

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

## Technical Report

**Applicant:** Ningbo Lepin network Equipment Co., Ltd.  
District A, Huangjiabu industrial zone  
315464 yuyao city, zhejiang  
PEOPLE'S REPUBLIC OF CHINA

**Attn:** Louis Zheng

**Manufacturer:** Ningbo Lepin network Equipment Co., Ltd.

**Test subject:** **Tested components:** Refer to Page 3~11

**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 62321-6:2015  
EN 62321-7-1:2015  
EN 62321-8:2017

**Test result:** Refer to the data listed in following pages

**Conclusion:** RoHS test Pass

**Remarks:**

1. The result relates only to the items tested
2. Samples were tested as received

---

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

**1 Order**

**1.1 Date of Purchase Order**  
2018-11-30

**1.2 Customer's Reference**  
Nil

**1.3 Receipt Date of Test Sample**  
2018-11-30  
2018-12-28

**1.4 Date of Testing**  
2018-11-30~2018-12-12  
2018-12-28~2019-01-08

**1.5 Document submitted**  
Bill of Material

**1.6 Location of Testing**  
TÜV PS SHA

---

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

2. Description of the tested specimen

No.	Tested sample	Conclusion	Picture
001	Piece metal silvery	Pass	
002	Sheath plastic black	Pass	
003	Ring metal silvery	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
004	Piece plastic black	Pass	
005	Piece metal silvery	Pass	
006	Nut metal silvery	Pass	
007	Screw metal silvery	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)


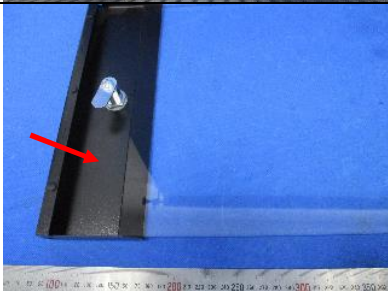
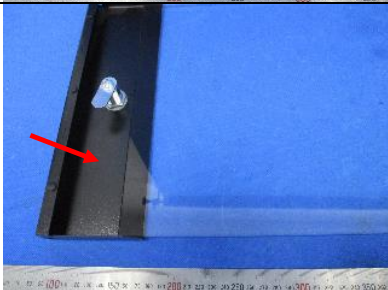
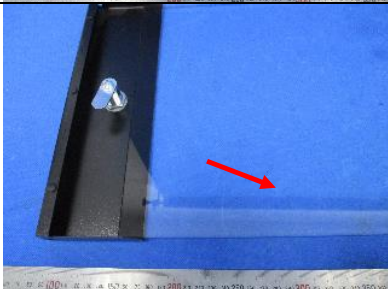
Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
008	Piece metal silvery	Pass	
009	Coating black	Pass	
010	Base metal silvery	Pass	
011	Piece glass transparent	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01  
 Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
012	Piece metal silvery	Pass	
013	Screw metal silvery	Pass	
014	Piece metal silvery	Pass	
015	Ring plastic white	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
 3-13, No.151 Heng Tong Road  
 Shanghai 200 070  
 P. R. China

Shanghai Chemical Lab  
 No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
 Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
016	Shell metal silvery	Pass	
017	Block metal silvery	Pass	
018	Spring metal black	Pass	
019	Rod metal silvery	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
020	Spring metal silvery	Pass	
021	Hoop metal black	Pass	
022	Block metal silvery	Pass	
023	Block rubber black	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501



Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
024	Block plastic black	Pass	
025	Screw metal coppery	Pass	
026	Screw metal black	Pass	
027	Block rubber black	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
028	Block plastic yellow	Pass	
029	Block plastic yellow	Pass	
030	Block plastic yellow	Pass	
031	Block metal silvery	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

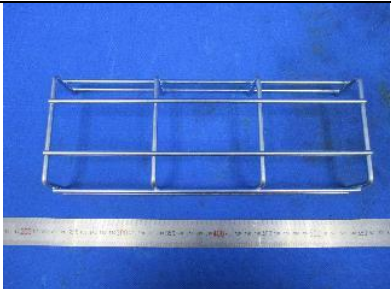
Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

No.	Tested sample	Conclusion	Picture
032	Block metal silvery	Pass	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

### 3. Test Results

#### 3.1 ED-XRF Spectrometer test for total Cadmium, Chromium, Mercury, Lead and Bromine according to EN62321-3-1:2014

##### 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

---

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

##### **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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

	TOTAL CADMIUM [mg/kg]	TOTAL LEAD [mg/kg]	TOTAL MERCURY [mg/kg]	TOTAL CHROMIUM [mg/kg]	TOTAL BROMINE [mg/kg]	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	-	-	
Test score, sample 001	<30	88	<50	<50	--	Pass
Test score, sample 002	<30	<50	<50	<50	<50	Pass
Test score, sample 003	<30	154	<50	<50	--	Pass
Test score, sample 004	<30	<50	<50	<50	<50	Pass
Test score, sample 005	<30	76	<50	77558	--	Inconclusive
Test score, sample 006	<30	128	<50	660	--	Inconclusive
Test score, sample 007	<30	<50	<50	691	--	Inconclusive
Test score, sample 008	<30	199	<50	76310	--	Inconclusive
Test score, sample 009	<30	<50	<50	<50	<50	Pass
Test score, sample 010	<30	<50	<50	53	--	Pass
Test score, sample 011	<30	<50	<50	<50	<50	Pass
Test score, sample 012	<30	62	<50	80451	--	Inconclusive
Test score, sample 013	<30	166	<50	558	--	Pass
Test score, sample 014	<30	<50	<50	442	--	Pass

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

	TOTAL CADMIUM [mg/kg]	TOTAL LEAD [mg/kg]	TOTAL MERCURY [mg/kg]	TOTAL CHROMIUM [mg/kg]	TOTAL BROMINE [mg/kg]	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	-	-	
Test score, sample 015	<30	<50	<50	<50	<50	Pass
Test score, sample 016	<30	86	<50	24662	--	Inconclusive
Test score, sample 017	<30	84	<50	<50	--	Pass
Test score, sample 018	<30	155	<50	48410	--	Inconclusive
Test score, sample 019	<30	56	<50	<50	--	Pass
Test score, sample 020	<30	<50	<50	<50	--	Pass
Test score, sample 021	<30	329	<50	216	--	Pass
Test score, sample 022	<30	93	<50	406	--	Pass
Test score, sample 023	<30	<50	<50	<50	<50	Pass
Test score, sample 024	<30	<50	<50	<50	72	Pass
Test score, sample 025	<30	80	<50	95	--	Pass
Test score, sample 026	<30	160	<50	6648	--	Inconclusive
Test score, sample 027	<30	<50	<50	<50	<50	Pass
Test score, sample 028	<30	<50	<50	<50	<50	Pass

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
 3-13, No.151 Heng Tong Road  
 Shanghai 200 070  
 P. R. China

Shanghai Chemical Lab  
 No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
 Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

	TOTAL CADMIUM [mg/kg]	TOTAL LEAD [mg/kg]	TOTAL MERCURY [mg/kg]	TOTAL CHROMIUM [mg/kg]	TOTAL BROMINE [mg/kg]	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	-	-	
Test score, sample 029	<30	<50	<50	<50	54009	Inconclusive
Test score, sample 030	<30	<50	<50	<50	<50	Pass
Test score, sample 031	<30	108	<50	525	--	Pass
Test score, sample 032	<30	56	<50	622	--	Inconclusive

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.

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

### 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	EN62321-8:2017

#### 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.

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

##### 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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501



Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Test Sample	Cadmium [mg/kg]	Lead [mg/kg]	Mercury [mg/kg]	Chromium (VI) [mg/kg]	PBBs (Sum) [mg/kg]	PBDEs (Sum) [mg/kg]	RESULT
Limit	100	1000	1000	1000	1000	1000	
Sample 029	--	--	--	--	ND	ND	Pass

Remark:

1. ND = Not detected (Detected limit of Cd :2mg/kg;Pb, Hg, and Cr(VI):10mg/kg; PBBs and PBDEs: 5mg/kg)
2. " mg/kg " denotes " milligram per kilogram ".
3. "--" means the substance for this sample are not tested.

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Test Sample	Cadmium [mg/kg]	Lead [mg/kg]	Mercury [mg/kg]	Chromium# (VI) [mg/kg]	PBBs (Sum) [mg/kg]	PBDEs (Sum) [mg/kg]	RESULT
Limit	100	1000	1000	§	1000	1000	
Sample 005	--	--	--	Negative	--	--	Pass
Sample 006	--	--	--	Negative	--	--	Pass
Sample 007	--	--	--	Negative	--	--	Pass
Sample 008	--	--	--	Negative	--	--	Pass
Sample 012	--	--	--	Negative	--	--	Pass
Sample 016	--	--	--	Negative	--	--	Pass
Sample 018	--	--	--	Negative	--	--	Pass
Sample 020	--	--	--	Negative	--	--	Pass
Sample 026	--	--	--	Negative	--	--	Pass
Sample 032	--	--	--	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 <sup>2</sup>	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 <sup>2</sup> and ≤0.13 µg/cm <sup>2</sup>	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 <sup>2</sup>	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).

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
 3-13, No.151 Heng Tong Road  
 Shanghai 200 070  
 P. R. China

Shanghai Chemical Lab  
 No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
 Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Test Sample	DEHP [mg/kg]	DBP [mg/kg]	BBP [mg/kg]	DIBP [mg/kg]	RESULT
Limit	1000	1000	1000	1000	
Sample 002	ND	ND	ND	ND	Pass
Sample 004	ND	ND	ND	ND	Pass
Sample 009	ND	ND	ND	ND	Pass
Sample 015	ND	ND	ND	ND	Pass
Sample 023	ND	ND	ND	ND	Pass
Sample 024	ND	ND	ND	ND	Pass
Sample 027	114	ND	ND	ND	Pass
Sample 028+29+30	ND	ND	ND	ND	Pass

Remark:

1. ND = Not detected (Detected limit : 50mg/kg)
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

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

TÜV SÜD Certification and Testing (China) Co.,Ltd.  
Shanghai Branch  
Chemical Lab

Engineer:

  
Mr. Yu Wei

Checked by:

  
Mr. Yang Sirong

---

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

## APPENDIX I: 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 $\geq 30$ 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 $\geq 50$ W and < 150 W:5mg	
1(d)	For general lighting purpose $\geq 30$ W and $\geq 150$ W:15mg	
1(e)	For general lighting purpose with circular or square structural shape san 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 $\geq 9$ mm and $\leq 17$ 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 $\leq 28$ mm (e.g. T8): 5mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

### 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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Exemption		Scope and dates of applicability
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter >28mm (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( $\geq 25000$ 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):	
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( $\leq 500$ mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length (> 500mm and $\leq 1500$ mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length (> 1500mm)	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

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Exemption		Scope and dates of applicability
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
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	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Exemption		Scope and dates of applicability
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

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501



Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Exemption		Scope and dates of applicability
		vitro diagnostic medical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for 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 diagnostic 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.'

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

	Exemption	Scope and dates of applicability
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	
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	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

	Exemption	Scope and dates of applicability
	refrigerators up to 0,75 % by weight in the cooling solution	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a)	Lead in white glasses used for optical applications	
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
16	Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing	Expires on 1 January 2011

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

	Exemption	Scope and dates of applicability
	phosphors such as SMS ((Sr,Ba) <sub>2</sub> MgSi <sub>2</sub> O <sub>7</sub> :Pb)	
18(b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP(BaSi <sub>2</sub> O <sub>5</sub> :Pb)	
19	Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)	Expires on 1 June 2011
20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	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
27	Lead alloys as solder for transducers used in high-powered (designated to operate for several	Expired on 24 September 2010

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Exemption		Scope and dates of applicability
	hours at acoustic power levels of 125 dB SPL and above) loudspeakers	
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 diagnostic 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	

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501

Report No. 70.400.18.1254.01-00/01

Dated 2019-02-14



China

Exemption		Scope and dates of applicability
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 mm <sup>2</sup> 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 directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council.	Expires on 1 December 2018

No extract, abridgment or abstraction from the report can be published or used to advertise a product without the written consent from TÜV SÜD Certification and Testing (China) Co., Ltd. On condition that the documentation(s) submitted by the client is valid and truthful, the data listed herein apply only to the particular sample tested under the specific as stated in corresponding test reports and not to other samples in regular production.

**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.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch  
3-13, No.151 Heng Tong Road  
Shanghai 200 070  
P. R. China

Shanghai Chemical Lab  
No. 1999 Du Hui Road

Tel.: +86-21-6141-0123  
Fax: +86-21-6140-8600  
[www.tuv-sud.cn](http://www.tuv-sud.cn)  
[info@tuv-sud.cn](mailto:info@tuv-sud.cn)

Tel.: +86-21-6037-6501