

## ANNEX I

**Categories of EEE covered by this Directive**

1. Large household appliances.
2. Small household appliances.
3. IT and telecommunications equipment.
4. Consumer equipment.
5. Lighting equipment.
6. Electrical and electronic tools.
7. Toys, leisure and sports equipment.
8. Medical devices.
9. Monitoring and control instruments including industrial monitoring and control instruments.
10. Automatic dispensers.
11. Other EEE not covered by any of the categories above.

[<sup>F1</sup>ANNEX II**Restricted substances referred to in Article 4(1) and maximum concentration values tolerated by weight in homogeneous materials****Textual Amendments**

- F1** Substituted by [Commission Delegated Directive \(EU\) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances \(Text with EEA relevance\)](#).

Lead (0,1 %)

Mercury (0,1 %)

Cadmium (0,01 %)

Hexavalent chromium (0,1 %)

Polybrominated biphenyls (PBB) (0,1 %)

Polybrominated diphenyl ethers (PBDE) (0,1 %)

Bis(2-ethylhexyl) phthalate (DEHP) (0,1 %)

Butyl benzyl phthalate (BBP) (0,1 %)

Dibutyl phthalate (DBP) (0,1 %)

Diisobutyl phthalate (DIBP) (0,1 %)

The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including *in vitro* medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

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The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including *in vitro* medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.

The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.]

### ANNEX III

#### APPLICATIONS EXEMPTED FROM THE RESTRICTION IN ARTICLE 4(1)

Exemption		Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a)	For general lighting purposes < 30 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes $\geq 30$ W and < 50 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011
1(c)	For general lighting purposes $\geq 50$ W and < 150 W: 5 mg	
1(d)	For general lighting purposes $\geq 150$ W: 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter $\leq 17$ mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
a	OJ L 326, 29.12.1969, p. 36.	
b	[ <sup>F2</sup> Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]	
c	[ <sup>F3</sup> Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]	
d	[ <sup>F4</sup> Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]	

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1(f)	For special purposes: 5 mg	
[ <sup>F5</sup> 1(g)]	For general lighting purposes < 30 W with a lifetime equal or above 20 000 h: 3,5 mg	Expires on 31 December 2017]
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg	Expires on 31 December 2011; 4 mg may be used per lamp 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): 5 mg	Expires on 31 December 2011; 3 mg may be used per lamp 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): 5 mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5)	Tri-band phosphor with long lifetime (≥ 25 000 h): 8 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(1)	Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg	Expires on 13 April 2012
2(b)(2)	Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3	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)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length ( $> 500$ mm and $\leq 1\ 500$ mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length ( $> 1\ 500$ mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a)	Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
4(b)	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	No limitation of use until 31 December 2011; 30 mg may

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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		be used per burner after 31 December 2011
4(b)-II	$155 \text{ W} < P \leq 405 \text{ W}$	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b)-III	$P > 405 \text{ W}$	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I	$P \leq 155 \text{ W}$	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II	$155 \text{ W} < P \leq 405 \text{ W}$	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III	$P > 405 \text{ W}$	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	

**a** [OJ L 326, 29.12.1969, p. 36.](#)

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery ([OJ L 59, 27.2.1998, p. 1.](#))]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass ([OJ L 326, 29.12.1969, p. 36.](#))]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC ([OJ L 252, 16.9.2016, p. 53.](#))]

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[ <sup>F6</sup> 4(g)]	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 and indoor 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.	Expires on 31 December 2018]
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
[ <sup>F7</sup> 6(a)]	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	Expires on: — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices;

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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		— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.
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 galvanised steel components containing up to 0,2 % lead by weight	Expires on 21 July 2021 for categories 1-7 and 10.]
[ <sup>F8</sup> 6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	Expires on: <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments,</li> <li>— 21 July 2023 for category 8 <i>in vitro</i> diagnostic medical devices,</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.</li> </ul>
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 for categories 1-7 and 10.
6(b)-II	Lead as an alloying element in aluminium for machining	Expires on 18 May 2021 for categories 1-7 and 10.]

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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	purposes with a lead content up to 0,4 % by weight	
[ <sup>F9</sup> 6(c)]	Copper alloy containing up to 4 % lead by weight	Expires on: — 21 July 2021 for categories 1-7 and 10, — 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 <i>in vitro</i> diagnostic medical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]
[ <sup>F10</sup> 7(a)]	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	Applies to categories 1-7 and 10 (except applications covered by point 24 of this Annex) and expires on 21 July 2021. For categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments expires on 21 July 2021. For category 8 <i>in vitro</i> diagnostic medical devices expires on 21 July 2023. For category 9 industrial monitoring and control

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]



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		instruments, and for category 11 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	
[ <sup>F11</sup> 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	Applies to categories 1-7 and 10 (except applications covered under point 34) and expires on 21 July 2021. For categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments expires on 21 July 2021. For category 8 <i>in vitro</i> diagnostic medical devices expires on 21 July 2023. For category 9 industrial monitoring and control instruments, and for category 11 expires on 21 July 2024.]
[ <sup>F12</sup> 7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Does not apply to applications covered by point 7(c)-I and 7(c)-IV of this Annex. Expires on: — 21 July 2021 for categories 1-7 and 10; — 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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		<ul style="list-style-type: none"> <li>— and industrial monitoring and control instruments;</li> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]</li> </ul>
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
[ <sup>F13</sup> 7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors	Expires on: <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 1-7 and 10;</li> <li>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;</li> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments,</li> </ul>

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

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		and for category 11.]
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
[ <sup>F14</sup> 8(b)	Cadmium and its compounds in electrical contacts	Applies to categories 8, 9 and 11 and expires on: <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments;</li> <li>— 21 July 2023 for category 8 <i>in vitro</i> diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.</li> </ul>
8(b)-I	Cadmium and its compounds in electrical contacts used in: <ul style="list-style-type: none"> <li>— circuit breakers,</li> <li>— thermal sensing controls,</li> <li>— thermal motor protectors (excluding hermetic thermal motor protectors),</li> <li>— AC switches rated at: <ul style="list-style-type: none"> <li>— 6 A and more at</li> </ul> </li> </ul>	Applies to categories 1 to 7 and 10 and expires on 21 July 2021.]

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

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	<ul style="list-style-type: none"> <li>— 250 V AC and more, or</li> <li>— 12 A and more at 125 V AC and more,</li> <li>— DC switches rated at 20 A and more at 18 V DC and more, and</li> <li>— switches for use at voltage supply frequency <math>\geq</math> 200 Hz.</li> </ul>	
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	
[ <sup>F15</sup> (b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	Applies to categories 8, 9 and 11; expires on: <ul style="list-style-type: none"> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices,</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments and for category 11,</li> <li>— 21 July 2021 for other subcategories of categories 8 and 9.</li> </ul>
9(b)-(I)	Lead in bearing shells and bushes for refrigerant-containing hermetic scroll compressors with a stated	Applies to category 1; expires on 21 July 2019.]

**a** [OJ L 326, 29.12.1969, p. 36.](#)

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery ([OJ L 59, 27.2.1998, p. 1](#)).]

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	electrical power input equal or below 9 kW for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
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	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
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
[ <sup>F16</sup> 13(a)]	Lead in white glasses used for optical applications	Applies to all categories; expires on: <ul style="list-style-type: none"> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments and for category 11;</li> <li>— 21 July 2021 for all other categories and subcategories]</li> </ul>
[ <sup>F17</sup> 13(b)]	Cadmium and lead in filter glasses and glasses used for reflectance standards	Applies to categories 8, 9 and 11; expires on: <ul style="list-style-type: none"> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial</li> </ul>

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

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**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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		— monitoring and control instruments and for category 11; 21 July 2021 for other subcategories of categories 8 and 9
13(b)-(I)	Lead in ion coloured optical filter glass types	Applies to categories 1 to 7 and 10; expires on 21 July 2021 for categories 1 to 7 and 10
13(b)-(II)	Cadmium in striking optical filter glass types; excluding applications falling under point 39 of this Annex	
13(b)-(III)	Cadmium and lead in glazes used for reflectance standards]	
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 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
[ <sup>F18</sup> 15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	Applies to categories 8, 9 and 11 and expires on: <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;</li> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial</li> </ul>

**a** [OJ L 326, 29.12.1969, p. 36.](#)

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery ([OJ L 59, 27.2.1998, p. 1.](#))]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass ([OJ L 326, 29.12.1969, p. 36.](#))]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC ([OJ L 252, 16.9.2016, p. 53.](#))]

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		monitoring and control instruments, and for category 11.
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: <ul style="list-style-type: none"> <li>— a semiconductor technology node of 90 nm or larger;</li> <li>— a single die of 300 mm<sup>2</sup> or larger in any semiconductor technology node;</li> <li>— stacked die packages with die of 300 mm<sup>2</sup> or larger, or silicon interposers of 300 mm<sup>2</sup> or larger.</li> </ul>	Applies to categories 1 to 7 and 10 and expires on 21 July 2021.]
16	Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a)	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	Expired on 1 January 2011

**a** OJ L 326, 29.12.1969, p. 36.

**b** [F<sup>2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [F<sup>3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [F<sup>4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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	processes containing phosphors such as SMS ((Sr,Ba) <sub>2</sub> MgSi <sub>2</sub> O <sub>7</sub> :Pb)	
[ <sup>F19</sup> 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 (BaSi <sub>2</sub> O <sub>5</sub> :Pb)	Expires on: — 21 July 2021 for categories 1-7 and 10; — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.
18(b)-I	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps containing phosphors such as BSP (BaSi <sub>2</sub> O <sub>5</sub> :Pb) when used in medical phototherapy equipment	Applies to categories 5 and 8, excluding applications covered by entry 34 of Annex IV, and expires on 21 July 2021.]
19	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)	Expires on 1 June 2011

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]



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20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
[ <sup>F20</sup> 21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	Applies to categories 8, 9 and 11 and expires on: <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments;</li> <li>— 21 July 2023 for category 8 in vitro diagnostic medical devices;</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.</li> </ul>
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	Applies to categories 1 to 7 and 10 except applications covered by entry 21(b) or entry 39 and 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	Applies to categories 1 to 7 and 10 except applications covered by entry 21(a) or 39 and expires on 21 July 2021.
21(c)	Lead in printing inks for the application of enamels on other than borosilicate glasses	Applies to categories 1 to 7 and 10 and expires on 21 July 2021.]

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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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
[ <sup>F21</sup> 24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Expires on: <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 1-7 and 10,</li> <li>— 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments,</li> <li>— 21 July 2023 for category 8 <i>in vitro</i> diagnostic medical devices,</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]</li> </ul>
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
27	Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels	Expired on 24 September 2010

a [OJ L 326, 29.12.1969, p. 36.](#)

b [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

c [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

d [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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	of 125 dB SPL and above) loudspeakers	
[ <sup>F3</sup> 29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC <sup>c</sup>	Expires on: — 21 July 2021 for categories 1-7 and 10; — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]
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	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)	
[ <sup>F22</sup> 32	Lead oxide in seal frit used for making window	Expires on:

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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	assemblies for Argon and Krypton laser tubes	<ul style="list-style-type: none"> <li>— 21 July 2021 for categories 1-7 and 10,</li> <li>— 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments,</li> <li>— 21 July 2023 for category 8 <i>in vitro</i> diagnostic medical devices,</li> <li>— 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]</li> </ul>
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
[ <sup>F23</sup> 34	Lead in cermet-based trimmer potentiometer elements	<p>Applies to all categories; expires on:</p> <ul style="list-style-type: none"> <li>— 21 July 2021 for categories 1-7 and 10,</li> <li>— 21 July 2021 for categories 8 and 9 other than <i>in vitro</i> diagnostic medical devices and industrial monitoring and control instruments,</li> <li>— 21 July 2023 for category 8 <i>in vitro</i></li> </ul>

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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		— diagnostic medical devices, 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]
36	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
[ <sup>F24</sup> 37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	Expires on: — 21 July 2021 for categories 1-7 and 10; — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.]
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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[ <sup>F25</sup> 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)	[ <sup>X1</sup> Expires for all categories on 31 October 2019]]
[ <sup>F26</sup> 40]	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013]
[ <sup>F24</sup> 1]	Lead in solders and termination finishes 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 <sup>b</sup> )	Expires on 31 December 2018]
[ <sup>F27</sup> 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; or — with engine total displacement < 15 litres and the engine is designed	Applies to category 11, excluding applications covered by entry 6(c) of this Annex. Expires on 21 July 2024.]

**a** OJ L 326, 29.12.1969, p. 36.

**b** [<sup>F2</sup>Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]

**c** [<sup>F3</sup>Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]

**d** [<sup>F4</sup>Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]

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	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.	
[ <sup>F28</sup> 43	Bis(2-ethylhexyl) phthalate in rubber components in engine systems, designed for use in equipment that is not intended solely for consumer use and provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin and the concentration value of bis(2-ethylhexyl) phthalate does not exceed: (a) 30 % by weight of the rubber for (i) gasket coatings; (ii) solid-rubber gaskets; or (iii) rubber components included in assemblies	Applies to category 11 and expires on 21 July 2024.]
a	OJ L 326, 29.12.1969, p. 36.	
b	[ <sup>F2</sup> Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]	
c	[ <sup>F3</sup> Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]	
d	[ <sup>F4</sup> Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]	

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	<p>of at least three components using electrical, mechanical or hydraulic energy to do work, and attached to the engine.</p> <p>(b) 10 % by weight of the rubber for rubber-containing components not referred to in point (a).</p> <p>For the purposes of this entry, ‘prolonged contact with human skin’ means continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day.</p>	
[ <sup>F4</sup> 44	Lead in solder of sensors, actuators, and engine control units of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council <sup>d</sup> , installed in equipment used at fixed positions while in operation which is designed for professionals, but also used by non-professional users	Applies to category 11 and expires on 21 July 2024.]
<b>a</b>	OJ L 326, 29.12.1969, p. 36.	
<b>b</b>	[ <sup>F2</sup> Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery (OJ L 59, 27.2.1998, p. 1).]	
<b>c</b>	[ <sup>F3</sup> Council Directive 69/493/EEC of 15 December 1969 on the approximation of the laws of the Member States relating to crystal glass (OJ L 326, 29.12.1969, p. 36).]	
<b>d</b>	[ <sup>F4</sup> Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).]	



### Editorial Information

- X1** Substituted by [Corrigendum to Commission Delegated Directive \(EU\) 2017/1975 of 7 August 2017 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for cadmium in colour converting light-emitting diodes \(LEDs\) for use in display systems \(Official Journal of the European Union L 281 of 31 October 2017\)](#).

### Textual Amendments

- F2** Inserted by [Commission Delegated Directive 2014/72/EU of 13 March 2014 amending, for the purposes of adapting to technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems \(Text with EEA relevance\)](#).
- F3** Substituted by [Commission Delegated Directive \(EU\) 2019/174 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead bound in crystal glass as defined in Directive 69/493/EEC \(Text with EEA relevance\)](#).
- F4** Inserted by [Commission Delegated Directive \(EU\) 2019/1846 of 8 August 2019 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders used in certain combustion engines \(Text with EEA relevance\)](#).
- F5** Inserted by [Commission Delegated Directive 2014/14/EU of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for 3,5 mg mercury per lamp in single capped compact fluorescent lamps for general lighting purposes < 30 W with a lifetime equal to or above 20000 h \(Text with EEA relevance\)](#).
- F6** Inserted by [Commission Delegated Directive 2014/76/EU of 13 March 2014 amending, for the purposes of adapting to technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for Mercury in hand crafted luminous discharge tubes \(HLDTs\) used for signs, decorative or architectural and specialist lighting and light-artwork \(Text with EEA relevance\)](#).
- F7** Substituted by [Commission Delegated Directive \(EU\) 2018/739 of 1 March 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead as an alloying element in steel \(Text with EEA relevance\)](#).
- F8** Substituted by [Commission Delegated Directive \(EU\) 2018/740 of 1 March 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead as an alloying element in aluminium \(Text with EEA relevance\)](#).
- F9** Substituted by [Commission Delegated Directive \(EU\) 2018/741 of 1 March 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead as an alloying element in copper \(Text with EEA relevance\)](#).
- F10** Substituted by [Commission Delegated Directive \(EU\) 2018/742 of 1 March 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in high melting temperature solders \(Text with EEA relevance\)](#).
- F11** Substituted by [Commission Delegated Directive \(EU\) 2018/736 of 27 February 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for certain electrical and electronic components containing lead in glass or ceramic \(Text with EEA relevance\)](#).

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- F12** Substituted by Commission Delegated Directive (EU) 2019/169 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in dielectric ceramic in certain capacitors (Text with EEA relevance).
- F13** Substituted by Commission Delegated Directive (EU) 2019/170 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in PZT based dielectric ceramic materials for certain capacitors (Text with EEA relevance).
- F14** Substituted by Commission Delegated Directive (EU) 2019/171 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for cadmium and its compounds in electrical contacts (Text with EEA relevance).
- F15** Substituted by Commission Delegated Directive (EU) 2017/1010 of 13 March 2017 amending, for the purposes of adapting to technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in bearing shells and bushes for certain refrigerant-containing compressors (Text with EEA relevance).
- F16** Substituted by Commission Delegated Directive (EU) 2017/1011 of 15 March 2017 amending, for the purposes of adapting to technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in white glasses used for optical applications (Text with EEA relevance).
- F17** Substituted by Commission Delegated Directive (EU) 2017/1009 of 13 March 2017 amending, for the purposes of adapting to technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for cadmium and lead in filter glasses and glasses used for reflectance standards (Text with EEA relevance).
- F18** Substituted by Commission Delegated Directive (EU) 2019/172 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages (Text with EEA relevance).
- F19** Substituted by Commission Delegated Directive (EU) 2019/177 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead as activator in the fluorescent powder of discharge lamps containing phosphors (Text with EEA relevance).
- F20** Substituted by Commission Delegated Directive (EU) 2019/173 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead and cadmium in printing inks for the application of enamels on glasses (Text with EEA relevance).
- F21** Substituted by Commission Delegated Directive (EU) 2018/737 of 27 February 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors (Text with EEA relevance).
- F22** Substituted by Commission Delegated Directive (EU) 2019/175 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead oxide in seal frit used for making window assemblies for certain laser tubes (Text with EEA relevance).
- F23** Substituted by Commission Delegated Directive (EU) 2018/738 of 27 February 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in cermet-based trimmer potentiometer elements (Text with EEA relevance).
- F24** Substituted by Commission Delegated Directive (EU) 2019/176 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the

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European Parliament and of the Council as regards an exemption for lead in the plating layer of certain diodes (Text with EEA relevance).

- F25** Substituted by Commission Delegated Directive (EU) 2017/1975 of 7 August 2017 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for cadmium in colour converting light-emitting diodes (LEDs) for use in display systems (Text with EEA relevance).
- F26** Inserted by Commission Delegated Directive 2012/51/EU of 10 October 2012 amending, for the purposes of adapting to technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for applications containing cadmium (Text with EEA relevance).
- F27** Inserted by Commission Delegated Directive (EU) 2019/178 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in bearings and bushes applied in certain non-road professional use equipment (Text with EEA relevance).
- F28** Inserted by Commission Delegated Directive (EU) 2019/1845 of 8 August 2019 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for bis(2-ethylhexyl) phthalate (DEHP) in certain rubber components used in engine systems (Text with EEA relevance).

## ANNEX IV

### **Applications exempted from the restriction in Article 4(1) specific to medical devices and monitoring and control instruments**

Equipment utilising or detecting ionising radiation

1. Lead, cadmium and mercury in detectors for ionising radiation.
  2. Lead bearings in X-ray tubes.
  3. Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.
  4. Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons.
  5. Lead in shielding for ionising radiation.
  6. Lead in X-ray test objects.
  7. Lead stearate X-ray diffraction crystals.
  8. Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers.
- Sensors, detectors and electrodes
- 1a. Lead and cadmium in ion selective electrodes including glass of pH electrodes.
  - 1b. Lead anodes in electrochemical oxygen sensors.
  - 1c. Lead, cadmium and mercury in infra-red light detectors.
  - 1d. Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide.

Others

9. Cadmium in helium-cadmium lasers.

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10. Lead and cadmium in atomic absorption spectroscopy lamps.
11. Lead in alloys as a superconductor and thermal conductor in MRI.
- [<sup>F29</sup>12. Lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR (Nuclear Magnetic Resonance) or FTMS (Fourier Transform Mass Spectrometer) detectors. Expires on 30 June 2021.]

#### Textual Amendments

**F29** Substituted by [Commission Delegated Directive 2014/9/EU of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR \(Nuclear Magnetic Resonance\) or FTMS \(Fourier Transform Mass Spectrometer\) detectors \(Text with EEA relevance\).](#)

13. Lead in counterweights.
14. Lead in single crystal piezoelectric materials for ultrasonic transducers.
15. Lead in solders for bonding to ultrasonic transducers.
16. Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay.
17. Lead in solders in portable emergency defibrillators.
18. Lead in solders of high performance infrared imaging modules to detect in the range 8-14 µm.
19. Lead in Liquid crystal on silicon (LCoS) displays.
20. Cadmium in X-ray measurement filters.
- [<sup>F30</sup>21. Cadmium in phosphor coatings in image intensifiers for X-ray images until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020.]

#### Textual Amendments

**F30** Inserted by [Commission Delegated Directive 2014/2/EU of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for cadmium in phosphor coatings in image intensifiers for X-ray images until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020 \(Text with EEA relevance\).](#)

- [<sup>F31</sup>22. Lead acetate marker for use in stereotactic head frames for use with CT and MRI and in positioning systems for gamma beam and particle therapy equipment. Expires on 30 June 2021.]

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#### Textual Amendments

**F31** Inserted by [Commission Delegated Directive 2014/3/EU of 18 October 2013](#) amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead acetate marker for use in stereotactic head frames for use with CT (Computed Tomography) and MRI and in positioning systems for gamma beam and particle therapy equipment (Text with EEA relevance).

[<sup>F32</sup>23. Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation. Expires on 30 June 2021.]

#### Textual Amendments

**F32** Inserted by [Commission Delegated Directive 2014/1/EU of 18 October 2013](#) amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation (Text with EEA relevance).

[<sup>F33</sup>24. Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers. Expires on 31 December 2019.]

#### Textual Amendments

**F33** Inserted by [Commission Delegated Directive 2014/4/EU of 18 October 2013](#) amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers (Text with EEA relevance).

[<sup>F34</sup>25. Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below – 20 °C under normal operating and storage conditions. Expires on 30 June 2021.]

#### Textual Amendments

**F34** Inserted by [Commission Delegated Directive 2014/6/EU of 18 October 2013](#) amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below – 20 °C under normal operating and storage conditions (Text with EEA relevance).

[<sup>F35</sup>26. Lead in the following applications that are used durably at a temperature below – 20 °C under normal operating and storage conditions:

- (a) solders on printed circuit boards;
- (b) termination coatings of electrical and electronic components and coatings of printed circuit boards;
- (c) solders for connecting wires and cables;
- (d) solders connecting transducers and sensors.

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Lead in solders of electrical connections to temperature measurement sensors in devices which are designed to be used periodically at temperatures below – 150 °C.

These exemptions expire on 30 June 2021.]

**Textual Amendments**

**F35** Substituted by [Commission Delegated Directive \(EU\) 2016/1028 of 19 April 2016](#) amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders of electrical connections to temperature measurement sensors in certain devices (Text with EEA relevance).

- [<sup>F36</sup>27. Lead in
- solders,
  - termination coatings of electrical and electronic components and printed circuit boards,
  - connections of electrical wires, shields and enclosed connectors,

which are used in

- (a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or
- (b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.

Expires on 30 June 2020.]

**Textual Amendments**

**F36** Inserted by [Commission Delegated Directive 2014/7/EU of 18 October 2013](#) amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders, termination coatings of electrical and electronic components and printed circuit boards, connections of electrical wires, shields and enclosed connectors which are used (a) in magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or (b) in magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy (Text with EEA relevance).

- [<sup>F37</sup>28. Lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards. Expires on 31 December 2017.]

**Textual Amendments**

**F37** Inserted by [Commission Delegated Directive 2014/8/EU of 18 October 2013](#) amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards (Text with EEA relevance).

- [<sup>F38</sup>29. Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments. Expires on 30 June 2021.]

**Textual Amendments**

**F38** Inserted by Commission Delegated Directive 2014/10/EU of 18 October 2013 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments (Text with EEA relevance).

- [<sup>F39</sup>30. Hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020.]

**Textual Amendments**

**F39** Inserted by Commission Delegated Directive 2014/11/EU of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020 (Text with EEA relevance).

- [<sup>F40</sup>31. ....]

**Textual Amendments**

**F40** Deleted by Commission Delegated Directive (EU) 2016/585 of 12 February 2016 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead, cadmium, hexavalent chromium, and polybrominated diphenyl ethers (PBDE) in spare parts recovered from and used for the repair or refurbishment of medical devices or electron microscopes (Text with EEA relevance).

- [<sup>F41</sup>31a. Lead, cadmium, hexavalent chromium, and polybrominated diphenyl ethers (PBDE) in spare parts recovered from and used for the repair or refurbishment of medical devices, including *in vitro* diagnostic medical devices, or electron microscopes and their accessories, provided that the reuse takes place in auditable closed-loop business-to-business return systems and that each reuse of parts is notified to the customer.

Expires on:

- (a) 21 July 2021 for the use in medical devices other than *in vitro* diagnostic medical devices;
- (b) 21 July 2023 for the use in *in vitro* diagnostic medical devices;
- (c) 21 July 2024 for the use in electron microscopes and their accessories.]

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#### Textual Amendments

**F41** Inserted by [Commission Delegated Directive \(EU\) 2016/585](#) of 12 February 2016 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead, cadmium, hexavalent chromium, and polybrominated diphenyl ethers (PBDE) in spare parts recovered from and used for the repair or refurbishment of medical devices or electron microscopes (Text with EEA relevance).

[<sup>F42</sup>32. Lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment. Expires on 31 December 2019.]

#### Textual Amendments

**F42** Inserted by [Commission Delegated Directive 2014/12/EU](#) of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment (Text with EEA relevance).

[<sup>F43</sup>33. Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators. Expires on 30 June 2016 for class IIa and on 31 December 2020 for class IIb.]

#### Textual Amendments

**F43** Inserted by [Commission Delegated Directive 2014/13/EU](#) of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators (Text with EEA relevance).

[<sup>F44</sup>34. Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi<sub>2</sub>O<sub>5</sub>:Pb) phosphors. Expires on 22 July 2021.]

#### Textual Amendments

**F44** Inserted by [Commission Delegated Directive 2014/16/EU](#) of 18 October 2013 amending, for the purposes of adapting to technical progress, the Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi<sub>2</sub>O<sub>5</sub>:Pb) phosphors (Text with EEA relevance).

[<sup>F45</sup>35. Mercury in cold cathode fluorescent lamps for back-lighting liquid crystal displays, not exceeding 5 mg per lamp, used in industrial monitoring and control instruments placed on the market before 22 July 2017

Expires on 21 July 2024.]



#### Textual Amendments

**F45** Inserted by [Commission Delegated Directive 2014/75/EU of 13 March 2014](#) amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for mercury in cold cathode fluorescent lamps (CCFLs) for back-lighting liquid crystal displays, not exceeding 5 mg per lamp, used in industrial monitoring and control instruments placed on the market before 22 July 2017 (Text with EEA relevance).

[<sup>F46</sup>36. Lead used in other than C-press compliant pin connector systems for industrial monitoring and control instruments.

Expires on 31 December 2020. May be used after that date in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021.]

#### Textual Amendments

**F46** Inserted by [Commission Delegated Directive 2014/74/EU of 13 March 2014](#) amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead used in other than C-press compliant pin connector systems for industrial monitoring and control instruments (Text with EEA relevance).

[<sup>F47</sup>37. Lead in platinized platinum electrodes used for conductivity measurements where at least one of the following conditions applies:

- (a) wide-range measurements with a conductivity range covering more than 1 order of magnitude (e.g. range between 0,1 mS/m and 5 mS/m) in laboratory applications for unknown concentrations;
- (b) measurements of solutions where an accuracy of +/- 1 % of the sample range and where high corrosion resistance of the electrode are required for any of the following:
  - (i) solutions with an acidity < pH 1;
  - (ii) solutions with an alkalinity > pH 13;
  - (iii) corrosive solutions containing halogen gas;
- (c) measurements of conductivities above 100 mS/m that must be performed with portable instruments.

Expires on 31 December 2018.]

#### Textual Amendments

**F47** Inserted by [Commission Delegated Directive 2014/73/EU of 13 March 2014](#) amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in platinized platinum electrodes used for conductivity measurements (Text with EEA relevance).

[<sup>F48</sup>38. Lead in solder in one interface of large area stacked die elements with more than 500 interconnects per interface which are used in X-ray detectors of computed tomography and X-ray systems.

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Expires on 31 December 2019. May be used after that date in spare parts for CT and X-ray systems placed on the market before 1 January 2020.]

#### Textual Amendments

**F48** Inserted by [Commission Delegated Directive 2014/71/EU of 13 March 2014 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in solder in one interface of large area stacked die elements](#) (Text with EEA relevance).

[<sup>F49</sup>39. Lead in micro-channel plates (MCPs) used in equipment where at least one of the following properties is present:

- (a) a compact size of the detector for electrons or ions, where the space for the detector is limited to a maximum of 3 mm/MCP (detector thickness + space for installation of the MCP), a maximum of 6 mm in total, and an alternative design yielding more space for the detector is scientifically and technically impracticable;
- (b) a two-dimensional spatial resolution for detecting electrons or ions, where at least one of the following applies:
  - (i) a response time shorter than 25 ns;
  - (ii) a sample detection area larger than 149 mm<sup>2</sup>;
  - (iii) a multiplication factor larger than  $1,3 \times 10^3$ .
- (c) a response time shorter than 5 ns for detecting electrons or ions;
- (d) a sample detection area larger than 314 mm<sup>2</sup> for detecting electrons or ions;
- (e) a multiplication factor larger than  $4,0 \times 10^7$ .

The exemption expires on the following dates:

- (a) 21 July 2021 for medical devices and monitoring and control instruments;
- (b) 21 July 2023 for in-vitro diagnostic medical devices;
- (c) 21 July 2024 for industrial monitoring and control instruments.]

#### Textual Amendments

**F49** Inserted by [Commission Delegated Directive 2014/70/EU of 13 March 2014 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in micro-channel plates \(MCPs\)](#) (Text with EEA relevance).

[<sup>F50</sup>40. Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC for industrial monitoring and control instruments.

Expires on 31 December 2020. May be used after that date in spare parts for industrial monitoring and control instruments placed on the market before 1 January 2021.]

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#### Textual Amendments

**F50** Inserted by [Commission Delegated Directive 2014/69/EU](#) of 13 March 2014 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC for industrial monitoring and control instruments (Text with EEA relevance).

[<sup>F51</sup>41. Lead as a thermal stabiliser in polyvinyl chloride (PVC) used as base material in amperometric, potentiometric and conductometric electrochemical sensors which are used in in-vitro diagnostic medical devices for the analysis of blood and other body fluids and body gases.

Expires on 31 December 2018.]

#### Textual Amendments

**F51** Inserted by [Commission Delegated Directive \(EU\) 2015/573](#) of 30 January 2015 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in polyvinyl chloride sensors in in-vitro diagnostic medical devices (Text with EEA relevance).

[<sup>F52</sup>42. Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (> 50 MHz) modes of operation.

Expires on 30 June 2019.]

#### Textual Amendments

**F52** Inserted by [Commission Delegated Directive \(EU\) 2015/574](#) of 30 January 2015 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for mercury in intravascular ultrasound imaging systems (Text with EEA relevance).

[<sup>F53</sup>43. Cadmium anodes in Hersch cells for oxygen sensors used in industrial monitoring and control instruments, where sensitivity below 10 ppm is required.

Expires on 15 July 2023.]

#### Textual Amendments

**F53** Inserted by [Commission Delegated Directive \(EU\) 2016/1029](#) of 19 April 2016 amending, for the purposes of adapting to technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for cadmium anodes in Hersch cells for certain oxygen sensors used in industrial monitoring and control instruments (Text with EEA relevance).

[<sup>F54</sup>44. Cadmium in radiation tolerant video camera tubes designed for cameras with a centre resolution greater than 450 TV lines which are used in environments with ionising radiation exposure exceeding 100 Gy/hour and a total dose in excess of 100kGy.

Applies to category 9. Expires on 31 March 2027.]

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### Textual Amendments

**F54** Inserted by [Commission Delegated Directive \(EU\) 2020/364](#) of 17 December 2019 amending, for the purposes of adapting to scientific and technical progress, Annex IV to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for the use of cadmium in certain radiation tolerant video camera tubes (Text with EEA relevance).

## ANNEX V

### Applications for granting, renewing and revoking exemptions as referred to in Article 5

Applications for exemptions, renewal of exemptions or, *mutatis mutandis*, for revoking an exemption may be submitted by a manufacturer, the authorised representative of a manufacturer, or any economic operator in the supply chain and shall include at least the following:

- (a) the name, address and contact details of the applicant;
- (b) information on the material or component and the specific uses of the substance in the material and component for which an exemption, or its revocation, is requested and its particular characteristics;
- (c) verifiable and referenced justification for an exemption, or its revocation, in line with the conditions established in Article 5;
- (d) an analysis of possible alternative substances, materials or designs on a life-cycle basis, including, when available, information about independent research, peer-review studies and development activities by the applicant and an analysis of the availability of such alternatives;
- (e) information on the possible preparation for reuse or recycling of materials from waste EEE, and on the provisions relating to the appropriate treatment of waste according to Annex II to Directive 2002/96/EC;
- (f) other relevant information;
- (g) the proposed actions to develop, request the development and/or to apply possible alternatives including a timetable for such actions by the applicant;
- (h) where appropriate, an indication of the information which should be regarded as proprietary accompanied by verifiable justification;
- (i) when applying for an exemption, proposal for a precise and clear wording for the exemption;
- (j) a summary of the application.

## ANNEX VI

### EU DECLARATION OF CONFORMITY

1. No ... (unique identification of the EEE):

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2. Name and address of the manufacturer or his authorised representative:
3. This declaration of conformity is issued under the sole responsibility of the manufacturer (or installer):
4. Object of the declaration (identification of EEE allowing traceability. It may include a photograph, where appropriate):
5. The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment<sup>(1)</sup>:
6. Where applicable, references to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared:
7. Additional information:

Signed for and on behalf of: ...

(place and date of issue):

(name, function) (signature):

## ANNEX VII

### PART A

#### REPEALED DIRECTIVE WITH ITS SUCCESSIVE AMENDMENTS

(referred to in Article 26)

Directive 2002/95/EC of the European Parliament and of the Council	(OJ L 37, 13.2.2003, p. 19).
Commission Decision 2005/618/EC	(OJ L 214, 19.8.2005, p. 65).
Commission Decision 2005/717/EC	(OJ L 271, 15.10.2005, p. 48).
Commission Decision 2005/747/EC	(OJ L 280, 25.10.2005, p. 18).
Commission Decision 2006/310/EC	(OJ L 115, 28.4.2006, p. 38).
Commission Decision 2006/690/EC	(OJ L 283, 14.10.2006, p. 47).
Commission Decision 2006/691/EC	(OJ L 283, 14.10.2006, p. 48).
Commission Decision 2006/692/EC	(OJ L 283, 14.10.2006, p. 50).
Directive 2008/35/EC of the European Parliament and of the Council	(OJ L 81, 20.3.2008, p. 67).
Commission Decision 2008/385/EC	(OJ L 136, 24.5.2008, p. 9).
Commission Decision 2009/428/EC	(OJ L 139, 5.6.2009, p. 32).
Commission Decision 2009/443/EC	(OJ L 148, 11.6.2009, p. 27).
Commission Decision 2010/122/EU	(OJ L 49, 26.2.2010, p. 32).

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Commission Decision 2010/571/EU	(OJ L 251, 25.9.2010, p. 28).
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## PART B

## LIST OF TIME-LIMITS FOR TRANSPOSITION INTO NATIONAL LAW

(referred to in Article 26)

<b>Directive</b>	<b>Deadline for transposition</b>
2002/95/EC	12 August 2004
2008/35/EC	—

## ANNEX VIII

## CORRELATION TABLE

<b>Directive 2002/95/EC</b>	<b>This Directive</b>
Article 1	Article 1
Article 2(1)	Article 2(1), 2(2), Annex I
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—	Article 5(8)
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- (1) [OJ L 174, 1.7.2011, p. 88.](#)