. - No. 49 Lead carbonate - No. 50 Lead sulfate - No. 53 Azodyes contained in the list of azodyes - Added the following substances, newly: - No. 70 MOAH comprising of 1 to 7 aromatic rings - No. 71 Per- and poly-fluoroalkyl substances (PFAS) - Deleted “White phosphorous match (white phosphorous)” from the list. ● Level 2 prohibited substances - Changed the criteria for the following substances, based on the latest regulations: - No. 1 C9-C14 PFCAs, their salts, and C9-C14 PFCA-related substances - Added the following substances, newly: - No. 2 MOAH comprising of 1 to 7 aromatic rings - No. 3 MOAH comprising of 3 to 7 aromatic rings - No. 4 MOSH with 16 to 35 carbon atoms - No. 5 Per- and poly-fluoroalkyl substances (PFAS) ● Notes/Comments on substances - Changed the explanation in note 5, based on the latest regulations. - Added the explanation of PFAS as note 14, newly. - A list of some aromatic amines was added as Table 1. - The number of the table containing the list of azodyes was changed from 1 to 2. ● Table 2.1-1 Battery Restrictions - Changed the column titles in the table Restricted substances and thresholds (as a % of battery weight) ⇒ Substances prohibited in products, requirements, and thresholds - Changed the threshold for lead and lead compounds for the batteries No. 2, 4, 5, 6, 7, 9 - Commercial/industrial battery: A battery designed exclusively for industrial or commercial use. ⇒ Commercial/industrial battery: A battery weighing 5 kg or more and designed exclusively for industrial or commercial use. ● Table 2.1-3 Examples of Prohibited Substances & Substance Groups - Deleted “Azocolourants and azodyes which form certain aromatic amines” - Added 44 substances as examples of PFAS. ● Table 2.1-4 Regulations Referenced - Revised the name & number of the laws in No. 4 based on the latest legislation. - Added the following new laws and regulations: - No. 38 Formaldehyde Emissions from Composite Wood Products Regulations SOR/2021-148 - No. 39 Law on the fight against waste and the circular economy - No. 40 The Health and Safety Code, relating to public health: AB1817 Product safety: textile articles: PFAS ● 2.2 Substances Prohibited from Use in Manufacturing Processes - Added No. 46 “PFHxS, its salts and PFHxS-related compounds” - Revised the number of the substance in No. 47, 48 and 49 - Corrected the Referenced Regulations of No. 47 DDT to “POPs Convention, Annex B (Restriction)”

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