



13 February 2003, EU published Directive 2002/95/EC of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 1 July 2011, THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION published DIRECTIVE 2011/65/EU (RoHS 2.0) on Official Journal of the European Union, replacing Directive 2002/95/EC. There are totally 39 entries in RoHS 2.0 Annex III and 20 entries in Annex IV. 9 January 2014, EU Commission published multiple amendments to DIRECTIVE 2011/65/EU (RoHS 2.0), newly added 14 entries to Annex IV. And from 20 May 2014 news, 8 amendments are officially added to Directive 2011/65/EU (RoHS 2.0). 16 April 2016, EU amended the 31st entry of Annex IV of RoHS 2.0, according to (EU) 2016/585, in Annex IV to Directive 2011/65/EU, point 31 is deleted and point 31a is added. On 25 June 2016, the Official Journal of the European Union has published Commission Delegated Directives (EU) 2016/1028 to amend point 26 as regards an exemption on lead and (EU) 2016/1029 to add point 43 as regards an exemption on cadmium. Up to July 2016, there are totally 41 entries in Annex III and 43 in Annex IV. Below are the newest exemption lists of RoHS 2.0, words marked blue are those exemptions that were expired.

ANNEX III

Exemption		Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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

Contact us:

Shenzhen Hongcai testing technology co., LTD. (HCT)

Web: <http://www.hct-test.com/>

Hotline: 400-0066-989 T: (86) 755 8416666

Email: service@hct-test.com

Add: 3rd floor, Block D, Peng Litai Industrial Estate, Long Ping West Road, Longgang District, Shenzhen City.

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1 (b)	For general lighting purposes ≥ 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 ≥ 50 W and < 150 W: 5 mg	The exemption apply until 21 July 2016 for a maximum validity period
1 (d)	For general lighting purposes ≥ 150 W: 15 mg	The exemption apply until 21 July 2016 for a maximum validity period
1 (e)	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1 (f)	For special purposes: 5 mg	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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):	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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

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		may be used per lamp after 31 December 2011
2 (b)	Mercury in other fluorescent lamps not exceeding (per lamp):	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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
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):	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
3 (a)	Short length (≤ 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 $R_a > 60$:	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.

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4 (b) -I	$P \leq 155 \text{ W}$	No limitation of use until 31 December 2011; 30 mg may 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):	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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)	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
4 (f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	Expires on 31 December 2018

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	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	
5 (a)	Lead in glass of cathode ray tubes	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
5 (b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
6 (a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
6 (b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
6 (c)	Copper alloy containing up to 4 % lead by weight	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
7 (a)	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
7 (b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
7 (c) -II	Lead in dielectric ceramic in capacitors for a rated voltage of 125	The exemption apply until 21 July

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	V AC or 250 V DC or higher	2016 for a maximum validity period, and may be renewed only on request after assessment.
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
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	T The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
9 (b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on

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13 (b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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 processes containing phosphors such as SMS ((Sr,Ba) 2 MgSi 2 O 7 :Pb)	Expired on 1 January 2011
18 (b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi 2 O 5 :Pb)	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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
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
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	The exemption apply until 21 July 2016 for a maximum validity period,

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		and may be renewed only on request after assessment.
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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 of 125 dB SPL and above) loudspeakers	Expired on 24 September 2010
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
33	Lead in solders for the soldering of thin copper wires of 100 μm diameter and less in power transformers	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on

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		request after assessment.
34	Lead in cermet-based trimmer potentiometer elements	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
39	Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm ² of light-emitting area) for use in solid state illumination or display systems	Expired on 1 July 2014
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013
41	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	Expires on 31 December 2018

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ANNEX IV

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

No	SCOPE	DATE OF EXPIRED
1.	Lead, cadmium and mercury in detectors for ionising radiation.	The exemption apply until 21 July 2018 for a maximum validity period, and may be renewed only on request after assessment.
2.	Lead bearings in X-ray tubes	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
3.	Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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.	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
5.	Lead in shielding for ionising radiation	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
6.	Lead in X-ray test objects	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
7.	Lead stearate X-ray diffraction crystals	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
8.	Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
Sensors, detectors and electrodes		
1a.	Lead and cadmium in ion selective electrodes including glass of pH electrodes	The exemption apply until 21 July 2016 for a maximum validity period, and may be

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		renewed only on request after assessment.
1b.	Lead anodes in electrochemical oxygen sensors	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
1c.	Lead, cadmium and mercury in infra-red light detectors	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
1d.	Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide. Others	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
Others		
9.	Cadmium in helium-cadmium lasers	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
10.	Lead and cadmium in atomic absorption spectroscopy lamps	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
11.	Lead in alloys as a superconductor and thermal conductor in MRI	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
12.	Lead and cadmium in metallic bonds to superconducting materials in MRI and SQUID detectors	Expires on 30 June 2021
13.	Lead in counterweights	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
14.	Lead in single crystal piezoelectric materials for ultrasonic transducers	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
15.	Lead in solders for bonding to ultrasonic transducers	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.

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17.	Lead in solders in portable emergency defibrillators	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
18.	Lead in solders of high performance infrared imaging modules to detect in the range 8-14 μm	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
19.	Lead in Liquid crystal on silicon (LCoS) displays	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
20.	Cadmium in X-ray measurement filters	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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	The exemption apply until 21 July 2016 for a maximum validity period, and may be renewed only on request after assessment.
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
23.	Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation.	Expires on 30 June 2021
24.	Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers.	Expires on 31 December 2019
25.	Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below $-20\text{ }^{\circ}\text{C}$ under normal operating and storage conditions.	Expires on 30 June 2021
26.	<p>'26. Lead in the following applications that are used durably at a temperature below $-20\text{ }^{\circ}\text{C}$ under normal operating and storage conditions:</p> <p>(a) solders on printed circuit boards;</p> <p>(b) termination coatings of electrical and electronic components and coatings of printed circuit boards;</p> <p>(c) solders for connecting wires and cables;</p> <p>(d) solders connecting transducers and sensors.</p> <p>Lead in solders of electrical connections to temperature</p>	Expire on 30 June 2021

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HCT-2016-07-01

	measurement sensors in devices which are designed to be used periodically at temperatures below – 150 °C.	
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
28.	Lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards.	Expires on 31 December 2017
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
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	
31.	Lead, cadmium and hexavalent chromium in reused spare parts, recovered from medical devices placed on the market before 22 July 2014 and used in category 8 equipment placed on the market before 22 July 2021, provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer.	Expires on 21 July 2021
31a.	Lead, cadmium, hexavalent chromium, and	Expires on: (a) 21 July 2021 for the use in

Contact us:

Shenzhen Hongcai testing technology co., LTD. (HCT)

Web: <http://www.hct-test.com/>

Hotline: 400-0066-989 T: (86) 755 8416666

Email: service@hct-test.com

Add: 3rd floor, Block D, Peng Litai Industrial Estate, Long

Ping West Road, Longgang District, Shenzhen City.

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EEE products

HCT-2016-07-01

	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.	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
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
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
34.	Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi 2 O 5 :Pb) phosphors.	Expires on 22 July 2021
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
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
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	Expires on 31 December 2018

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	containing halogen gas; (c) measurements of conductivities above 100 mS/m that must be performed with portable instruments.	
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.	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
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 ² ; (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 ² 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
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
43.	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.

—END—

04 July 2016 updated

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