

EMS-029 Separate Guidelines (18)

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Revised: 1 July 2021 (18th Edition)

## Guidelines for Prohibited and Controlled Chemical Substances 18th Edition

## Revision History

No.	Date	Reasons for Revisions	Details of Main Revisions
1	1 February 2010	<ul style="list-style-type: none"> <li>Abolition of Directive 76/769/EEC</li> <li>Revisions to Regulation (EC) No. 1907/2006 (REACH Regulations) Annex X VII and addition of candidate list target substances</li> <li>Revisions to the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Chemical Substances Control Law)</li> <li>Revisions to JIG</li> </ul>	<ul style="list-style-type: none"> <li>Covering designation changed from 76/769/EEC to REACH Regulations Annex X VII and limit conditions added</li> <li>Prohibited substances and managed substances changed or added</li> <li>Related target laws and regulations changed</li> <li>Status notification changed</li> </ul>
2	20 April 2010	<ul style="list-style-type: none"> <li>Materials added to candidate list announced in Section 2</li> <li>LEDs added as an exception to RoHS</li> </ul>	<ul style="list-style-type: none"> <li>Residual amounts of materials in Section 2 announcement added</li> <li>Exception conditions added for cadmium included in LEDs</li> </ul>
3	20 June 2010	<ul style="list-style-type: none"> <li>Materials added to candidate list announced in Section 3</li> <li>Flow of materials in Section 2 announcement added</li> <li>Changes to filling out status notifications</li> </ul>	<ul style="list-style-type: none"> <li>8 substances in Section 3 announcement added</li> <li>Sodium dichromate, dehydrate added</li> <li>Method of filling out status notifications changed and publicised</li> </ul>
4	1 October 2010	<ul style="list-style-type: none"> <li>Status notifications abolished as a result of introduction of JAMP AIS</li> </ul>	<ul style="list-style-type: none"> <li>Investigation methods in Chapter 4 changed and investigation details in Chapter 5 changed to points to note for AIS entry</li> </ul>
5	20 November 2010	<ul style="list-style-type: none"> <li>It puts it together on the number of RoHS exclusion of application.</li> <li>RoHS exclusion of application was announced.</li> </ul>	<ul style="list-style-type: none"> <li>The number of RoHS exclusion of application is changed.</li> <li>Application exclusion was changed by 2010/571/ EU on 24 September 2010.</li> </ul>
6	20 January 2010	<ul style="list-style-type: none"> <li>Materials added to candidate list announced in Section 4</li> </ul>	<ul style="list-style-type: none"> <li>Residual amounts of materials in Section 4 announcement added</li> </ul>
7	30 June 2011	<ul style="list-style-type: none"> <li>Materials added to candidate list announced in Section 5</li> </ul>	<ul style="list-style-type: none"> <li>Residual amounts of materials in Section 5 announcement added</li> </ul>
8	15 December 2011	<ul style="list-style-type: none"> <li>Enforcement of RoHS Directive</li> <li>Materials added to candidate list announced in Section 6</li> <li>The exception for application is added in RoHS Directive.</li> </ul>	<ul style="list-style-type: none"> <li>RoHS Directive is revised and it enforces it on July 1, 2011.</li> <li>Residual amounts of materials in Section 6 announcement added</li> <li>Two exceptions for application were added in RoHS Directive.</li> <li>Add to prohibit Dibutyltin compounds and Dioctyltin compounds</li> <li>Dimethyl fumarate additional</li> </ul>
9	3 September 2012	<ul style="list-style-type: none"> <li>Add the contents to the lack of explanation of DBT and DOT.</li> <li>The view of permissible quantity for the prohibited substances is changed</li> <li>Materials added to candidate list announced in Section 7</li> </ul>	<ul style="list-style-type: none"> <li>Add the threshold of DBT and DOT.</li> <li>Permissible quantity for the prohibited substances is changed from 'the threshold or less' to 'less than the threshold'</li> <li>Residual amounts of materials in Section 7 announcement added</li> </ul>
10	5 June 2013	<ul style="list-style-type: none"> <li>Materials added to candidate list announced in Section 8</li> </ul>	<ul style="list-style-type: none"> <li>Residual amounts of materials in Section 8 announcement added</li> </ul>
11	15 July 2016	<ul style="list-style-type: none"> <li>Candidate List deletion</li> </ul>	<ul style="list-style-type: none"> <li>Candidate List deletion</li> </ul>
12	4 November 2016	<ul style="list-style-type: none"> <li>Materials added to RoHS</li> <li>RoHS exclusion update.</li> </ul>	<ul style="list-style-type: none"> <li>Materials added to RoHS</li> <li>RoHS exclusion update.</li> </ul>
13	1 July 2017	<ul style="list-style-type: none"> <li>Correction of typographical error</li> </ul>	<ul style="list-style-type: none"> <li>Correction of an acronym of a prohibited substance No.9</li> <li>Correction of names of directives, laws, and regulations</li> </ul>
14	1 August 2018	<ul style="list-style-type: none"> <li>Change of information transfer scheme for chemical management</li> <li>Update of RoHS exemptions</li> </ul>	<ul style="list-style-type: none"> <li>Change "AIS" to "chemSHERPA"</li> <li>Renew the table of RoHS Exemption</li> </ul>

No.	Date	Reasons for Revisions	Details of Main Revisions
15	31 July 2019	<ul style="list-style-type: none"> <li>• Update of RoHS exemptions</li> <li>• Adaptation to other categories of EEE in RoHS than category 3</li> <li>• Adaptation to the new POPs under the Stockholm Convention</li> </ul>	<ul style="list-style-type: none"> <li>• Renew the table of RoHS Exemption</li> <li>• Renew the table of prohibited substances</li> </ul>
16	20 December 2019	In case of 2 year-exemption for equipment used to manufacture semi-conductors, PFOA is still used. Therefore it is difficult to conform to "None intentionally added".	Change the criteria "None intentionally added" in the "Threshold value" column of No.34 "Perfluorooctanoic acid (PFOA), its salts and PFOA related compounds" on the table of 6.2), "List of prohibited substances", into the criteria complying to REACH regulation.
17	1 July 2021	Adaption for 5 PBT chemicals of TSCA	Add 5 PBT chemicals of TSCA to the table of prohibited substances.

## 1. Purpose

These Guidelines have been created in order to stipulate the chemical substances which are the objects of standards for control of components which affect the environment, and also to define inspection methods for such chemical substances.

In order to manufacture products which do not harm the environment, the AIPHONE Group has established standards with respect to chemical substances which may be contained in the components and materials used, and these standards specify chemical substances which are either prohibited from use or which must be properly controlled. The Group controls toxic chemical substances based on these regulations, and strictly observes relevant laws and promotes the protection of human health and regeneration of the environment, and promotes designs which give consideration to protecting the environment.

## 2. Scope of application

These Guidelines apply to all items such as parts, raw materials and packaging materials procured by the AIPHONE Group which are required for the manufacturing of the Group's products.

## 3. Subjects to investigation

Prohibited substances and substances to be controlled are. Details of them are described in the upcoming section 6. and 7. respectively.

## 4. Investigation methods

### 1) The adoption of a new part only

- For registration of a new part, "Status Report Use Prohibited Substances" is required.  
In case that RoHS exemption is applicable, fill in the form with its exemption symbol.
- Submit its "EU-RoHS Declaration of Conformity" accompanied by its Specification or Approved Sample Inspection Sheet

### 2) Investigation using chemSHERPA

- Enter details of chemical substances to the data entry support tool, chemSHERPA, while referring its documents and manuals available on the website.
  - \* The latest version of each documents and manuals are available for download on the following URL  
Documents: <https://chemsherpa.net/chemSHERPA/doc/>  
Manuals : <https://chemsherpa.net/chemSHERPA/tool/>

### 3) Registration with the Environment Information System

- If you are registered with the Environment Information System of the AIPHONE Group, You should register the required data in chemSHERPA format.
- If you are not, you should attach the required data in chemSHERPA format to the e-mail to the person in charge.

## 5. Pay attention when you fill in the chemSHERPA format

- 1) In case that RoHS exemption is applicable, fill in the form with its exemption symbol.
  - \* For RoHS exemption symbols, you can refer to the "chemSHERPA Application List" included in the "Data entry support tool" files you downloaded from the website.
- 2) If there is some additional information such as restriction due to REACH Annex X VII applications, remark them down in the Remarks column.

## 6. Prohibited substances

### 1) What are prohibited substances?

- Prohibited substances are basically determined as being chemical substances which have been specified as prohibited by JIG, REACH Regulations Annex X VII and the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances.
- They include substances which are prohibited from being included in products, and substances which are prohibited from use in manufacturing processes.
- They include substances for which some conditions are attached (such as threshold values and application exceptions).

Note: Substances which are not contained in this list shall also be regarded as prohibited substances if specified as such by law, convention, directives or global policy.

## 2) List of prohibited substances

No.	Name of substance	Threshold value	Example of applicable regulation
1	Cadmium and cadmium compounds	*1	100ppm in homogeneous materials RoHS directive REACH Regulation Annex X VII 94/62/EC directive on packaging and packaging waste
2	Hexavalent chromium compounds	*1	1,000ppm in homogeneous materials  RoHS directive
3	Lead and lead compounds	*1 *2	
4	Mercury and mercury compounds	*1	
5	Polybrominated biphenyls (PBBs)	*7	
6	Polybrominated diphenyl ethers (PBDEs)		
7	Bis(2-ethylhexyl) phthalate (DEHP)		
8	Butyl benzyl phthalate (BBP)		
9	Dibutyl phthalate (DBP)		
10	Diisobutyl phthalate (DIBP)		
11	Bis-tributyltin oxide (TBTO)	None intentionally added	
12	Tributyltins (TBTs), triphenyltins (TPTs)		Chemical Substances Control Law (Section 2)
13	Polychlorinated biphenyls (PCBs)		Chemical Substances Control Law (Section 1) REACH Regulation Annex X VII
14	Polychlorinated naphthalene (with 3 or more chlorine atoms)		Chemical Substances Control Law (Section 1)
15	Short chain chlorinated paraffins (C10—C13)		REACH Regulation Annex X VII
16	Asbestos		
17	Azo dyes and pigments		
18	Radioactive materials		Regulations for nuclear reactors, etc.
19	Ozone layer-depleting substances		Montreal Protocol, laws relating to protection of the ozone layer
20	Perfluorooctane sulfonates and their salts		Chemical Substances Control Law (Section 1) REACH Regulation Annex X VII
21	PFOSF Perfluorooctane sulfonyl fluoride		Chemical Substances Control Law (Section 1)
22	Hexabromobiphenyl (HBB)		
23	Tetrabromodiphenyl ether		
24	Pentabromodiphenyl ether		
25	Hexabromodiphenyl ether		
26	Heptabromodiphenyl ether		
27	Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl) (CAS No. 3846-71-7)		
28	Polychlorinated terphenyls (PCTs)		
29	Nickel		
30	Dibutyltin compounds (DBT)	*5	1,000 ppm (tin conversion) REACH Regulation Annex X VII
31	Diocetyl tin compounds (DOT)	*6	
32	Dimethylfumarate (DMF)	*4	
33	Dicofol	None intentionally added	Stockholm Convention Annex A
34	Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds	PFOA and its salts: less than 25ppb PFOA-related: less than 1,000ppb	
35	Decabromodiphenyl ether (DecaBDE)	None intentionally added	TSCA Article 6(h) 5 PBT chemicals

36	Phenol, isopropylated phosphate(3:1) (PIP(3:1))	None intentionally added	TSCA Article 6(h) 5 PBT chemicals
37	2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)	None intentionally added	TSCA Article 6(h) 5 PBT chemicals
38	Hexachlorobutadiene (HCBd)	None intentionally added	TSCA Article 6(h) 5 PBT chemicals
39	Pentachlorothiophenol (PCTP)	None intentionally added	TSCA Article 6(h) 5 PBT chemicals

\*1: According to 94/62/EC, the combined concentration of all four substances in the group must not exceed 100 ppm.

\*2: According to Proposition 65, electrical wires, cables or cords which are coated with thermosetting resins or thermoplastic resins must not have concentrations exceeding 300 ppm in the surface sheath layer.

\*3: Applications for azo dyes and pigments formed from special amines are limited to cases where they contact the skin directly and for long periods of time. Special amines are aromatic amine compounds as specified in 22 below.

No.	Name of Substance	CAS No.
1	Biphenyl-4-ylamine	92-67-1
2	Benzidine	92-87-5
3	4-chloro-2-toluidine	95-69-2
4	2-naphthylamine	91-59-8
5	aminoazotoluene	97-56-3
6	5-nitro-o-toluidine	99-55-8
7	Chloroaniline	106-47-8
8	2,4-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

\*4: None intentionally added. Content is less than 0.1ppm

\*5: Dibutyltin compounds (DBT)

(a) Dibutyltin (DBT) compounds shall not be used after 1 January 2012 in mixtures and articles for supply to the general public where the concentration in the mixture or the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin.

\*6: Dioctyltin compounds (DOT)

(a) Dioctyltin (DOT) compounds shall not be used after 1 January 2012 in the following articles for supply to, or use by, the general public, where the concentration in the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin:

- textile articles intended to come into contact with the skin,
- gloves,
- footwear or part of footwear intended to come into contact with the skin,
- wall and floor coverings,
- childcare articles,
- female hygiene products,
- nappies,
- two-component room temperature vulcanization moulding kits (RTV-2 moulding kits).

\*7: Enforced on all the parts from April 1, 2018

**7. Substances to be controlled**

- 1) What are substances to be controlled?
  - Managed substances are basically SVHCs which are contained in the candidate list of REACH Regulations ((EC) No. 1907/2006).
- 2) List of managed substances
  - Threshold value: 1,000 ppm (article specific gravity)

For reference:European Chemical Agency's website <http://echa.europa.eu/web/guest/home>

## 8. Related laws and regulations

### 1) 2011/65/EU (RoHS( II ) directive), (EU)2015/863 (Commission delegated directive on amending Annex II)

- European Union directive which specifies limits on the usage of specific organic substances which are included in electrical and electronic equipment (EEE)
- Target substances: Lead, mercury, cadmium, hexavalent chromium, PBB, PBDE, DEHP, BBP, DBP, DIBP
- Threshold values: 100 ppm for cadmium, 1,000 ppm for all other substances (specific gravity for homogenous materials)
- Categories of EEE covered by this Directive :ANNEX I

EEE being applied RoHS directive would be categorized into 11 categories. And in those categories, "category 8" and "category 9" are respectively divided into 2 divisions more. According to the difference of the Category number, the expiring date of exemptions describing later is different. Categories of EEE regulated in ANNEX I of RoHS directive is shown as following table. In the case of selling wide variety of products in Europe was assumed, have to be careful of the expiring date of exemptions because applicable category number would be different by each category of Aiphone products.

Category number	Categories of EEE	Categories of Aiphone products	The date RoHS(II) directive enforced
1	Large household appliances.		January 3, 2013
2	Small household appliances.		
3	IT and telecommunications equipment.	Intercom equipment	
4	Consumer equipment.		
5	Lighting equipment.		
6	Electrical and electronic tools.		
7	Toys, leisure, and sports equipment.		
8	In vitro diagnostic medical devices		July 22, 2016
	Medical devices other than in vitro diagnostic medical devices.	Nurse call systems	July 22, 2014
9	Industrial monitoring and control instruments.		July 22, 2017
	Monitoring and control instruments other than industrial monitoring and control instruments.	Electric lock door control devices	July 22, 2014
10	Automatic dispensers.		January 3, 2013
11	Other EEE not covered by any of the categories above.		July 22, 2019

• Exceptions for applications:ANNEX III

The expiring dates of exemptions are different by the category of EEE. There are 11 categories for EEE, but considering the expiring date, they would be sorted into 4 groups as follows. The 1st group consists of the category 1 to 7 and 10, and the 2nd group consists of the category 8 and 9 other than vitro diagnostic medical devices and industrial monitoring and control instruments. And the 3rd group consists of vitro diagnostic medical devices of the category 8 and industrial monitoring and control instruments of the category 9, and the last group consists of category 11. Because we don't product and sell any EEE of the 3rd group above, then, we will show exemptions and expiring dates in the table below other than 3rd group.

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) - Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
<b>Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):</b>				
1(a)	For general lighting purposes < 30 W: :2.5mg	Applicable after 31 December 2012		
1(b)	For general lighting purposes >30 W and < 50 W: 3.5 mg	Applicable after 31 December 2011		
1(c)	For general lighting purposes ≥ 50 W and < 150 W: 5 mg			
1(d)	For general lighting purposes >150 W: 15mg			
1(e)	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm: 7 mg	Applicable since 1 January 2012		
1(f)	For special purposes: 5 mg	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
<del>1(g)</del>	<del>Mercury in single capped (compact) fluorescent lamps for general lighting purposes &lt; 30 W with a lifetime equal or above 20 000 h, not exceeding (per burner) 3.5 mg</del>	Expired on 31 December 2017		
<b>Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):</b>				
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 4 mg	Applicable after 31 December 2011		
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 3 mg	Applicable after 31 December 2011		
2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8): 3.5 mg	Applicable after 31 December 2011		
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 3.5 mg	Applicable after 31 December 2012		
2(a)(5)	Tri-band phosphor with long lifetime(>25,000 h): 5 mg	Applicable after 31 December 2011		
<b>Mercury in other fluorescent lamps not exceeding (per lamp):</b>				
<del>2(b)(1)</del>	<del>Linear halophosphate lamps with tube diameter ≥ 28 mm (e.g. T10 and T12): 10mg</del>	Expired on 13 April 2012		
<del>2(b)(2)</del>	<del>Non-linear halophosphate lamps (all diameters): 15 mg</del>	Expired on 13 April 2016		
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9) : 15 mg	Applicable after 31 December 2011	Expires on 21 July 2024	
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps) : 15 mg	Applicable after 31 December 2011	Expires on 21 July 2024	

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) - Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):				
3(a)	Short length ( $\leq 500$ mm) : 3.5 mg	Applicable after 31 December 2011		Expires on 21 July 2024
3(b)	Medium length ( $> 500$ mm and $\leq 1\,500$ mm) : 5 mg	Applicable after 31 December 2011		Expires on 21 July 2024
3(c)	Long length ( $> 1,500$ mm) : 13 mg	Applicable after 31 December 2011		Expires on 21 July 2024
4(a)	Mercury in other low pressure discharge lamps (per lamp) : 15 mg	Applicable after 31 December 2011		Expires on 21 July 2024
Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index $R_a > 60$ :				
4(b)-I	$P \leq 155$ W: 30 mg	Applicable after 31 December 2011		
4(b)-II	$155$ W $< P \leq 405$ W: 40 mg	Applicable after 31 December 2011		
4(b)-III	$P > 405$ W: 40 mg	Applicable after 31 December 2011		
Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):				
4(c)-I	$P \leq 155$ W: 25 mg	Applicable after 31 December 2011		
4(c)-II	$155$ W $< P \leq 405$ W: 30 mg	Applicable after 31 December 2011		
4(c)-III	$P > 405$ W: 40 mg	Applicable after 31 December 2011		
<del>4(d)</del>	<del>Mercury in High Pressure Mercury (vapour) lamps (HPMV)</del>	Expired on 13 April 2015		
4(e)	Mercury in metal halide lamps (MH)	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
4(g)	<del>Mercury in hand-crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light artwork, where the mercury content shall be limited as follows: (a) 20 mg per electrode pair + 0.3 mg per tube length in cm, but not more than 80 mg, for outdoor applications exposed to temperatures below 20 °C; (b) 15 mg per electrode pair + 0.24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.</del>	Expired on 31 December 2018		
5(a)	Lead in glass of cathode ray tubes	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
5(b)	Lead in glass of fluorescent tubes not exceeding 0.2% by weight	Expired on 21 July 2016	Expires on 21 July 2021 Undergoing evaluation	Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) - Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight	6(a)-I is applicable	Expires on 21 July 2021 <b>Undergoing evaluation</b>	Expires on 21 July 2024
6(a)-I	Lead as an alloying element in steel for machining purposes containing up to 0.35% lead by weight and in batch hot dip galvanized steel components containing up to 0.2% lead by weight	Expires on 21 July 2021 <b>Undergoing evaluation</b>	—	—
6(b)	Lead as an alloying element in aluminium containing up to 0.4% lead by weight	6(b)-I or 6(b)-II is applicable	Expires on 21 July 2021 <b>Undergoing evaluation</b>	Expires on 21 July 2024
6(b)-I	Lead as an alloying element in aluminium containing up to 0.4% lead by weight, provided it stems from lead-bearing aluminium scrap recycling	Expires on 21 July 2021 <b>Undergoing evaluation</b>	—	—
6(b)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0.4% by weight	Expires on 18 May 2021 <b>Undergoing evaluation</b>	—	—
6(c)	Copper alloy containing up to 4% lead by weight	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
7(a)	Lead in high melting temperature type solders (i.e.lead-based alloys containing 85% by weight or more lead)	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	Expired on 20 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	May be used in spare parts for EEE placed on the market before 1 January 2013		—
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	Expires on 21 July 2021		Expires on 21 July 2024

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) - Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	May be used in spare parts for EEE placed on the market before 1 January 2012		
8(b)	Cadmium and its compounds in electrical contacts	8(b)-I is applicable	Expires on 21 July 2021	Expires on 21 July 2024
8(b)-I	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: - 6A and more at 250V AC and more, or - 12A and more at 125V AC and more, - DC switches rated at 20A and more at 20A and more at 18V DC and more, and - switches for use at voltage supply frequency $\geq 200$ Hz.	Expires on 21 July 2021	—	—
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0.75 % by weight in the cooling solution	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	Expired on 5 July 2018	Expires on 21 July 2021	Expires on 21 July 2024
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010		
11(b)	Lead used in other than C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 1 January 2013 EN L 251/32 Official Journal of the European Union 25.9.2010		
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010		
13(a)	Lead in white glasses used for optical applications	Expires on 21 July 2021	Expires on 21 July 2021	Expires on 21 July 2024
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standard	13(b)-I or II or III is applicable	Expires on 21 July 2021	Expires on 21 July 2024
13(b)- I	Cadmium and lead in filter glasses and glasses used for reflectance standards	Expires on 21 July 2021	—	—
13(b)- II	Cadmium striking optical filter glass types; excluding applications falling under point 39 of this Annex	Expires on 21 July 2021	—	—
13(b)- III	Cadmium and lead in glazes used for reflectance standards	Expires on 21 July 2021	—	—
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight	Expired on 1 January 2019. May be used in spare parts for EEE placed on the market before 1 January 2011		

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) - Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	15(a) is applicable	Expires on 21 July 2021	Expires on 21 July 2024
15(a)	Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies: - a semiconductor technology node of 90nm or larger; - a single die of 300mm <sup>2</sup> or larger in any semiconductor technology nodes; - stacked die packages with die of 300mm <sup>2</sup> or larger, or silicon interposers of 300mm <sup>2</sup> or larger.	Expires on 21 July 2021	—	—
<del>16</del>	<del>Lead in linear incandescent lamps with silicate-coated tubes</del>	Expired on 1 September 2013		
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
<del>18(a)</del>	<del>Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba)2MgSi2O7:Pb)</del>	Expired on 1 January 2011		
18(b)	Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi2O5:Pb)	Expires on 21 July 2021 <b>Undergoing evaluation</b>	Expires on 21 July 2021 <b>Undergoing evaluation</b>	Expires on 21 July 2024
18(b)-I	Lead as activator in the fluorescent powder (1% lead by weight or less) or discharge lamps containing phosphors such as BSP (BaSi2O5:Pb) when used in medical phototherapy equipment	Applies to Category 5, Expires on 21 July 2021 <b>Undergoing evaluation</b>	Applies to Category 8, Expires on 21 July 2021 <b>Undergoing evaluation</b>	—
<del>19</del>	<del>Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)</del>	Expired on 1 June 2011		
<del>20</del>	<del>Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)</del>	Expired on 1 June 2011		
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	21(a) or 21(b) or 21(c) is applicable	Expires on 21 July 2021	Expires on 21 July 2024
21(a)	Cadmium when used in colour printed glass to provide filtering functions, used as a component in lighting applications installed in displays and control panels of EEE	Except covered by 21(b) or 39 Expires on 21 July 2021	—	—
21(b)	Cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	Except covered by 21(a) or 39 Expires on 21 July 2021	—	—
21(c)	Lead in printing inks for the application of enamels on other than borosilicate glasses	Expires on 21 July 2021	—	—

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) -Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010		
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
<del>26</del>	<del>Lead oxide in the glass envelope of black light blue lamps</del>	Expired on 1 June 2011		
<del>27</del>	<del>Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 db SPL and above) loudspeakers</del>	Expired on 24 September 2010		
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB(A) and more	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
34	Lead in cermet-based trimmer potentiometer elements	Expires on 21 July 2021 <b>Undergoing evaluation</b>		Expires on 21 July 2024
<del>36</del>	<del>Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display</del>	Expired on 1 July 2010		
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	Expires on 21 July 2021		Expires on 21 July 2024
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	Expired on 21 July 2016	Expires on 21 July 2021	Expires on 21 July 2024
<del>39</del>	<del>Cadmium in colour converting II-VI LEDs (&lt; 10 µg Cd per mm<sup>2</sup> of light emitting area) for use in solid state illumination or display systems</del>	Expired for all categories on 20 November 2018		
39(a)	Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0.2 µg Cd per mm <sup>2</sup> of display screen area)	Expired for all categories on 31 October 2019		

No.	Exemption	Scope and dates of applicability		
		For cat.1 to 7 or 10 - Intercom equipment (cat.3)	For cat.8 or 9 (other than in vitro or industrial use) - Nurse call systems (cat.8) - Electric lock door control devices (cat.9)	For cat.11 - Cable
41	Lead in solders and termination finishers of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council.	Expired on 31 December 2018	Expires on 21 July 2021	Expired on 31 December 2018
42	Lead in bearings and bushes of diesel or gaseous fuel powered internal combustion engines applied in non-road professional use equipment: - with engine total displacement < 15 litres and the engine is designed to operate in applications where the time between signal to start and full load is required to be less than 10 seconds ; or regular maintenance is typically performed in a harsh and dirty outdoor environment, such as mining, construction, and agriculture applications.	—	—	Applies only for category 11 except covered by 6(c) Expires on 21 July 2024

Regulation (EC) No. 1907/2006(REACH Regulation)

- European regulation concerning the registration, evaluation, authorisation and restriction of chemicals
- Substances in candidate list: Threshold 1,000 ppm
- Annex X VII: Limited substance groups (105 substance groups). Limitation conditions apply, and they are listed below.

No.	Name of Substance	Limitation Conditions
1	Polychlorinated terphenyls (PCTs) CAS№ 61788-33-8	✧ The placing on the market and use of preparations, including waste oils, with a PCT content higher than 50 mg/kg (0,005 % by weight) shall be prohibited
6	Asbestos fibres (a) Crocidolite CAS No 12001-28-4 (b) Amosite CAS No 12172-73-5 (c) Anthophyllite CAS No 77536-67-5 (d) Actinolite CAS No 77536-66-4 (e) Tremolite CAS No 77536-68-6 (f) Chrysotile CAS No 12001-29-5 CAS No 132207-32-0	✧ The placing on the market and use of these fibres and of articles containing these fibres added intentionally shall be prohibited. ◆ Member States may except the placing on the market and use of diaphragms containing chrysotile (point (f)) for existing electrolysis installations ◆ The use of installations existing prior to 1 January 2005 or the use of molded products containing asbestos fibres shall be permissible until disposed of or until they reach the end of their service life.
27	Nickel and nickel compounds CAS No 7440-02-0 EC No 231-111-4	✧ Shall not be used in all post assemblies which are inserted into pierced ears and other pierced parts of the human body ✧ Shall not be used in articles such as the following which are intended to come into direct and prolonged contact with the skin if the rate of nickel release from such articles exceeds 0.5 µg/cm <sup>2</sup> /week: • Earrings, necklaces, anklets, finger rings,, bracelets, wristwatches, clothing zippers, rivets and metal marks Use shall not be allowed even if the article's coating does not contain nickel but the rate of nickel release from such article exceeds 0.5 µg/cm <sup>2</sup> /week. ◆ Usage shall be allowed if the rate of nickel release from such article is less than 0.2 µg/cm <sup>2</sup> /week (migration limit).
42	Alkanes, C 10 -C 13 , chloro (shortchain chlorinated paraffins)(SCCPs) CAS No 85535-84-8 EC No 287-476-5	✧ Shall not be placed on the market for use as substances or as constituents of other substances or preparations in concentrations higher than 1 %: • in metalworking; • for fat liquoring of leather.
43	Azocolourants and Azodyes	✧ Azodyes shall not be used in textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity, such as: • Clothing, bedding, towels, hairpieces, wigs, hats, nappies and other sanitary items, sleeping bags, footwear, gloves, wristwatch bands, straps, handbags, purses/wallets, chair covers, briefcases, purses worn round the neck • Textile or leather toys and toys which include textile or leather garments • Yarn and fabrics intended for use by the final consumer ✧ Azodyes shall not be placed on the market or used for colouring textile and leather articles as a substance or constituent of preparations in concentrations higher than 0,1 % by mass.

- 3) 94/62/EC Packaging and packing waste directive
  - Directive from European council regarding packaging materials and packaging waste
  - Target substances: Lead, mercury, cadmium, hexavalent chromium
  - Threshold values: Combined concentration of all four substances must be 100 ppm or less
- 4) The Model Toxics in Packaging Legislation
  - The concentration of heavy metals used in packaging is restricted to 100 ppm or less from commencement until the 4th year.
  - Introduced in 18 American states
- 5) Law concerning the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law)
  - A law concerning the manufacturing, importing and use of new substances, which establishes systems for examining whether such materials can be separated out with difficulty or not.
  - Section 1 designated chemical substances: Limiting and reporting on manufacturing, importing and use, duty to comply with standards, duty to display relevant data
  - Section 2 designated substances: Reporting on manufacturing, importing and use, duty to display relevant data
  - Applications where chemical substances may be used

Name of Substance	Application
PFOS and its salts	1) Manufacture of etching agents (Use is limited to the manufacturing of compound semiconductors for piezoelectric filters and wireless equipment which can receive electromagnetic waves at 3 MHz or higher.)
	2) Manufacture of semiconductor resists
	3) Manufacture of commercial-use photographic films

- Products where Section 1 chemical substances must be used for compliance with technological standards

Name of Substance	Application
PFOS and its salts	1) Etching agents (Use is limited to the manufacturing of compound semiconductors for piezoelectric filters and wireless equipment which can receive electromagnetic waves at 3 MHz or higher.)
	2) Semiconductor resists
	3) Commercial-use photographic films (* For the present time, this covers commercial-use photographic films and fire extinguishing agents for fire extinguishers and foam fire extinguishing agents.)

- 6) Montreal Protocol on Substances that Deplete the Ozone Layer
  - Regulations regarding manufacturing volumes and consumption volumes for designated substances which damage the ozone layer.
- 7) Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors
  - For the peaceful use of radioactive materials and fuels, adherence to planned applications, prevention of disasters, and public safety
  - Reporting on the usage of each designated material
- 8) The Law Concerning the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures
  - Established to provide limits on the manufacture of designated substances, controls on discharge and rationalization of use.
- 9) California Proposition 65
  - The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) is a California state law that has been in effect since 1986
  - This state law regulates warning labelling and discharging of toxic substances that cause cancer or birth defects or other reproductive harm.