

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Technical Report

Client: Ningbo Boyang Lighting Co., Ltd.
Xinze Village, Guanhaiwei Town

Contact person: Sun Weiwei

Test object: The submitted samples were received and described by client as:
Product name: Lamp series
Product Model: YJD-A-17L, DY-YJD-A-1, DY-CDD203-80W, XYD557, XYD583, XYD417, XYD561, MZ2-01, H05VV-F3G1.5, H05VV-F 3G1.0, H05RN-F 3G1.0, H05RR-F3G1.5, H07RN-F3G1.5



Additional model: Refer to the APPENDIX I.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368



China

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22

Tested sample description: Refer to next page(s).

Test specification: **2011/65/EU (RoHS) Directive and 2015/863/EU (RoHS amendment) 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, EN 62321-7-1:2015, EN 62321-7-2:2017 and EN 62321-8:2017.

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) and 2015/863/EU are **complied**.

Remarks:

1. The tested samples were identified and appointed by client.
2. The result relates only to the items tested.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368



China

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22

1. Order

1.1 Date of Purchase Order,
2020-03-26

1.2 Customer's Reference
Nil

1.3 Receipt Date of Test Sample
2020-03-26

2020-04-02

2020-04-13

2020-04-20

1.4 Date of Testing
2020-03-26– 2020-04-21

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

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn





Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



2. Description of the tested specimen

Sample No.	Result	Description (Material, colour)	Photograph/Location
01	Pass	Shell, white, plastic	
02	Pass	Cover, white, plastic	
03	Pass	Button, white, plastic	
04	Pass	Frame, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
05	Pass	Pin, silvery, metal	
06	Pass	Solder, silvery, metal	
07	Pass	Wire jacket, blue, plastic	
08	Pass	Wire, golden, copper alloy	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

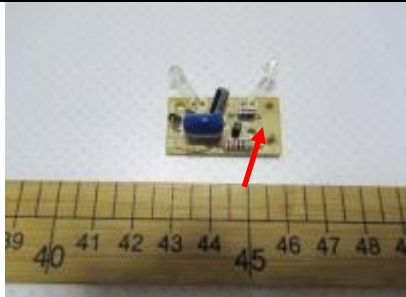
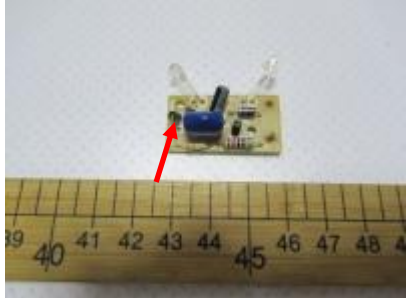
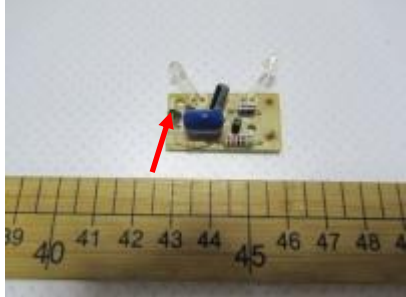
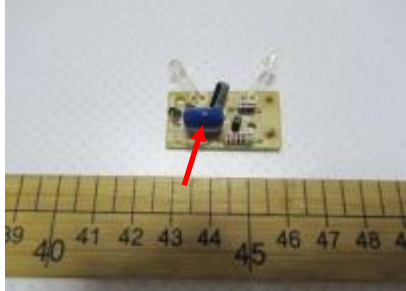
Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
09	Pass	PCB, plastic	
10	Pass	Diode, black, plastic	
11	Pass	Pin, silvery, metal	
12	Pass	Capacitor, blue, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

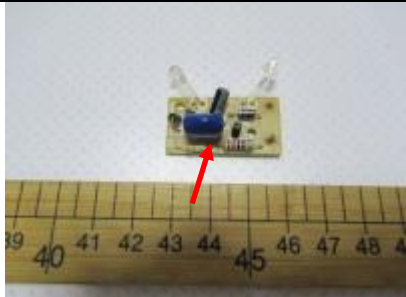
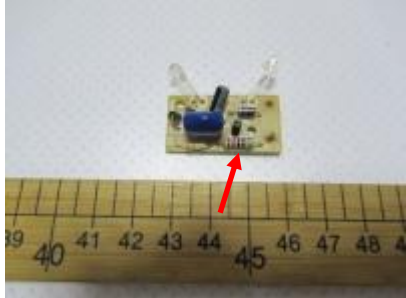
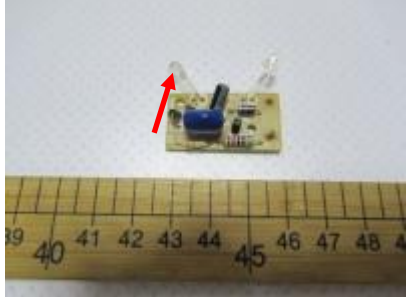
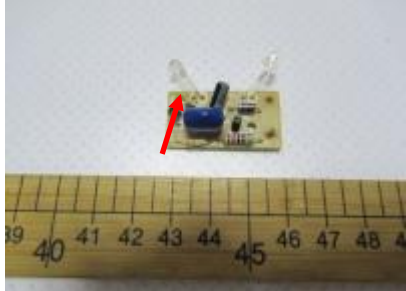
Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
13	Pass	Capacitor, yellow, plastic	
14	Pass	Capacitor, grey, plastic	
15	Pass	Lamp, transparent, plastic	
16	Pass	Pin, slvery, metal	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
17	Pass	Shell, black, plastic	
18	Pass	Solder, silvery, metal	
19	Pass	Frame, black, metal	
20	Pass	Button, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
21	Pass	Wafer, silvery, metal	
22	Pass	Spring, silvery, metal	
23	Pass	Belt, silvery, metal	
24	Pass	Board, brown, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
25	Pass	Pin, silvery, metal	
26	Pass	Component, transparent, plastic	
27	Pass	Enclosure, transparent, plastic	
28	Pass	Jacket, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
29	Pass	Frame, white, plastic	
30	Pass	Wafer, silvery, metal	
31	Pass	PCB, white, plastic	
32	Pass	LED, transparent	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
33	Pass	Solder, silvery, metal	
34	Pass	Diode, black, plastic	
35	Pass	Shell, silvery, metal	
36	Pass	Tube, white, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
37	Pass	Capacitor, blue, plastic	
38	Pass	Resistor, light blue, plastic	
39	Pass	Resistor, yellow, plastic	
40	Pass	Resistor, brown, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City





Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
41	Pass	Diode, black, plastic	
42	Pass	Tube, white, plastic	
43	Pass	Wire, silvery, metal	
44	Pass	Diode, orange, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

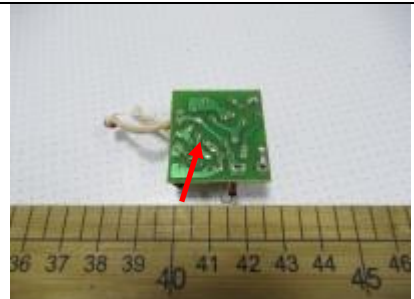



Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
45	Pass	PCB, green, plastic	
46	Pass	Solder, silvery ,metal	
47	Pass	Shell, white, plastic	
48	Pass	Button, white, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
49	Pass	Glass, transparent, plastic	
50	Pass	Fuse, black, metal	
51	Pass	Shell, silvery, metal	
52	Pass	Resin, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

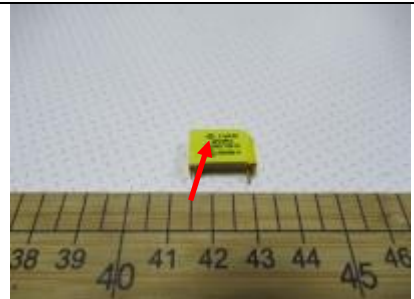

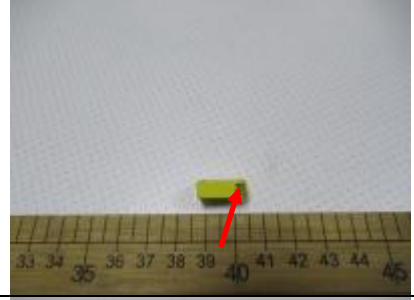

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
53	Pass	Shell, yellow, plastic	
54	Pass	Resin, yellow, plastic	
55	Pass	Film, silvery, plastic	
56	Pass	Screw, silvery, metal	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

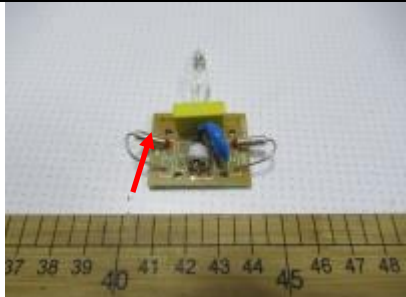
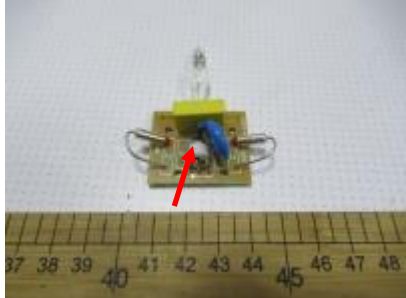
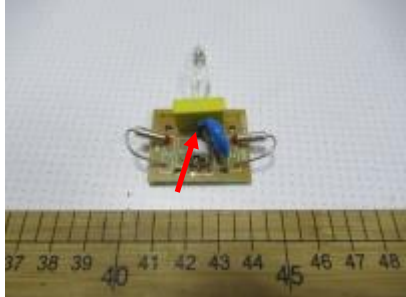
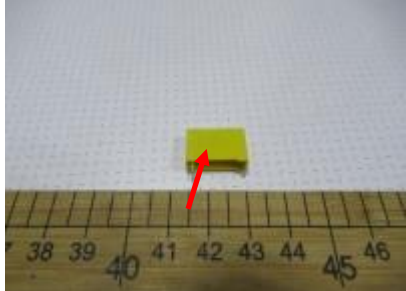
Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
57	Pass	Fuse, silvery, metal	
58	Pass	Component, silvery, metal	
59	Pass	Resistor, blue, plastic	
60	Pass	Shell, yellow, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

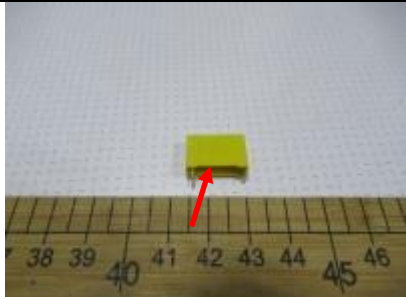

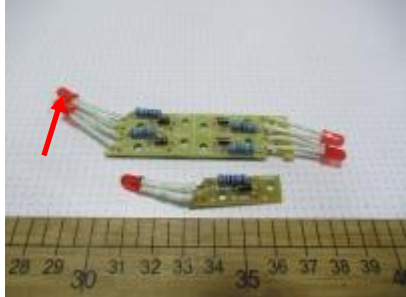

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
61	Pass	Resin, yellow, plastic	
62	Pass	Film, silvery, plastic	
63	Pass	Lamp, red, plastic	
64	Pass	Tube, white and green, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

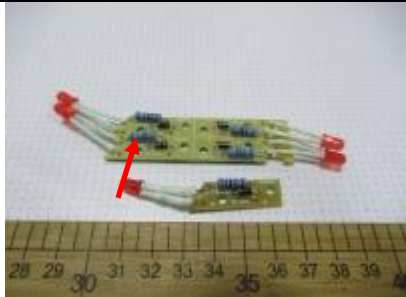
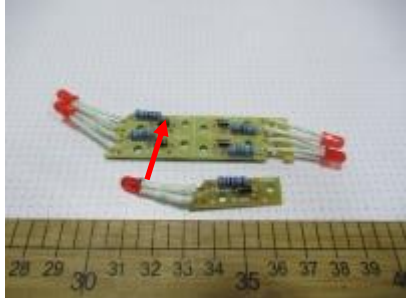


Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
65	Pass	Capacitor, blue, plastic	
66	Pass	Diode, black, plastic	
67	Pass	PCB, green, plastic	
68	Pass	Solder, silvery, metal	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
69	Pass	Component, black, plastic	
70	Pass	Seal ring, black, rubber	
71	Pass	Shell, black, plastic	
72	Pass	Component, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
73	Pass	Nut, golden, copper alloy	
74	Pass	Screw, silvery, metal	
75	Pass	Component, black, plastic	
76	Pass	Seal ring, black, rubber	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
77	Pass	Frame, silvery, metal	
78	Pass	Wafer, golden, copper alloy	
79	Pass	Screw, black, plastic	
80	Pass	Component, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
81	Pass	Cushion, black, plastic	
82	Pass	Button, black, plastic	
83	Pass	Shell, silvery, metal	
84	Pass	Frame, silvery, metal	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
85	Pass	Shell, orange, plastic	
86	Pass	Base, black, plastic	
87	Pass	Wafer, golden, copper alloy	
88	Pass	Wafer, silvery, metal	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City





Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
89	Pass	Shell, black, plastic	
90	Pass	Button, red, plastic	
91	Pass	Frame, white, plastic	
92	Pass	Button, white, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
93	Pass	Tube, white, plastic	
94	Pass	Screw, black, plastic	
95	Pass	Seal ring, black, rubber	
96	Pass	Component, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
97	Pass	Enclosure, white, plastic	
98	Pass	Cover, black, plastic	
99	Pass	LED, yellow, plastic	
100	Pass	PCB, white	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

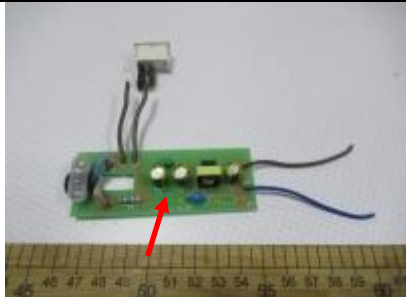



Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
101	Pass	PCB, green	
102	Pass	Jacket, yellow, plastic	
103	Pass	Shell, silvery, metal	
104	Pass	Film, brown, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City


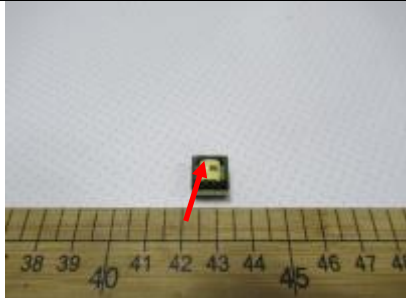
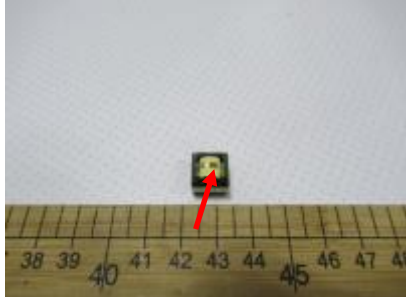
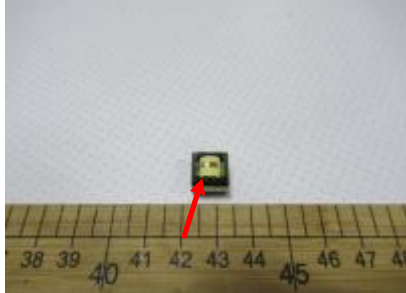
Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
105	Pass	Cushion, black, plastic	
106	Pass	Wire, golden, copper alloy	
107	Pass	Tape, yellow, plastic	
108	Pass	Frame, black, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

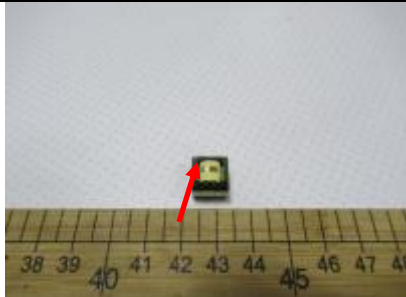
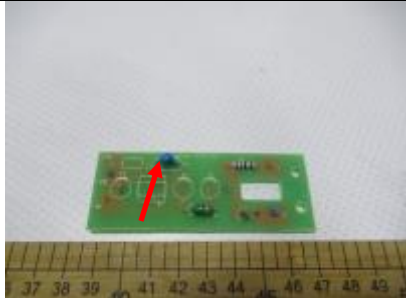
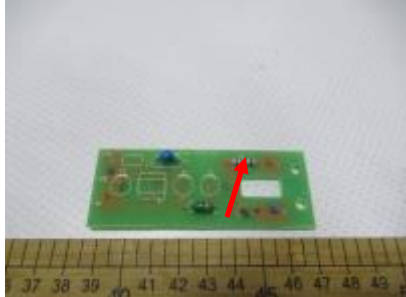
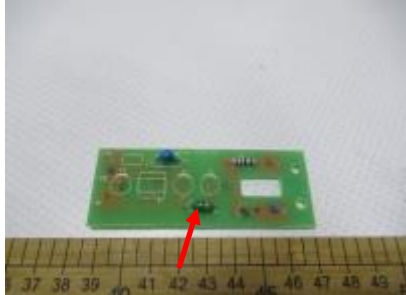
Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
109	Pass	Magnet, black, metal	
110	Pass	Resistor, blue, plastic	
111	Pass	Resistor, grey, plastic	
112	Pass	Inductance, green, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China





Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
113	Pass	Diode, black, plastic	
114	Pass	IC, black, plastic	
115	Pass	Resistor, black	
116	Pass	Switch, white, plastic	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



Sample No.	Result	Description (Material, colour)	Photograph/Location
117	Pass	Heat-shrinkable tubing, black, plastic	
118	Pass	Belt, silvery, metal	
119	Pass	Wafer, silvery, metal	
120	Pass	Spring, black, metal	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn



Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03
Dated 2020-04-22



China

Sample No.	Result	Description (Material, colour)	Photograph/Location
121	Pass	Tube, black, plastic	 A photograph of a small, black, cylindrical plastic tube. Below the tube is a wooden ruler with markings from 33 to 42. The tube is positioned between the 35 and 36 marks.
122	Pass	Button, white, plastic	 A photograph of a small, white, rectangular plastic button. Below the button is a wooden ruler with markings from 31 to 42. The button is positioned between the 36 and 37 marks. A red arrow points to the button.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



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

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
01	<30	<30	<30	<30	<30	Pass
02	<30	<30	<30	<30	<30	Pass
03	<30	<30	<30	<30	115663	Inconclusive
04	<30	<30	<30	<30	68138	Inconclusive
05	<30	7924**	<30	<30	--	Inconclusive
06	<30	<30	<30	<30	--	Pass
07	<30	<30	<30	<30	<30	Pass
08	<30	<30	<30	<30	--	Pass
09	<30	<30	<30	<30	41357	Inconclusive
10	<30	<30	<30	36	6550	Inconclusive
11	<30	<30	<30	<30	--	Pass
12	<30	<30	<30	<30	<30	Pass
13	<30	<30	<30	<30	<30	Pass
14	<30	<30	<30	<30	<30	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
15	<30	<30	<30	<30	3039	Inconclusive
16	<30	<30	<30	<30	--	Pass
17	<30	<30	<30	47	<30	Pass
18	<30	<30	<30	<30	--	Pass
19	<30	47	<30	53	--	Pass
20	<30	<30	<30	<30	121024	Inconclusive
21	<30	57	<30	<30	--	Pass
22	<30	169	<30	52	--	Pass
23	<30	<30	<30	95	--	Pass
24	<30	<30	<30	<30	<30	Pass
25	<30	<30	<30	<30	--	Pass
26	<30	<30	<30	<30	<30	Pass
27	<30	<30	<30	<30	<30	Pass
28	<30	45	<30	<30	17593	Inconclusive
29	<30	<30	<30	<30	<30	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
30	<30	<30	<30	<30	--	Pass
31	<30	<30	<30	<30	48615	Inconclusive
32	<30	<30	<30	<30	2209	Inconclusive
33	<30	<30	<30	<30	--	Pass
34	<30	187	<30	86	5078	Inconclusive
35	<30	<30	<30	<30	--	Pass
36	<30	35	<30	<30	<30	Pass
37	<30	<30	<30	<30	<30	Pass
38	<30	<30	<30	<30	206	Pass
39	<30	38	<30	<30	971	Inconclusive
40	<30	<30	<30	<30	291	Pass
41	<30	<30	<30	47	6763	Inconclusive
42	<30	<30	<30	<30	<30	Pass
43	38	<30	<30	<30	--	Pass
44	<30	139377***	<30	<30	33	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
45	<30	<30	<30	<30	36949	Inconclusive
46	<30	184	<30	<30	--	Pass
47	<30	<30	<30	<30	<30	Pass
48	<30	<30	<30	<30	<30	Pass
49	<30	<30	<30	<30	--	Pass
50	<30	<30	<30	93	--	Pass
51	<30	40	<30	<30	--	Pass
52	<30	147	<30	595	287	Pass
53	<30	<30	<30	<30	49146	Inconclusive
54	<30	<30	<30	<30	1800	Inconclusive
55	<30	<30	<30	<30	5342	Inconclusive
56	<30	<30	<30	1758	--	Inconclusive
57	<30	249	<30	33	--	Pass
58	<30	348	<30	67	--	Pass
59	<30	<30	<30	<30	<30	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
60	<30	<30	<30	<30	42103	Inconclusive
61	<30	<30	<30	<30	657	Inconclusive
62	<30	<30	<30	<30	190	Pass
63	<30	<30	<30	<30	1915	Inconclusive
64	<30	<30	<30	<30	<30	Pass
65	<30	<30	<30	<30	<30	Pass
66	<30	63	<30	32	9831	Inconclusive
67	<30	<30	<30	34	38423	Inconclusive
68	<30	<30	<30	<30	--	Pass
69	<30	348	<30	<30	41	Pass
70	<30	<30	<30	<30	<30	Pass
71	<30	51	<30	<30	727	Inconclusive
72	<30	<30	<30	<30	1391	Inconclusive
73	43	19262**	<30	100	--	Inconclusive
74	<30	133	<30	209	--	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
75	<30	404	<30	<30	44	Pass
76	<30	<30	<30	<30	<30	Pass
77	<30	72	<30	954	--	Inconclusive
78	<30	74	<30	100	--	Pass
79	<30	<30	<30	<30	3326	Inconclusive
80	<30	<30	<30	<30	57	Pass
81	<30	<30	<30	<30	1498	Inconclusive
82	<30	<30	<30	<30	<30	Pass
83	<30	<30	<30	470	--	Pass
84	<30	151	<30	662	--	Inconclusive
85	<30	<30	<30	<30	<30	Pass
86	<30	<30	<30	<30	70161	Inconclusive
87	<30	80	<30	<30	--	Pass
88	<30	78	<30	105268	--	Inconclusive
89	<30	<30	<30	78	151	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
90	<30	<30	<30	<30	47	Pass
91	<30	<30	<30	<30	30752	Inconclusive
92	<30	<30	<30	<30	<30	Pass
93	<30	<30	<30	<30	<30	Pass
94	<30	118	<30	<30	278	Pass
95	<30	<30	<30	<30	<30	Pass
96	<30	<30	<30	<30	5561	Inconclusive
97	<30	<30	<30	<30	843	Inconclusive
98	<30	<30	<30	<30	757	Inconclusive
99	<30	<30	<30	<30	<30	Pass
100	<30	59	<30	34	<30	Pass
101	<30	<30	<30	75	42095	Inconclusive
102	<30	<30	<30	<30	<30	Pass
103	<30	<30	<30	175	--	Pass
104	<30	<30	<30	<30	<30	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
105	<30	287	<30	<30	<30	Pass
106	<30	163	<30	<30	--	Pass
107	<30	<30	<30	<30	<30	Pass
108	<30	<30	<30	<30	<30	Pass
109	<30	<30	<30	90	--	Pass
110	<30	<30	<30	<30	<30	Pass
111	<30	<30	<30	536	<30	Pass
112	<30	<30	<30	<30	<30	Pass
113	<30	78	<30	47	6389	Inconclusive
114	<30	<30	<30	<30	280	Pass
115	<30	5825***	<30	327	506	Inconclusive
116	<30	<30	<30	<30	<30	Pass
117	<30	<30	<30	<30	<30	Pass
118	<30	98	<30	562	--	Pass
119	<30	114	<30	<30	--	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

	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 result	< 60	< 600	< 600	< 600	< 300	
Inconclusive result	60 – 150	600 – 1500	600 – 1500	> 600	> 300	
Fail result	> 150	> 1500	> 1500	-	-	
120	<30	161	<30	384	--	Pass
121	<30	<30	<30	<30	<30	Pass
122	<30	<30	<30	<30	<30	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. "**" means the result is exempted according to 2011/65/EU ANNEX item 6: Lead as an alloying element in steel containing up to 0.35 % lead by weight, aluminum containing up to 0.4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.
6. "***" means the result is exempted according to 2011/65/EU ANNEX item 7(c)-I: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



3.2 Wet chemical test

Main instruments used for wet chemical test

Testing Target	Instrument	Method
Lead & Cadmium	ICP-OES	EN 62321-5:2014
Mercury	ICP-OES	EN 62321-4:2014
Hexavalent Chromium	UV-Vis	EN 62321-7-1:2015 EN 62321-7-2:2017
PBBs & PBDEs	GC/MS	EN62321-6:2015
DEHP, BBP, DBP & DIBP	GC/MS	EN 62321-8:2017

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.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



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	
56	--	--	--	Negative	--	--	Pass
77	--	--	--	Negative	--	--	Pass
84	--	--	--	Negative	--	--	Pass
88	--	--	--	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	<0.1µg/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	≥0.1µg/cm ² and ≤0.13 µg/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 µg/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).

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

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	
03	--	--	--	--	<50	<50	Pass
04	--	--	--	--	<50	<50	Pass
05	--	27832**	--	--	--	--	Pass
09	--	--	--	--	<50	<50	Pass
10	--	--	--	--	<50	<50	Pass
15	--	--	--	--	<50	<50	Pass
20	--	--	--	--	<50	<50	Pass
28	--	--	--	--	<50	<50	Pass
31	--	--	--	--	<50	<50	Pass
32	--	--	--	--	<50	<50	Pass
34	--	--	--	--	<50	<50	Pass
39	--	--	--	--	<50	<50	Pass
41	--	--	--	--	<50	<50	Pass
44	--	--	--	<5	--	--	Pass
45	--	--	--	--	<50	<50	Pass
53	--	--	--	--	<50	<50	Pass
54	--	--	--	--	<50	<50	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

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	
55	--	--	--	--	<50	<50	Pass
60	--	--	--	--	<50	<50	Pass
61	--	--	--	--	<50	<50	Pass
63	--	--	--	--	<50	<50	Pass
66	--	--	--	--	<50	<50	Pass
67	--	--	--	--	<50	<50	Pass
71	--	--	--	--	<50	<50	Pass
72	--	--	--	--	<50	<50	Pass
73	--	27865**	--	--	--	--	Pass
79	--	--	--	--	<50	<50	Pass
81	--	--	--	--	<50	<50	Pass
86	--	--	--	--	<50	<50	Pass
91	--	--	--	--	<50	<50	Pass
96	--	--	--	--	<50	<50	Pass
97	--	--	--	--	<50	<50	Pass
98	--	--	--	--	<50	<50	Pass
101	--	--	--	--	<50	<50	Pass
113	--	--	--	--	<50	<50	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Tel.: +86-21-60376368



China

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22

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	
115	--	--	--	<5	<50	<50	Pass

Remark:

1. ND = Not detected (Detected limit of Cd :2mg/kg;Pb, Hg, and Cr(VI):5mg/kg; PBBs and PBDEs: 5mg/kg)
2. " mg/kg " denotes " milligram per kilogram ".
3. "--" means the substance for this sample are not tested.
4. " ** " means the result is exempted according to 2011/65/EU ANNEX item 6: Lead as an alloying element in steel containing up to 0.35 % lead by weight, aluminum containing up to 0.4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Test Sample	DEHP [mg/kg]	DBP [mg/kg]	BBP [mg/kg]	DIBP [mg/kg]	RESULT
Limit	1000	1000	1000	1000	
01+02+03	<200	<200	<200	<200	Pass
04+07+09	<200	<200	<200	<200	Pass
10+12+13	<200	<200	<200	<200	Pass
14+15+17	<200	<200	<200	<200	Pass
20+24+26	<200	<200	<200	<200	Pass
27+28+29	<200	<200	<200	<200	Pass
31+32+34	<200	<200	<200	<200	Pass
36+37+38	<200	<200	<200	<200	Pass
39+40+41	<200	<200	<200	<200	Pass
42	<200	<200	<200	<200	Pass
44+45	<200	<200	<200	<200	Pass
47+48+52	<200	<200	<200	<200	Pass
53+54+55	<200	<200	<200	<200	Pass
59+60+61	<200	<200	<200	<200	Pass
62+63	<200	<200	<200	<200	Pass
64	<200	<200	<200	<200	Pass
65+66+67	<200	<200	<200	<200	Pass
69+70+71	<200	<200	<200	<200	Pass
72+75+76	<200	<200	<200	<200	Pass
79+80	<200	<200	<200	<200	Pass
81	<200	<200	<200	<200	Pass
82+85+86	<200	<200	<200	<200	Pass
89+90+91	<200	<200	<200	<200	Pass

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



China

Test Sample	DEHP [mg/kg]	DBP [mg/kg]	BBP [mg/kg]	DIBP [mg/kg]	RESULT
Limit	1000	1000	1000	1000	
92+93+94	<200	<200	<200	<200	Pass
95+96+97	<200	<200	<200	<200	Pass
98+99+100	<200	<200	<200	<200	Pass
101+102+104	<200	<200	<200	<200	Pass
105+107+108	<200	<200	<200	<200	Pass
110+111+112	<200	<200	<200	<200	Pass
113+114+115	<200	<200	<200	<200	Pass
116+117+122	<200	<200	<200	<200	Pass
121	<200	<200	<200	<200	Pass

Remark:

1. "<" means "less than".
2. "mg/kg" denotes "milligram per kilogram".
3. DEHP = Di-(2-ethyl-hexyl)phthalate, DBP = Di-butyl phthalate
BBP = Butyl-benzyl phthalate, DIBP = Di-iso-butyl phthalate

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

Prepared by:



Mr. Yiwei CHEN

Checked by:



Mr. Feng ZHANG

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



APPENDIX I: Product Model

Product: Lamp series	Test model: YJD-A-17L, DY-YJD-A-1, DY-CDD203-80W, XYD557, XYD583, XYD417, XYD561, MZ2-01, H05VV-F3G1.5, H05VV-F 3G1.0, H05RN-F 3G1.0, H05RR-F3G1.5, H07RN-F3G1.5
	
Additional model: CT2, CT3, AZ1-1, ACT1, ACT2, CT1, CT4, CT5, CT6, CT7, CT8, CT13, CT11, CT17 CT9, CT10, CT12, CT16, CT15, CT14, FCT1, FCT2, CT18, 6566, CT19, CT20, BSCT1, BSCT2 Z60W, Z40W, Z60WB, Z60WC, Z60W-X, Z40W-X, Z60WB-A G23-1, ICT3-A, ICT4-B, ICT5-A, ICT6-B, TCT7-A, ICT8-B CI1-A, CI2-B GH-2, EMZ1-1, BY-YP-1, MZ2-01, FMZ2-01 LDP01B, LDP02B, LDP03B, LDP04B, LDP05B, LDP06B, LDP07B, LDP08B, LDP09B, LDP10B, LDP10AB, LDP11B, LDP11AB, LDP12B, LDP13B, LDP01C, LDP02C, LDP03C, LDP04C, LDP05C, LDP06C, LDP07C, LDP08C, LDP09C, LDP10C, LDP10AC, LDP11C, LDP11AC, LDP12C, LDP13C	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368



China

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22

VA1, VP1, VA2

DY-ZE27-01, B-22, DY-ZE27-02, RXJ-01

DY-CDD203-80W, DY-CDD204-80+80W, DY-CDD203K-80W

YJD-A-24, YJD-A-26, YJD-A-27, DY-YJD-A-5, DY-YJD-A-17, YJD-A-21, YJD-A-19A, YJD-A-19B, YJD-A-19C, YJD-A-30A, YJD-A-30B, YJD-A-30C, YJD-A-32AT, YJD-A-32BT, YJD-A-32CT, YJD-A-33AT, YJD-A-33BT, LED-01A, LED-02A, LED-03A, LED-04A, LED-05A, LED-06A, LED-01B, LED-02B, LED-03B, LED-04B, LED-05B, LED-06B, LED-01C, LED-02C, LED-03C, LED-04C, LED-05C, LED-06C, LED-01B2, LED-02B2, LED-03B2, LED-04B2, LED-05B2, LED-06B2, LED-01LB, LED-01LB2, LED-01LC, LED-02LB, LED-02LB2, LED-02LC, LED-03LB, LED-03LB2, LED-03LC, LED-05LB, LED-05LB2, LED-05LC, LED-02LP, LED-03LP, LED-04LP, LED-05LP, LED-07LP, YJD-A-17LP, YJD-A-5LP, YJD-A-5LBP, YJD-A-17L, YJD-A-5L, LED-04L, LED-07L, YJD-A-5LB, YJD-A-36L, YJD-A-36LB, DY-YJD-A-8, YJD-A-31, YJD-A-34, YJD-A-37, DY-YJD-A-5P, DY-YJD-A-17P, YJD-A-21P, YJD-A-19AP, YJD-A-19BP, YJD-A-19CP, YJD-A-30AP, YJD-A-30BP, YJD-A-30CP, YJD-A-33ATP, YJD-A-33BTP, DY-YJD-A-8P, YJD-A-31P, YJD-A-34P, DY-YJD-A-1, DY-YJD-A-1B, DY-YJD-A-1C, YJD-A-20, YJD-A-22, YJD-A-22B, YJD-A-22C, YJD-A-22D, YJD-A-28, YJD-A-28B, YJD-A-28C, YJD-A-28D, YJD-A-24P, YJD-A-35, YJD-B-35, DY-YJD-A-2P, DY-YJD-A-2PB, DY-YJD-A-2PC, DY-YJD-A-16, YJD-A-25, YJD-A-36L, YJD-A-36LB

DY-XYD456E, DY-XYD457E, DY-XYD458E, DY-XYD459E, DY-XYD460E, DY-XYD461E

DY-XYD523, DY-XYD524, DY-XYD525, DY-XYD526, DY-XYD527, DY-XYD528

XYD561, XYD562

XYD429, XYD430, XYD431, XYD531

XYD406, BY-XYD408, BY-XYD411, BY-XYD450, XYD535, BY-XYD536, XYD538, BY-XYD539, DY-XYD530, DY-XYD532

XYD417, XYD418, XYD420, XYD421, XYD422, XYD432, XYD433, XYD451, XYD452, XYD453, XYD566, XYD567, XYD568, XYD569, XYD570, XYD571, BY-XYD534, BY-XYD416, DY-XYD480, DY-XYD521, BY-XYD497, BY-XYD497-2

XYD549, XYD552, XYD553, XYD554, XYD555, XYD556, XYD557, XYD558, XYD559, XYD560, XYD563, XYD564, XYD565, XYD572, XYD573, XYD574, XYD575, XYD576, XYD577, XYD578, XYD579, XYD580, XYD581, XYD560F, XYD582F, XYD583F, XYD584F, XYD585F, XYD587F, XYD589F, XYD590F, XYD591F

DY-XYD402, DY-XYD407, DY-XYD409, DY-XYD410, DY-XYD413, DY-XYD414

DY-XYD419, XYD434, XYD540, XYD545, XYD550

XYD582, XYD583, XYD584, XYD585, XYD586, XYD587, XYD588, XYD589, XYD590, XYD591, XYD592, XYD593, XYD594, XYD595, XYD596, XYD597

Remark:

1. The report covers material testing on specified samples.
2. tested materials covered by the report were declared by the manufacturer to be used on the models listed in the annex of the report.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737

Fax: +86-510-88203636

www.tuv-sud.cn

info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



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	
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 < 17mm	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 (≥ 25000 h): 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):	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given based on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
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 >17mm (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(≤500mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length (> 500mm 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 Ra >60;	
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

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
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 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; — 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.
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % 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, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
		category 11.
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 purposes with a lead content up to 0,4 % by weight	Expires on 18 May 2021 for categories 1-7 and 10.'
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 in vitro diag-nostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic medical de-vices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.'
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 in vitro diagnostic medical de-vices and industrial monitoring and control instruments expires on 21 July 2021. For category 8 in vitro 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.'
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. 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 in vitro diagnostic medical devices and industrial monitoring and control instruments expires on 21 July 2021. For category 8 in vitro 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.
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
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	

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
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)	Expires 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)	Categories 1-7 and 10, Expires on 21 July 2021
		Categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments, Expires on 21 July 2021
		Category 8 in vitro diagnostic medical devices, Expires on 21 July 2023
		Category 9 industrial monitoring and control instruments, and for category 11, Expires on 21 July 2024
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 ₂ O ₅ :Pb) when used in medical phototherapy equipment	Categories 5 and 8, excluding applications covered by entry 34 of Annex IV, 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
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	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.'
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

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
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	Applies to all categories; expires on: — 21 July 2021 for categories 1-7 and 10, — 21 July 2021 for categories 8 and 9 other than in vitro diag-nostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic medical de-vices, — 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
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(a)	Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm2 of display screen area)	Expires for all categories on [two years after the publication of the Delegated Directive in the Official Journal]
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	Expires on 1 December 2018

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368

Report No. 70.400.20.263.03-00/03

Dated 2020-04-22



Exemption		Scope and dates of applicability
	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.	
42	Lead in bearings and bushes of diesel or gaseous fuel powered internal combustion engines applied in non-road professional use equipment: <ul style="list-style-type: none">- with engine total displacement ≥ 15 litres; or- with engine total displacement < 15 litres and the engine is designed to operate in applications where the time between signal to start and full load is required to be less than 10 seconds; or regular maintenance is typically performed in a harsh and dirty outdoor environment, such as mining, construction, and agriculture applications.	Category 11, excluding applications covered by entry 6(c) of Annex III, Expires on 21 July 2024
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: <ul style="list-style-type: none">(a) 30 % by weight of the rubber for<ul style="list-style-type: none">(i) gasket coatings;(ii) solid-rubber gaskets; or(iii) rubber components included in assemblies of at least three components using electrical, mechanical or hydraulic energy to do work, and attached to the engine.(b) 10 % by weight of the rubber for rubber-containing components not referred to in point (a). 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.	Applies to category 11 and expires on 21 July 2024.
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 (*1), 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.

--END OF REPORT--

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TÜV SÜD Certification and Testing (China) Co., Ltd.
10 Huaxia Road(M), Dongting, Wuxi
Jiangsu, 214100, P. R. China

Tel.: +86-510-88203737
Fax: +86-510-88203636
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No.1999 Duhui Road
Shanghai City

Tel.: +86-21-60376368