

## Revised RoHS Annex

RoHS Exemptions as of 1<sup>st</sup> January 2012.

All exemptions in Annex III of the recast RoHS directive will expire on 21 July 2016 unless an earlier date is given below

No.	Description	Expiry date
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a)	For general lighting purposes < 30 W: maximum 3.5 mg / burner	Expires on 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: maximum 3.5 mg per burner	
1(c)	For general lighting purposes $\geq 50$ W and < 150 W: maximum 5 mg	
1(d)	For general lighting purposes $\geq 150$ W: maximum 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter $\leq 17$ mm: maximum 7 mg per burner	
1(f)	For special purposes: maximum 5 mg	
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): maximum 4 mg per lamp	
2(a) (2)	Tri-band phosphor with normal lifetime and a tube diameter $\geq 9$ mm and $\leq 17$ mm (e.g. T5): maximum 3 mg per lamp	
2(a) (3)	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and $\leq 28$ mm (e.g. T8): maximum 3.5 mg per lamp	
2(a) (4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): maximum 5 mg per lamp	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 ( $\geq 25,000$ h): maximum 5 mg per lamp	
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b) (1)	Linear halophosphate lamps with tube diameter > 28 mm (e.g. T10 and T12): maximum 10 mg per lamp	Expires on 13 April 2012
2(b) (2)	Non-linear halophosphate lamps (all diameters): maximum 15 mg per lamp	Expires on 13 April 2016
2(b) (3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9): maximum 15mg per lamp	

No.	Description	Expiry date
2(b) (4)	Lamps for other general lighting and special purposes (e.g. induction lamps): maximum 15 mg per lamp	
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): maximum 3.5 mg per lamp	
3(b)	Medium length ( $> 500$ mm and $\leq 1,500$ mm): maximum 5 mg per lamp	
3(c)	Long length ( $> 1,500$ mm): maximum 13 mg per lamp	
4(a)	Mercury in other low pressure discharge lamps (per lamp): maximum 15 mg per lamp	
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: maximum 30 mg may be used per burner	
4(b)-II	$155$ W $< P \leq 405$ W: maximum 40 mg may be used per burner	
4(b)-III	$P > 405$ W: : maximum 40 mg may be used per burner	
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I	$P \leq 155$ W: : maximum 25 mg may be used per burner	
4(c)-II	$155$ W $< P \leq 405$ W: : maximum 30 mg may be used per burner	
4(c)-III	$P > 405$ W: : maximum 40 mg may be used per burner	
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	
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0.2% by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight	

No.	Description	Expiry date
6(b)	Lead as an alloying element in aluminium containing up to 0.4% lead by weight	
6(c)	Copper alloy containing up to 4% lead by weight	
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)	
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	
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	
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
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
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	
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
8(b)	Cadmium and its compounds in electrical contacts	
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	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors 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
13(a)	Lead in white glasses used for optical applications	
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	

No.	Description	Expiry date
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	These may <b>only</b> be used in spare parts for EEE placed on the market before 1 January 2011
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
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(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)	
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm and less	May <b>only</b> 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	
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC	
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)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	

No.	Description	Expiry date
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39	Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm <sup>2</sup> of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40	Cadmium in photo-resistors for analogue opto-couplers applied in professional audio equipment	31 December 2013

The original RoHS directive will be replaced by a new Directive (2011/65/EC) on 2 January 2013 and the above exemptions will be in Annex III of this directive.