



China

Report No. 48.400.17.7898.06-00/01

Dated 2017-11-22

Technical Report

Applicant:

Mr. Tan

Attn:

Same as the above.

Manufacture:

The tested object(s) was(were) submitted and described by client

Test subject:

as: Name: Hair chipper

Model: SH-4604



Additional May Covered Models, please refer to Appendix I.

Test specification: 2011/65/EU (ROHS) Directive

Test with reference to EN 62321-1:2013, EN 62321-2:2014, EN 62321-3-1:2014, EN 62321-4:2014, EN 62321-5:2014, EN 62321-6:2015, EN62321-7-1:2015 and EN 62321:2009.

Test result:

Refer to the data listed in following pages

Conclusion:

With regard to the data of tested components, the requirements of Directive 2011/65/EU (ROHS) are **complied**.

Remarks:

1. The result relates only to the items tested.
2. The selected test items were as the request by applicant.
3. Samples were tested as received.

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1. Order

1.1 Date of Purchase Order
2017-10-17

1.2 Customer's Reference
Nil



1.3 Receipt Date of Test Sample
2017-10-17 ~ 2017-11-21

1.4 Date of Testing
2017-10-20 ~ 2017-11-22






1.5 Document submitted
Nil

1.6 Location of Testing
TÜV SÜD SHA External Chemical Lab

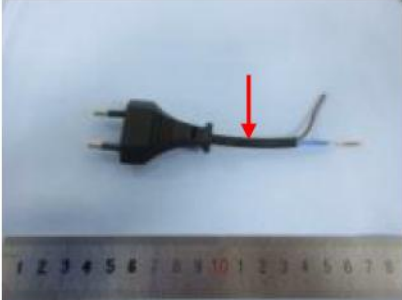




2. Description of the tested specimen

Sample No.	Description	Photograph/Location
01	Black plastic hair clipper	
02	Black plastic part	






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Sample No.	Description	Photograph/Location
03	Silvery plastic shell	
04	Black rubber wire clip	
05	Black rubber plug	
06	Black PBT frame	
07	Silvery metal pin Copper alloy material	






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Sample No.	Description	Photograph/Location
08	Black insulation jacket	
09	Brown wire jacket	
10	Blue wire jacket	
11	Coppery metal wire	
12	Silvery metal shaft	


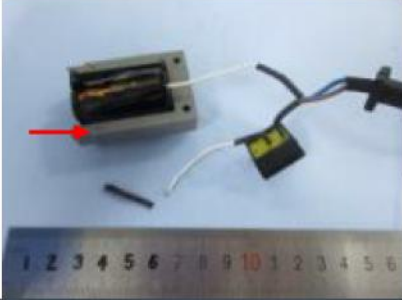
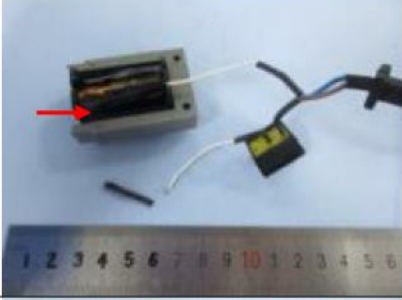
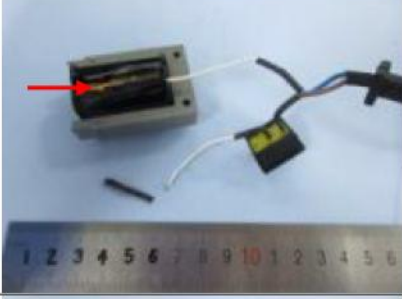
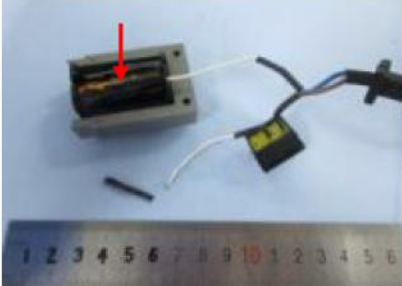
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Sample No.	Description	Photograph/Location
13	Black plastic shell	
14	Grey sponge	
15	Black plating metal spring	
16	Silvery metal screw	
17	Black plating metal spring	

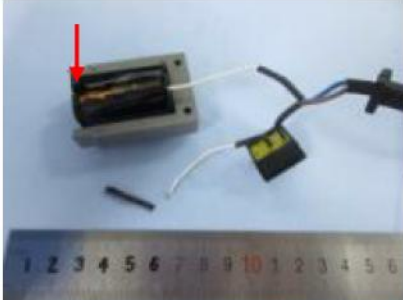
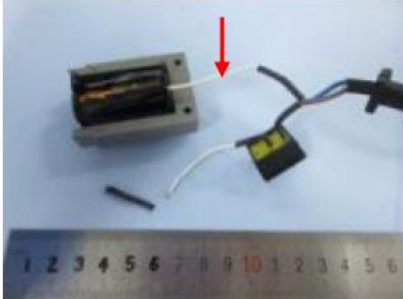
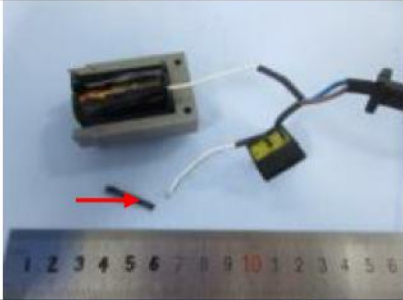


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Sample No.	Description	Photograph/Location
18	Silvery metal screw	
19	Black plastic part	
20	Silvery metal part	
21	Silvery metal hair clipper	
22	Silvery metal hair clipper	






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Sample No.	Description	Photograph/Location
23	Silvery metal clip	
24	Silvery silicon steel sheet	
25	Black plastic sheath	
26	Coppery metal coil	
27	Brown paper	



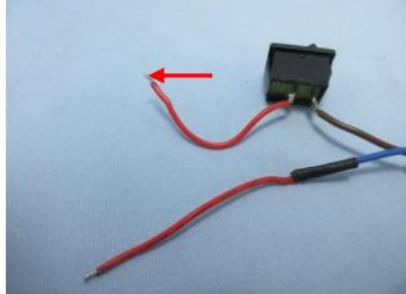
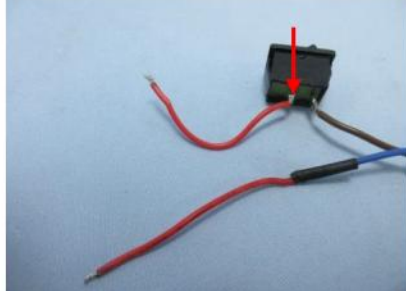
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Sample No.	Description	Photograph/Location
28	Black plastic bobbin	
29	White wire jacket	
30	Black heat shrinkable tube	
31	Black plastic button	
32	Black plastic shell	

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Sample No.	Description	Photograph/Location
33	Yellow plastic board	
34	Silvery metal contact sheet	
35	Golden metal part	
36	Black plastic part Copper alloy component	
37	Black plastic shell	

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Sample No.	Description	Photograph/Location
38	Black magnet	
39	Silvery silicon steel sheet	
40	Silvery metal solder <i>Sample received by client's 2nd submit</i>	
41	Silvery metal solder <i>Sample received by client's 2nd submit</i>	

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3. Test Results

3.1 ED-XRF Spectrometer test for total Cadmium, Chromium, Mercury, Lead and Bromine according to EN 62321-3-1:2014

Criteria of XRF test results

Pass:

Because of the nature of the testing procedure (caused by the uncertainty of the used, XRF method), a definite pass is given only if the XRF test score is less than 60% of the respective ROHS limit.

Inconclusive:

If the XRF test score is between 60% and 150% of the respective ROHS limit, further chemical test on the sample is required.

Fail:

A definite FAIL is given if the XRF test score is above 150% of the respective ROHS limit

***Explanation for ROHS limit**

Regarding Chromium and Bromine, the XRF test score shows the total Chromium and the total Bromine, but the ROHS limit of 1000 mg/kg, according to the directive 2011/65/EU, is only for Hexavalent Chromium and Brominated Flame Retardants. Therefore, if the XRF test result for the total Chromium and the total Bromine is more than 600 mg/kg and 300 mg/kg respectively, further analytical tests are necessary to find out the exact amount of Hexavalent Chromium and Brominated Flame Retardants

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Compounds	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Total Chromium [mg/kg]	Total Bromine [mg/kg]	OVERALL RESULT
ROHS Limit	100	1000	1000	1000	1000	
"Pass"	< 60	< 600	< 600	< 600	< 300	
"Inconclusive"	60 - 150	600 - 1500	600 - 1500	> 600	> 300	
"Fail "	> 150	> 1500	> 1500	--	--	
01	<30	<30	<30	<30	<30	Pass
02	<30	<30	<30	<30	520	Inconclusive
03	<30	<30	<30	<30	547	Inconclusive
04	<30	<30	<30	<30	<30	Pass
05	<30	<30	<30	<30	<30	Pass
06	<30	<30	<30	<30	13514	Inconclusive
07	53	5816*	<30	226	--	Pass
08	<30	<30	<30	<30	<30	Pass
09	<30	<30	<30	<30	<30	Pass
10	<30	<30	<30	<30	<30	Pass
11	<30	<30	<30	<30	--	Pass
12	<30	<30	<30	<30	--	Pass
13	<30	<30	<30	<30	547	Inconclusive
14	<30	<30	<30	<30	<30	Pass
15	38	276	<30	1078	--	Inconclusive
16	<30	223	<30	540	--	Pass
17	<30	282	<30	844	--	Inconclusive
18	<30	166	<30	548	--	Pass
19	<30	<30	<30	<30	<30	Pass
20	<30	100	<30	182876	--	Inconclusive
21	<30	149	<30	135326	--	Inconclusive
22	<30	48	<30	121816	--	Inconclusive

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Compounds	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Total Chromium [mg/kg]	Total Bromine [mg/kg]	OVERALL RESULT
ROHS Limit	100	1000	1000	1000	1000	
"Pass"	< 60	< 600	< 600	< 600	< 300	
"Inconclusive"	60 - 150	600 - 1500	600 - 1500	> 600	> 300	
"Fail "	> 150	> 1500	> 1500	--	--	
23	<30	207	<30	547	--	Pass
24	<30	181	<30	4546	--	Inconclusive
25	<30	<30	<30	<30	<30	Pass
26	<30	<30	<30	178	--	Pass
27	<30	<30	<30	<30	<30	Pass
28	<30	35	<30	96	<30	Pass
29	<30	<30	<30	<30	<30	Pass
30	<30	<30	<30	<30	<30	Pass
31	<30	<30	<30	<30	837	Inconclusive
32	<30	<30	<30	<30	755	Inconclusive
33	<30	<30	<30	<30	21335	Inconclusive
34	<30	72	<30	160	--	Pass
35	58	24620*	<30	137	--	Pass
36	<30	<30	<30	<30	<30	Pass
37	<30	32	<30	<30	<30	Pass
38	<30	<30	<30	324	--	Pass
39	<30	340	<30	5630	--	Inconclusive
40	<30	571	<30	362	--	Pass
41	<30	534	<30	287	--	Pass

Remark:

1. "<" means "less than".
2. "mg/kg" denotes "milligram per kilogram".
3. With regard to the stoichiometry of Br in PBBs and PBDEs, the lower limit for Br is set at 300 mg/kg.
4. "--" means the substance for this sample are not tested.
5. "*" Refer to ROHS Official Exemption Item, 6(c) Copper alloy containing up to 4 % lead by weight.

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3.2 Wet chemical test

Main instruments used for wet chemical test

Testing Target	Instrument	Method
Lead & Cadmium	ICP-OES	EN 62321-4:2014, EN 62321-5:2014, EN 62321-6:2015, EN 62321-7-1:2015, EN 62321:2009
Mercury	ICP-OES	
Hexavalent Chromium	UV-Vis	
PBBs & PBDEs	GC/MS	

Criteria of chemical test results

Pass:

A definite Pass is given If the chemical test result meets the requirements of ROHS.

Fail:

A definite Fail is given If the chemical test result exceeds the full respective ROHS limit.

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Metallic material wet chemical test result

Test Sample	Cadmium [mg/kg]	Lead [mg/kg]	Mercury [mg/kg]	Chromium (VI) [$\mu\text{g}/\text{cm}^2$]	PBBs (Sum) [mg/kg]	PBDEs (Sum) [mg/kg]	OVERALL RESULT
Limit	100	1000	1000	§	1000	1000	
15	--	--	--	Negative	--	--	Pass
17	--	--	--	Negative	--	--	Pass
20	--	--	--	Negative	--	--	Pass
21	--	--	--	Negative	--	--	Pass
22	--	--	--	Negative	--	--	Pass
24	--	--	--	Negative	--	--	Pass
39	--	--	--	Negative	--	--	Pass

Remark:

1. "--" means the substance for this sample are not tested.
2. "mg/kg" denotes "milligram per kilogram"
3. "§" The Chromium (VI) content in surface layer have been confirmed with reference to EN 62321-7-1:2015

Result	Chromium (VI) concentration	Qualitative result
Negative	$<0.1\mu\text{g}/\text{cm}^2$	The sample is negative for Cr(VI). The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.
Inconclusive	$\geq 0.1\mu\text{g}/\text{cm}^2$ and $\leq 0.13\mu\text{g}/\text{cm}^2$	The result is considered to be inconclusive. Unavoidable coating variations may influence the determination. Recommendation: if additional samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trials for the final determination.
Positive	$>0.13\mu\text{g}/\text{cm}^2$	The sample is positive for Cr(VI). Concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

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Non-metallic material wet chemical test result

Test Sample	Cadmium [mg/kg]	Lead [mg/kg]	Mercury [mg/kg]	Chromium (VI) [mg/kg]	PBBs (Sum) [mg/kg]	PBDEs (Sum) [mg/kg]	OVERALL RESULT
Limit	100	1000	1000	1000	1000	1000	
02	--	--	--	--	<50	<50	Pass
03	--	--	--	--	<50	<50	Pass
06	--	--	--	--	<50	<50	Pass
13	--	--	--	--	<50	<50	Pass
31	--	--	--	--	<50	<50	Pass
32	--	--	--	--	<50	<50	Pass
33	--	--	--	--	<50	<50	Pass

Remark:

1. Detected limit of Cd :2mg/kg; Pb, Hg, Cr, PBBs and PBDEs :5mg/kg;
2. "mg/kg" denotes "milligram per kilogram".
3. "--" means the substance for this sample are not tested.

TÜV SÜD Certification and Testing (China) Co., Ltd.

Prepared by:

Mr. Yongfeng DU

Checked by:

Mr. Feng ZHANG

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Appendix I: Additional May Covered Models and Photo Reference

SH-4608, SH-4629, SH-4607, SH-4609, SH-4613, SH-4617, SH-4601



SH-4601



SH-4604



SH-4607



SH-4608



SH-4609



SH-4613



SH-4617



SH-4623



SH-4629



SH-4639



SH-4640



SH-4641



SH-4642



SH-4643

Remarks:

The above listed may covered models and photos were only based on client's guarantee letter (self-declaration). TÜV SÜD takes no responsibility for any mistakes and the problems of product consistency caused by inaccurate and/or invalid information submitted by the client.

APPENDIX II: Official Exemption Items

Below items are quoted based on Directives of 2011/65/EU and its valid Amending Directives.

Exemption		Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner)	
1(a)	For general lighting purpose < 30 W:5mg	Expires on 31 December 2011; 3,5mg maybe used per burner after 31 December 2011 until 31 December 2012; 2.5mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes ≥ 30 W and < 50 W:5mg	Expires on 31 December 2011; 3,5mg maybe used per burner after 31 December 2011 until 31 December 2012; 2.5mg shall be used per burner after 31 December 2012
1(c)	For general lighting purposes ≥ 50 W and < 150 W:5mg	

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Exemption		Scope and dates of applicability
1(d)	For general lighting purpose ≥ 30 W and ≥ 150 W:15mg	
1(e)	For general lighting purpose 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:5mg	
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): 5mg	Expires on 31 December 2011; 4mg 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): 5mg	Expires on 31 December 2011; 3mg 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): 5mg	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): 5mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(5)	Tri-band phosphor with long lifetime(≥ 25 000h):8mg	Expires on 13 December 2011;5mg 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): 10mg	Expires on 13 April 2012
2(b)(2)	Non-linear halophosphate lamps (all diameters):15mg	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)	
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 ≤ 1 500mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length (> 1 500mm)	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 $R_a > 60$;	

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China

Report No. 48.400.17.7898.06-00/01

Dated 2017-11-22

Exemption		Scope and dates of applicability
4(b)-I	P ≤ 155 W	No limitation of use until 31 December 2011; 30mg may be used per burner after 31 December 2011
4(b)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011
4(b)-III	P > 405 W	No limitation of use until 31 December 2011; 40mg 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 ≤ 155 W	No limitation of use until 31 December 2011; 30mg may be used per burner after 31 December 2011
4(c)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011
4(c)-III	P > 405 W	No limitation of use until 31 December 2011; 40mg 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	
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 1 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	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	
6(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	

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Exemption		Scope and dates of applicability
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	
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	Expires 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	
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 processes containing phosphors such	Expires on 1 January 2011

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Exemption		Scope and dates of applicability
	as SMS ((Sr,Ba) ₂ MgSi ₂ O ₇ :Pb)	
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)	
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	
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	
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 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)	
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 um diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	
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	
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39	Cadmium in colour converting II-VI LEDs (< 10 ug Cd per mm ² of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013

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Exemption		Scope and dates of applicability
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 1 December 2018

--END OF REPORT--

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