







中国认可 国际互认 TESTING **CNAS L5541**

Verification Report



Report No.

A2190208782101001

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CENTRE TESTING INTERNATIONAL



Applicant

SHANGHAI YONGJI ELECTRICAL CO.,LTD. /JOVEAN & ROGY

ELECTRICAL HOLDING CO.,LTD. OFWENZHOU /ZHEJIANG YONGJI

ELECTRICAL CO.,LTD.

Address

NO.2239, SOUTH JINSHI ROAD, JINSHANWEI TOWN, JINSHAN DISTRICT, SHANGHAI, P.R.CHINA/NO.132, XINGUANG ROAD, XINGUANG INDUSTRIAL ZONE,LIUSHI TOWN,YUEQING CITY

ZHEJIANG PROVINCE, P.R. CHINA /NO.788, NANMING ROAD, LISHUI ECONOMIC AND TECHNOLOGICAL DEVELOPMENT ZONE, LISHUI CITY

ZHEJIANG PROVINCE, P.R. CHINA

Product Name

Product Part No.

Client Reference

Information

RCCB

RCCB

JVL16-63, JVL1-63, JVL16-63, JVL11-63, JVL11-32, JVL16-100, JVL7-125, JVL22-63, JVL15-63, JVL4-63, JVL19-63, JVL29-63, JVRO16-32, JVL16-40,

JVL5-40, FI-100, JVL6-32, JVL16-32, JVRO27-63, JVL16-63-B, JVRO16-32-B

Conclusion

Tested Sample

According to standard/directive

Result

Submitted Sample

RoHS Directive 2011/65/EU withamendment (EU) 2015/863

PASS

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment(EU) 2015/863.



Reviewed by

Date

Sep. 27, 2019

Chen Kaimin

Lab Manager

Centre Testing International Pinbiao(Shanghai) Co., Ltd.

No.1996, Xinjinqiao Road, Pudong New District, Shanghai, China

Hotline:400-6788-333

www.cti-cert.com E-mail:info@cti-cert.com Complaint call:0755-33681700 Complaint E-mail:complaint@cti-cert.com

No. T172798903



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| Photo(s) | of the tested cor | mponent(s) |
| Exempte | ed Items of RoHS | S Directive |



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Sample Received Date

Aug. 15, 2019

Testing Period

Aug. 15, 2019 to Sep. 27, 2019

Test Requested

With reference to RoHS Directive 2011/65/EU withamendment (EU)

2015/863,toconduct verification test forLead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs),

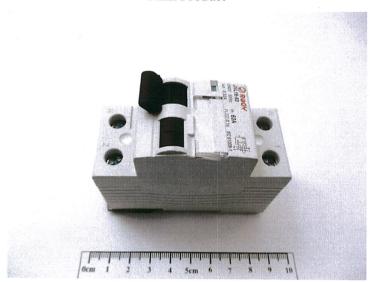
Polybrominated Diphenyl Ethers(PBDEs) and Phthalates (Dibutyl phthalate(DBP),

Benzylbutyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP), Diisobutyl

phthalate(DIBP))in the submitted samples.

Photo(s) of the Product(s)

Final Product





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Test Method

A.Screening limits for regulated elements according to IEC 62321-3-1:2013(Unit: mg/kg)

| | | 101010 | , |
|---------|--|--|--|
| Element | Polymers | Metals | Composite material |
| Pb | BL \leq (700-3 σ) $<$ X $<$ (1300+3 σ) | BL \leq (700-3 σ) $<$ X $<$ (1300+3 σ) | BL \leq (500-3 σ) $<$ X $<$ (1500+3 σ) |
| 10 | ≪OL | ≪OL | ≪OL |
| Cd | BL \leq (70-3 σ) $<$ X $<$ (130+3 σ) | BL \leq (70-3 σ) $<$ X $<$ (130+3 σ) | LOD (V (150+2) / OI |
| Cu | ≤OL | ≤OL | LOD <x<(150+3σ)≤ol< td=""></x<(150+3σ)≤ol<> |
| Hg | BL \leq (700-3 σ) $<$ X $<$ (1300+3 σ) | BL \leq (700-3 σ) $<$ X $<$ (1300+3 σ) | BL \leq (500-3 σ) $<$ X $<$ (1500+3 σ) |
| ng | ≪OL | ≪OL | ≤OL |
| Cr | BL≤(700-3σ)< X | BL≤(700-3σ)< X | BL≤(500-3σ)< X |
| Br | BL≤(300-3σ)< X | N/A | BL≤(250-3σ)< X |

B. Screening limits for Phthalates

| Test Item(s) | Screening limits(Unit: mg/kg) |
|---------------------------------|-------------------------------|
| Dibutyl phthalate(DBP) | BL≤600 <x< td=""></x<> |
| Benzylbutyl phthalate(BBP) | BL≤600 <x< td=""></x<> |
| Di-2-ethylhexyl phthalate(DEHP) | BL≤600 <x< td=""></x<> |
| Diisobutyl phthalate(DIBP) | BL≤600 <x< td=""></x<> |

C.Chemical Test

| C.Chemical Test | | | | | |
|---|--|-----------------------|---------------------------------|------------------------|--|
| Tested Item(s) | Test Method | Measured Equipment(s) | MDL | Limit | |
| Lead (Pb) | IEC 62321-5:2013 | ICD OFG | 10 mg/kg | 1000 5 | |
| Lead (10) | Refer to IEC 62321-5:2013 | ICP-OES | 10 mg/kg | 1000 mg/kg | |
| Cadmium (Cd) | IEC 62321-5:2013 | ICP-OES | 10 mg/kg | 100 // | |
| Cadimum (Cu) | Refer to IEC 62321-5:2013 | ICP-OES | 10 mg/kg | 100 mg/kg | |
| | IEC 62321-4:2013+AMD1:2017 CSV | | 10 mg/kg | | |
| Mercury (Hg) | Refer to IEC 62321-4:2013+AMD1:2017 CSV | ICP-OES | 10 mg/kg | 1000 mg/kg | |
| | IEC 62321-7-2:2017 | | 20 mg/kg | | |
| Hexavalent Chromium (Cr(VI)) | IEC 62321-7-1:2015 | UV-Vis | 0.10μg/cm ² (LOQ) | 1000 mg/kg | |
| Polybrominated Biphenyls (PBBs) | IEC 62321-6:2015 | GC-MS | 100 mg/kg | 1000 mg/kg | |
| Polybrominated Diphenyl Ethers (PBDEs) | IEC 62321-6:2015 | GC-MS | 100 mg/kg | 1000 mg/kg | |
| Phthalates (DBP, BBP, DEHP, DIBP) | IEC 62321-8:2017 | GC-MS | 50 mg/kg | 1000 mg/kg for each | |



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Remark:

- BL = Under the screening limit
- OL = Above the screening limit
- X = The range of needing to do further testing
- 3σ =The reproducibility of analytical instruments
- N/A= Not applicable
- LOD= Detection limit
- LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm²



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Test Result(s)

| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | - |
| | | Hg | BL | / | / | | |
| | , | Cr(Cr(VI)) | BL | / | / | | |
| 1.1 | Grey plastic | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | | DBP | N/A | BL | / | | × |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | Grey plastic with | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | - |
| 1.2 | black/red | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | printing | DBP | N/A | BL | / | | |
| | printing | BBP | N/A | BL | / | | ¥ |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| 1.3 | Colorless | Cr(Cr(VI)) | BL | / | / | | |
| | transparent | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / - | | |
| | | Hg | BL | / | / | | |
| | Colorless | Cr(Cr(VI)) | BL | / | / | | |
| 1.4 | transparent | Br(PBBs&PBDEs) | BL | / | 1 | PASS | - |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | D 1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.5 | Dark grey plastic | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | 2 |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | White | Cr(Cr(VI)) | BL | / | / | | , |
| 1.6 | double | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | sided tape | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | æ |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 5 - 1, - 12, 7 |
| | | Hg | BL | / | / | | |
| 1.7 | White glue | Cr(Cr(VI)) | BL | / | / | | |
| | | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Metal with | Cr(Cr(VI)) | IN | / | N.D. [▼] | | * |
| 1.8 | light blue | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | plating | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / . | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Metal with | Cr(Cr(VI)) | IN | / | N.D. [▼] | | |
| 1.9 | light blue | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | plating | DBP | N/A | / | / | | * |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | , |
| | | Hg | BL | / | / | | |
| | Metal with | Cr(Cr(VI)) | IN | / | N.D. [▼] | | |
| 1.10 | light blue | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | plating | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| Met | | Cd | BL | / | / | | |
| | | Hg | BL | / | | | |
| | Metal with | Cr(Cr(VI)) | IN | / | N.D.▼ | | |
| 1.11 | light blue | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | plating | DBP | N/A | / | / | 17100 | |
| | ~ = | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|-------------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Metal with | Cr(Cr(VI)) | BL | / | / | | |
| 1.12 | silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | plating | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | , |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | e e | Cd | BL | / | / | | |
| | | Hg | BL | 1 | / | | |
| | Cilcom | Cr(Cr(VI)) | BL | / | / | | |
| 1.13 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | 2 |
| | metai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | 0.1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.14 | Silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | * |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| 1.15 Silver metal | | Cd | BL | / | / | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | IN | / | N.D.▼ | | |
| | Silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal | DBP | N/A | / | | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | | 1 | |
| | | DIBP | N/A | / | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | (%) | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | |
| | C:1 | Cr(Cr(VI)) | IN | / | N.D.▼ | | |
| 1.16 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | Illetai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | - / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | / | / | 27327#1 | | Aug. 15, 2019 |
| | | Cd | / | / | 50 | | Sep. 18, 2019 |
| | | Hg | / | / | N.D. | | |
| | Caldan | Cr(Cr(VI)) | / | / | N.D. [▼] | | |
| 1.17-A | Golden metal | Br(PBBs&PBDEs) | / | / | / | PASS | |
| | | DBP | / | / | / | | 25 |
| | | BBP | / | / | 1 | | |
| | | DEHP | / | / | / | | |
| | | DIBP | / | / | / | | * |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Silvery | Cr(Cr(VI)) | BL | / | / | | |
| 1.18 | metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | motur | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | × | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| 1.19 | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Silvery | Cr(Cr(VI)) | BL | / | / | | |
| | metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | inctal | DBP | N/A | 1 | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | _ | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | G!l | Cr(Cr(VI)) | BL | 1 | / | | |
| 1.20 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | ٠ |
| | 0.1 | Cr(Cr(VI)) | IN | / | N.D. [▼] | | |
| 1.21 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | = | Hg | BL | / | / | | |
| | C:1 | Cr(Cr(VI)) | IN | / | N.D.▼ | | -, |
| 1.22 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| 1.23 | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | C:1 | Cr(Cr(VI)) | BL | / | / | | |
| | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | inclai | DBP | N/A | / | / | *** | - 8 |
| | | BBP | N/A | / | / | | , |
| | | DEHP | N/A | / | / | | - |
| | | DIBP | N/A | / | / | | |



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| No. Description Test T | | 11 NO. A219 | 0208782101001 | | | | | rage 12 01 31 |
|--|------|-------------|----------------|-----------|-----------|------|------------|--------------------------|
| 1.24 Silvery metal Cd BL / | | - | Tested Items | Screening | Screening | Test | Conclusion | Received/ Resubmitted |
| 1.24 Silvery metal Hg | | | Pb | BL | / | / | | Aug. 15, 2019 |
| 1.24 Silvery metal Br(PBBs&PBDEs) N/A | | | Cd | BL | / | / | | |
| 1.24 Silvery metal Br(PBBs&PBDEs) N/A | | | Hg | BL | / | / | | |
| 1.24 metal Br(PBS&PBDEs) N/A | | Cilvani | Cr(Cr(VI)) | BL | / | / | | |
| DBP | 1.24 | | Br(PBBs&PBDEs) | N/A | / | / | PASS | * 2 |
| DEHP | | illetai | DBP | N/A | / | / | | |
| DIBP | | | BBP | N/A | / | / | | |
| 1.25 Silvery metal Pb | | s. | DEHP | N/A | / | / | | |
| 1.25 Silvery metal Cd BL / | | | DIBP | N/A | / | / | | |
| 1.25 Silvery metal | | | Pb | BL | / | / | | Aug. 15, 2019 |
| 1.25 Silvery metal Cr(Cr(VI)) BL | | | Cd | BL | / | / | | , |
| 1.25 Br(PBBs&PBDEs) N/A | | | Hg | BL | / | / | | |
| 1.25 Silvery metal Br(PBBs&PBDEs) N/A | | | Cr(Cr(VI)) | BL | / | / | | |
| DBP | 1.25 | | | N/A | / | / | PASS | 2 |
| DEHP N/A | | | DBP | N/A | / | / | | |
| DIBP | | | BBP | N/A | / | /- | | |
| 1.26 Silvery metal Pb | | | DEHP | N/A | / | / | | 2 |
| 1.26 Silvery metal Cd | | | DIBP | N/A | / | / | | |
| 1.26 Silvery metal Cd BL / | | | Pb | BL | / | / | | Aug. 15, 2019 |
| 1.26 Silvery metal Cr(Cr(VI)) BL | | | Cd | BL | / | / | | , |
| 1.26 Silvery metal Cr(Cr(VI)) BL | | | Hg | BL | / | / | | * |
| 1.26 Br(PBBs&PBDEs) N/A | | | | BL | / | / | | |
| DBP | 1.26 | - | | N/A | / | / | PASS | |
| BBP N/A | | metal | | | / | / | | |
| DEHP N/A | | | BBP | | | | | |
| DIBP N/A | | | DEHP | | / | / | | |
| Pb BL | | | | | / | / | | * |
| Cd BL / / | | | | | * | / | | Aug. 15, 2019 |
| 1.27 Hg BL / / | | | | | / | / | | |
| 1.27 Silvery metal | | | | | | | | |
| 1.27 Br(PBBs&PBDEs) N/A | 1.27 | | | | | | | |
| DBP N/A | | - 1 | | | / | | PASS | |
| BBP N/A / / | | metal | | | / | | | |
| | | | | | | | | |
| DEHP N/A / / | | | DEHP | | | | | |
| DIBP N/A / / | | | | | | | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | 6 | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL · | / | / | | |
| | 0.1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.28 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | illetai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | . / | | |
| | | DEHP | N/A | / | . / | | |
| | | DIBP | N/A | / | / | | _ |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | C:1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.29 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| - | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Metal with | Cr(Cr(VI)) | BL | / | / | | |
| 1.30 | silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | plating | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | - | Aug. 15, 2019 |
| 1.31 | | Cd | OL | / | 7643 ^{#3} | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | |
| | Cilver | Cr(Cr(VI)) | IN | / | N.D.▼ | | , |
| | Silvery contact | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | Contact | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | ä |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | 2 |
| | 0.1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.32 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metai | DBP | N/A | / | / | | |
| | , | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | ŷ. |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | C'1 | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.33 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | - |
| | metai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / - | | |
| | | Hg | BL | / | / | | |
| | 0:1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.34 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | inetai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | , and | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Dod start | Cr(Cr(VI)) | BL | / | / | | |
| 1.35 | Red steel tapes | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | tapes | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date ¹ |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|---|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | * |
| | | Hg | BL | / | / | | |
| | Dlask | Cr(Cr(VI)) | BL | / | / | | |
| 1.36 | Black plastic | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | DI I | Cr(Cr(VI)) | BL | / | / | | |
| 1.37 | Black plastic | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| s | | DIBP | N/A | BL | / | | 4 |
| | | Pb | BL | . / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| 2 | | Hg | BL | / | / | | |
| | D1 1 | Cr(Cr(VI)) | BL | / | / " " " | | |
| 1.38 | Black | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| - | | . Cd | BL | / | / | | <u> </u> |
| | | Hg | BL | / | / | | |
| | Light | Cr(Cr(VI)) | BL | / | / | | |
| 1.39 | yellow | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Light | Cr(Cr(VI)) | BL | / | / | | |
| 1.40 | brown | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | 7 / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | , |
| | Light | Cr(Cr(VI)) | BL | / | / | | |
| 1.41 | yellow | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | - |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | × | Hg | BL | / | / | | |
| | Light | Cr(Cr(VI)) | BL | / | / | | 94 |
| 1.42 | yellow | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / . | | |
| = | Δ | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | = |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 8 |
| | | Hg | BL | / | / | | |
| - | Light | Cr(Cr(VI)) | BL | / | / | | |
| 1.43 | yellow | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / . | | |
| | | Hg | BL | / | / | | |
| | Light | Cr(Cr(VI)) | BL | / | / | | |
| 1.44 | yellow | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | 33/1.1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.45 | White plastic | Br(PBBs&PBDEs) | BL | / | / 4 | PASS | |
| | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| , | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | * |
| | XX/1-:4- | Cr(Cr(VI)) | BL | / | / | | |
| 1.46 | White plastic | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | piastic | DBP | N/A | BL | / | | F1 |
| | ¥ | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | 40 |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | D#0 | Cr(Cr(VI)) | BL . | / | / | | |
| 1.47 | Brown rubber | Br(PBBs&PBDEs) | BL | / | / | PASS | _ |
| | Tubbei | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | D | Cr(Cr(VI)) | BL | / | / . | | |
| 1.48 | Brown rubber | Br(PBBs&PBDEs) | BL | / | / | PASS | 91 |
| | rubber | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | = |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | D | Cr(Cr(VI)) | BL | / | / | | |
| 1.49 | Brown plastic | Br(PBBs&PBDEs) | BL | / | / | PASS | 9 |
| | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / . | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / . | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| J. | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.50 | Green ink | Br(PBBs&PBDEs) | BL | / | 1 | PASS | |
| | | DBP | N/A | BL | / | | |
| | = | BBP | N/A | BL | / | | 2 |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / . | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 9 |
| | | Hg | BL | / | / | | |
| | D1 1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.51 | 1.51 Black | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | , | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | White | Cr(Cr(VI)) | BL | / | / | | |
| 1.52 | plastic | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Light | Cr(Cr(VI)) | BL | / | / | | |
| 1.53 | | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 3 |
| | | Hg | BL | / | / | | |
| | G'1 | Cr(Cr(VI)) | BL | / | / | | |
| 1.54 | Silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | ×. | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.55 | Silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal | DBP | N/A | / | / | 11100 | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | ļ | DIBP | N/A | / | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|--------------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Caldan | Cr(Cr(VI)) | BL | / | / | | |
| 1.56 | Golden metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | inctar | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | * |
| | | DEHP | N/A | / | / . | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Discoulent's | Cr(Cr(VI)) | BL | / | / | | |
| 1.57 | Blue plastic wire jacket | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | wire jacket | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / - | | |
| | | DEHP | N/A | BL | / | | a: |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Green | Cr(Cr(VI)) | BL | / | / | | |
| 1.58 | plastic wire | Br(PBBs&PBDEs) | BL | / | / | PASS | * |
| | jacket | DBP | N/A | IN | N.D. | | |
| | | BBP | N/A | IN | N.D. | | |
| | | DEHP | N/A | IN | N.D. | | |
| | | DIBP | N/A | IN | N.D. | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | C | Cr(Cr(VI)) | BL | / | / | | |
| 1.59 | Cupreous metal wire | Br(PBBs&PBDEs) | N/A | / | / . | PASS | |
| | metai wire | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| - | | DIBP | N/A | / | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | * | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Body with | Cr(Cr(VI)) | . BL | / | / | | |
| 1.60 | multicolor | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | ink | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.61 | Silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal pin | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | - | DEHP | N/A | / | / | | |
| | | DIBP | N/A | . / | / | | |
| | | Pb | IN | / | 184 | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | , |
| | | Hg | BL | / | / | | |
| | Silvery | Cr(Cr(VI)) | BL | / | / | | |
| 1.62 | soldering | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | tin | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | / | / | N.D. | | Aug. 15, 2019 |
| | | Cd | / | / | N.D. | | Sep. 2, 2019 |
| | | Hg | / | / | N.D. | | Sep. 18, 2019 |
| | Black | Cr(Cr(VI)) | / | / | N.D. | | |
| 1.63-A | plastic wire | Br(PBBs&PBDEs) | / | / | N.D. | PASS | |
| | jacket | DBP | / | / | N.D. | 11100 | |
| | | BBP | / | / | N.D. | | |
| | | DEHP | / | / | N.D. | | |
| | | DIBP | / | / | N.D. | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | . / | | |
| | G!l | Cr(Cr(VI)) | BL | / | / | | |
| 1.64 | Silvery metal wire | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal wife | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | 1 | |
| | | Hg | BL | / | / | | |
| | Cupreous | Cr(Cr(VI)) | BL | / | / | | |
| 1.65 | lacquered | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | wire | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | - / | | |
| | | DEHP | N/A | BL | / | | |
| | 9 | DIBP | N/A | BL | / | | |
| | | Pb | / | / | N.D. | | Aug. 15, 2019 |
| | × | Cd | / | / | N.D. | | Sep. 2, 2019 |
| | | Hg | / | / | N.D. | | Sep. 18, 2019 |
| | Blue | Cr(Cr(VI)) | / | / | N.D. | | |
| 1.66-A | adhesive | Br(PBBs&PBDEs) | / | / | N.D. | PASS | |
| | tape | DBP | / | / | N.D. | | |
| | | BBP | / | / | N.D. | | |
| | | DEHP | / | / | N.D. | | |
| | | DIBP | - / | / | N.D. | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Нg | BL | / | / | | E |
| | D11 | Cr(Cr(VI)) | BL | / | / | | |
| 1.67 | Black plastic | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| 5 | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | p. |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Black | Cr(Cr(VI)) | BL | / | / | | |
| 1.68 | plastic | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | piastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | - |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | ** |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | |
| | 1.69 White foam | Cr(Cr(VI)) | BL | / | / | | |
| 1.69 | | Br(PBBs&PBDEs) | BL | / | / | PASS | = |
| | | DBP | N/A | IN | N.D. | | |
| | | BBP | N/A | IN | N.D. | | |
| | | DEHP | N/A | IN | N.D. | | |
| | | DIBP | N/A | IN | N.D. | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Cil | Cr(Cr(VI)) | BL | / | / | | |
| 1.70 | Silvery | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metal | DBP | N/A | | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 3 , |
| | | Hg | BL | / | / | | |
| | W 71 *- | Cr(Cr(VI)) | BL | / | / | | |
| 1.71 | White | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | | | _ |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|-----------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 2 |
| | | Hg | BL | / | / | | |
| | White | Cr(Cr(VI)) | BL | / | / | | |
| 1.72 | plastic | Br(PBBs&PBDEs) | BL | / | / | PASS | × |
| | plastic | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | - |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.73 Blue plast | Blue plastic | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | 8 , *** |
| | | Hg | BL | / | / | | |
| = | | Cr(Cr(VI)) | BL | / | / | | |
| 1.74 | White | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | plastic | DBP | N/A | BL | / | 11100 | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | .145. 15, 2017 |
| | | Hg | BL | / | / | | |
| | Cupreous | Cr(Cr(VI)) | BL | / | / | | |
| 1.75 | lacquered | Br(PBBs&PBDEs) | BL | / | / | PASS | |
| | wire | DBP | N/A | BL | / | 1735 | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | * | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | C:l | Cr(Cr(VI)) | BL | / | / | | |
| 1.76 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | mean | DBP | N/A | 1/ | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | ٠ |
| | Cilvani | Cr(Cr(VI)) | BL | / | / | | |
| 1.77 | Silvery metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | * |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | 4. | Cd | BL | / | / | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | |
| | Silvery | Cr(Cr(VI)) | IN | / | N.D. [▼] | | |
| 1.78 | metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | metar | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | Cupreous | Cr(Cr(VI)) | BL | / | / | | |
| 1.79 | metal | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | inotai | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | * |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| | Golden metal | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | - | |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.80 | | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | Silvery metal | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.81 | | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | | DBP | N/A | / | / | | + |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | | |
| | Black body | Pb | OL | / | 19638#2 | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| 1.82 | | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | | DBP | N/A | BL | / | | |
| | | BBP | N/A | BL | / | | |
| | | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |
| 1.83 | Silvery metal pin | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | / | | Sep. 2, 2019 |
| | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | IN | / | N.D. [▼] | | |
| | | Br(PBBs&PBDEs) | N/A | / | / | PASS | |
| | | DBP | N/A | / | / | | |
| | | BBP | N/A | / | / | | |
| | | DEHP | N/A | / | / | | |
| | | DIBP | N/A | / | / | ~ | |



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| Sample No. | Sample Description | Tested Items | XRF Screening Test | Phthalates Screening Test | Chemical Test (mg/kg) | Conclusion | Sample Received/ Resubmitted Date |
|---------------|-----------------------|----------------|--------------------------|---------------------------------|-----------------------------|------------|--|
| 1.84-A | | Pb | / | / | 29 | | Aug. 15, 2019 |
| | | Cd | / | / | N.D. | | Sep. 18, 2019 |
| | | Hg | / | / | N.D. | | |
| | Silvery | Cr(Cr(VI)) | / | / | N.D. [▼] | | * |
| | soldering | Br(PBBs&PBDEs) | / | / | / | PASS | |
| | tin | DBP | / | / | / | | |
| | | BBP | / | / | / | | |
| | | DEHP | / | / | / | | |
| | | DIBP | / | / | / | | |
| | | Pb | BL | / | / | | Aug. 15, 2019 |
| | | Cd | BL | / | 1 | | |
| 1.85 | | Hg | BL | / | / | | |
| | | Cr(Cr(VI)) | BL | / | / | | |
| | PCB | Br(PBBs&PBDEs) | IN | / | N.D. | PASS | |
| | | DBP | N/A | BL | / | | - |
| | | BBP | N/A | BL | / | | |
| | © . | DEHP | N/A | BL | / | | |
| | | DIBP | N/A | BL | / | | |



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Remark:

- N.D. = Not Detected (<MDL or LOQ)
- MDL = Method Detection Limit
- mg/kg = ppm = parts per million
- 1000 mg/kg = 0.1%
- /=Not tested
- IN= Uncertain, Further chemical test
- N/A= Not applicable
- BL = Under the screening limit
- OL = Further chemical test will be conducted while the result is above the screening limit.
- The sample is negative for Cr(VI) − The Cr(VI) concentration is below 0.10μg/cm². The coating is considered a non-Cr(VI) based coating.
- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.
- The sample with A in 'Sample No.' is the improved one instead of the original submitted sample.
- #1According to the client's statement, the material of the sample(s) fall into exemption items 6(c) according to EU Directive 2011/65/EU: Copper alloy containing up to 4 % lead by weight.
- #2According to the client's statement, the material of the sample(s) fall into exemption items 7(c)-I according to EU Directive 2011/65/EU: 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.
 - ^{#3}According to the client's statement, the material of the sample(s) fall into exemption items 8(b) according to EU Directive 2011/65/EU: Cadmium and its compounds in electrical contacts.
- According to the client's statement, the sample material reference information see table:

| | 2 Sub-administration (Sub-administration) (Sub-administration) |
|------------|--|
| Sample No. | Sample No. in this Report |
| 1.9 | 1.8 |
| 1.10 | 1.8 |
| 1.11 | 1.8 |
| 1.20 | 1.19 |
| 1.22 | 1.21 |
| 1.23 | 1.19 |
| 1.25 | 1.19 |
| 1.26 | 1.19 |
| 1.27 | 1.19 |
| 1.28 | 1.19 |
| 1.29 | 1.19 |
| 1.30 | 1.12 |
| 1.33 | 1.19 |
| 1.34 | 1.19 |
| 1.41 | 1.39 |
| | • |



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| Sample No. | Sample No. in this Report |
|------------|---------------------------|
| 1.42 | 1.39 |
| 1.43 | 1.39 |
| 1.44 | 1.39 |
| 1.48 | 1.47 |
| 1.68 | 1.67 |
| 1.77 | 1.76 |



Report No.

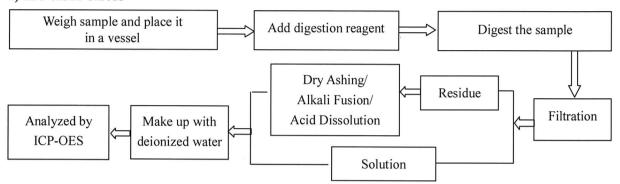
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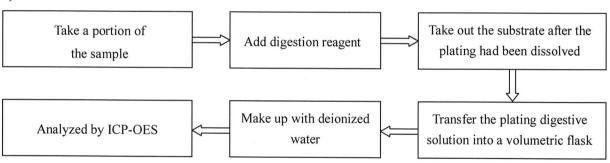
Test Process

1. Lead (Pb), Cadmium (Cd)

1) IEC 62321-5:2013

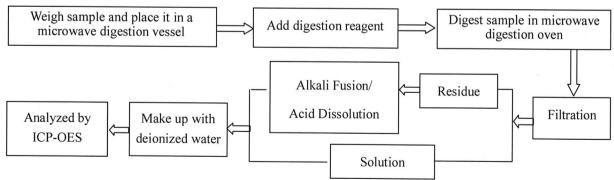


2) Refer to IEC 62321-5:2013

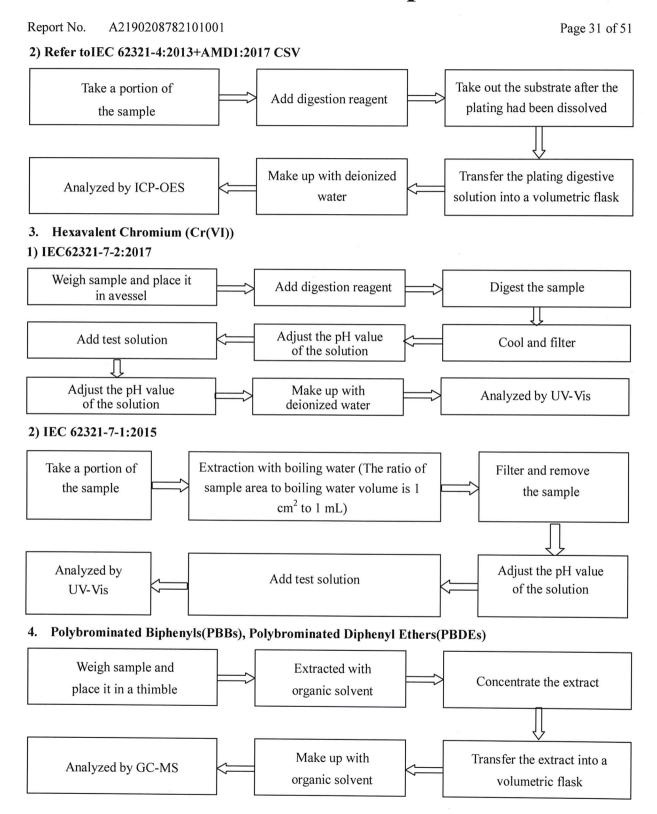


2. Mercury (Hg)

1) IEC 62321-4:2013+AMD1:2017 CSV





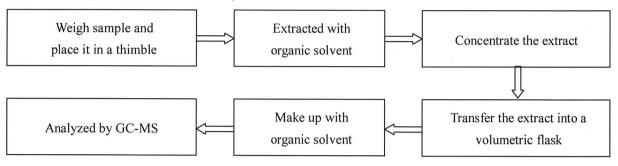




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5. Phthalates(DBP, BBP, DEHP, DIBP)



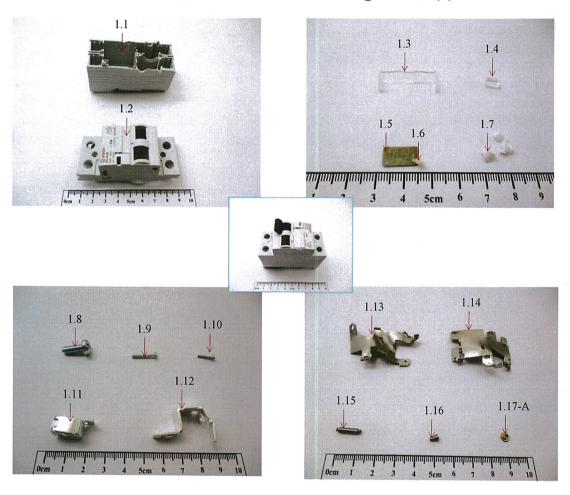


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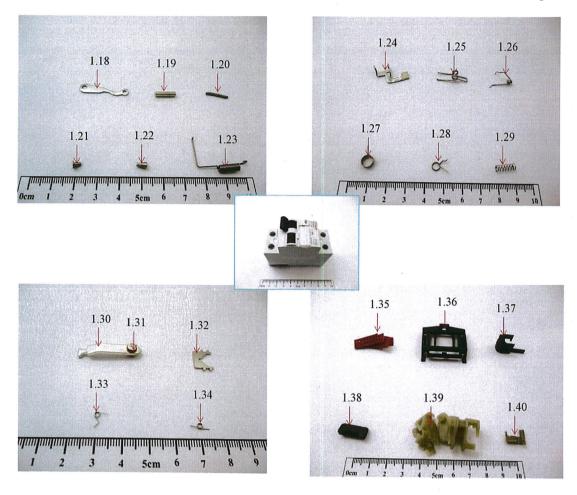
Photo(s) of the tested component(s)





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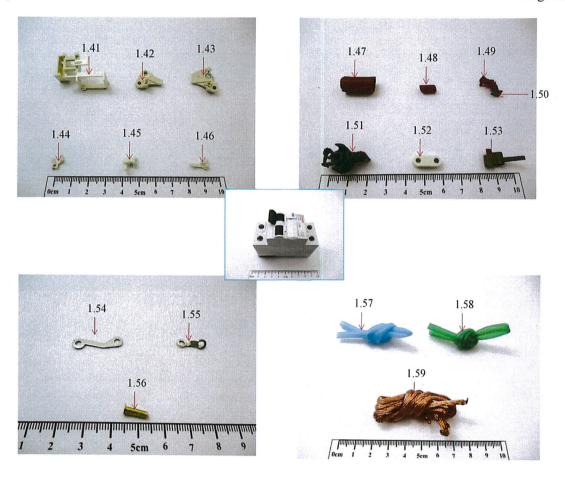
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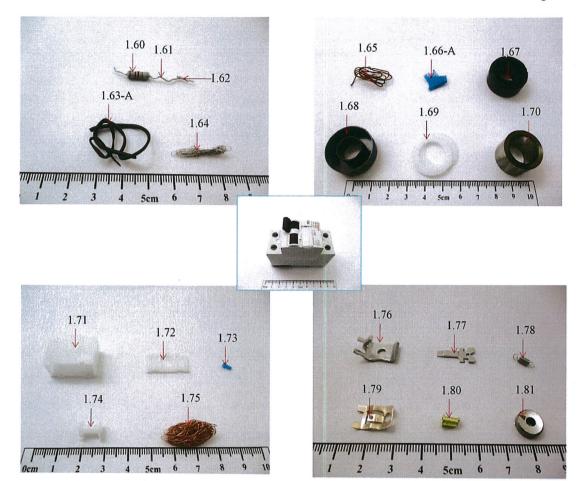
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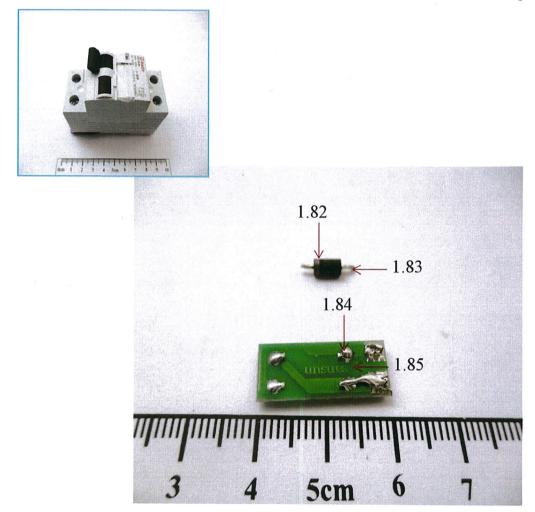
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Exempted Items of RoHS Directive

In accordance with Directive 2011/65/EU as amended, there are 42 exemption items in Annex III of 2011/65/EU altogether.

| | Exemption | Scope and dates of applicability |
|---------|---|--|
| 1 | Mercury in single capped (compact) fluorescent | |
| | lamps not exceeding (per burner): | |
| 1(a) | For general lighting purposes < 30 W: 5 mg | Expires on 31 December 2011; 3,5 mg may |
| | | be used per burner after 31 December 2011 |
| | | until31 December 2012; 2,5 mg shall be used |
| | | per burner after 31 December 2012 |
| 1(b) | For general lighting purposes ≥ 30 W and < | Expires on 31 December 2011; 3,5 mg may |
| | 50 W: 5 mg | be used per burner after 31 December 2011 |
| 1(c) | For general lighting purposes ≥ 50 W and < | |
| | 150 W: 5 mg | |
| 1(d) | For general lighting purposes ≥ 150 W: 15 mg | |
| 1(e) | For general lighting purposes with circular or | No limitation of use until 31 December 2011; |
| | square structural shape and tube diameter \leq | 7 mg may be used per burner after 31 |
| | 17 mm | December 2011 |
| 1(f) | For special purposes: 5 mg | |
| 1(g) | For general lighting purposes < 30 W with a | Expires on 31 December 2017 |
| | lifetime equal or above 20 000 h: 3,5 mg | |
| 2(a) | Mercury in double-capped linear fluorescent | |
| | lamps for general lighting purposes not | |
| | exceeding (per lamp): | |
| 2(a)(1) | Tri-band phosphor with normal lifetime and a | Expires on 31 December 2011; 4 mg may be |
| | tube diameter < 9 mm (e.g. T2): 5 mg | used per lamp after 31 December 2011 |
| 2(a)(2) | Tri-band phosphor with normal lifetime and a | Expires on 31 December 2011; 3 mg may be |
| | tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 5 | used per lamp after 31 December 2011 |
| | mg | |
| 2(a)(3) | Tri-band phosphor with normal lifetime and a | Expires on 31 December 2011; 3,5 mg may |
| | tube diameter > 17 mm and ≤ 28 mm (e.g. T8): | be used per lamp after 31 December 2011 |
| | 5 mg | |
| 2(a)(4) | Tri-band phosphor with normal lifetime and a | Expires on 31 December 2012; 3,5 mg may |
| | tube diameter > 28 mm (e.g. T12): 5 mg | be used per lamp after 31 December 2012 |
| 2(a)(5) | Tri-band phosphor with long lifetime (≥ | Expires on 31 December 2011; 5 mg may be |
| | 25 000 h): 8 mg | used per lamp after 31 December 2011 |
| 2(b) | Mercury in other fluorescent lamps not | |
| | exceeding (per lamp): | |



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| | Exemption | Scope and dates of applicability |
|----------|--|--|
| 2(b)(1) | Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg | Expires on 13 April 2012 |
| 2(b)(2) | Non-linear halophosphate lamps (all diameters): | Evnivos on 12 April 2016 |
| 2(0)(2) | 15 mg | Expires on 13 April 2016 |
| 2(b)(3) | Non-linear tri-band phosphor lamps with tube | No limitation of use until 31 December 2011; |
| | diameter > 17 mm (e.g. T9) | 15 mg may be used per lamp after 31 |
| | | December 2011 |
| 2(b)(4) | Lamps for other general lighting and special | No limitation of use until 31 December 2011; |
| | purposes (e.g. induction lamps) | 15 mg may be used per lamp after 31 |
| | | December 2011 |
| 3 | Mercury in cold cathode fluorescent lamps and | , |
| | external electrode fluorescent lamps (CCFL and | |
| | EEFL) for special purposes not exceeding (per | |
| | lamp): | * |
| 3(a) | Short length (≤ 500 mm) | No limitation of use until 31 December 2011; |
| | | 3,5 mg may be used per lamp after 31 |
| | | December 2011 |
| 3(b) | Medium length (> 500 mm and ≤ 1 500 mm) | No limitation of use until 31 December 2011; |
| | | 5 mg may be used per lamp after 31 |
| | | December 2011 |
| 3(c) | Long length (> 1 500 mm) | No limitation of use until 31 December 2011; |
| | | 13 mg may be used per lamp after 31 |
| | | December 2011 |
| 4(a) | Mercury in other low pressure discharge lamps | No limitation of use until 31 December 2011; |
| | (per lamp) | 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 | $P \le 155 \text{ W}$ | No limitation of use until 31 December 2011; |
| | | 30 mg may be used per burner after 31 |
| | | December 2011 |
| 4(b)-II | 155 W < P ≤ 405 W | No limitation of use until 31 December 2011; |
| | | 40 mg may be used per burner after 31 |
| , | | December 2011 |
| 4(b)-III | P > 405 W | No limitation of use until 31 December 2011; |
| | | 40 mg may be used per burner after 31 |
| | · | December 2011 |



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| | Exemption | Scope and dates of applicability |
|----------|---|--|
| 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; |
| | | 25 mg 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; |
| | | 30 mg may be used per burner after 31 |
| | | December 2011 |
| 4(c)-III | P > 405 W | No limitation of use until 31 December 2011; |
| | | 40 mg may be used per burner after 31 |
| | | December 2011 |
| 4(d) | Mercury in High Pressure Mercury (vapour) | Expires on 13 April 2015 |
| | lamps (HPMV) | |
| 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 | Expires on 31 December 2018 |
| | 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 notmore than 80 mg, for | |
| | outdoor applications and indoor | |
| | applications exposed to temperatures | |
| | below 20 °C; | |
| | (b) 15 mg perelectrode pair + 0,24 mg per tube | |
| | length in cm, but not more than 80 mg, for | |
| | all other indoor applications. | |
| 5(a) | Lead in glass of cathode ray tubes | |
| 5(b) | Lead in glass of fluorescent tubes not | |
| | exceeding 0,2 % by weight | |



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| | Exemption | Scope and dates of applicability |
|---------|---|--|
| 6(a) | Lead as an alloying element in steel for | Expires on: |
| | machining purposes and in galvanised steel | -21 July 2021 for categories 8 and 9 other |
| | containing up to 0,35 % lead by weight | 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 | Expires on 21 July 2021 for categories 1-7 |
| | machining purposes containing up to 0,35 % lead | and 10. |
| | by weight and in batch hot dip galvanised steel | |
| | components containing up to 0,2 % lead by | |
| | weight | |
| 6(b) | Lead as an alloying element in aluminium | Expires on: |
| | containing up to 0,4 % lead by weight | -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(b)-I | Lead as an alloying element in aluminium | Expires on 21 July 2021 for categories 1-7 |
| | containing up to 0,4 % lead by weight, provided | and 10. |
| | it stems from lead-bearing aluminium scrap | |
| | recycling | |
| 6(b)-II | Lead as an alloying element in aluminium for | Expires on 18 May 2021 for categories 1-7 |
| | machining purposes with a lead content up to | and 10. |
| | 0,4 % by weight | |



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| | Exemption | Scope and dates of applicability |
|--------|---|--|
| 6(c) | Copper alloy containing up to 4 % lead by | Expires on: |
| | weight | -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. |
| 7(a) | Lead in high melting temperature type solders | Applies to categories 1-7 and 10 (except |
| . , | (i.e. lead-based alloys containing 85 % by weight | applications covered by point 24 of this |
| | or more lead) | Annex) 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(b) | Lead in solders for servers, storage and storage | onphies on 21 tuly 2021. |
| . , | array systems, network infrastructure | |
| | equipment for switching, signalling, | |
| | transmission, and network management | |
| | for telecommunications | |
| 7(c)-I | Electrical and electronic components containing | Applies to categories 1-7 and 10 (except |
| . , | lead in a glass or ceramic other than dielectric | applications covered under point 34) and |
| | ceramic in capacitors, e.g. piezoelectronic | expires on 21 July 2021. |
| | devices, or in a glass or ceramic matrix | For categories 8 and 9 other than in vitro |
| | compound | 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. |



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| | Exemption | Scope and dates of applicability |
|----------|---|--|
| 7(c)-II | Lead in dielectric ceramic in capacitors for a | Does not apply to applications covered by |
| | rated voltage of 125 V AC or 250 V DC or | point 7(c)-I and 7(c)-IV of this Annex. |
| | higher | 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 |
| 7(c)-III | Lead in dielectric ceramic in capacitors for a | Expires on 1 January 2013 and after that date |
| | rated voltage of less than 125 V AC or 250 V DC | 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 | -21 July 2021 for categories 1-7 and 10; |
| | for capacitors which are part of integrated | -21 July 2021 for categories 8 and 9 other |
| | circuits or discrete semiconductors | 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 |
| 8(a) | Cadmium and its compounds in one shot pellet | Expires on 1 January 2012 and after that date |
| | type thermal cut-offs | may be used in spare parts for EEE placed on |
| | | the market before 1 January 2012 |
| 8(b) | Cadmium and its compounds in electrical | Applies to categories 8, 9 and 11 and expires |
| | contacts | 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 |



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| | Exemption | Scope and dates of applicability |
|----------|--|--|
| 8(b)-I | Cadmium and its compounds in electrical | Applies to categories 1 to 7 and 10 and |
| | contacts used in: | expires on 21 July 2021 |
| | -circuit breakers, | |
| | -thermal sensing controls, | |
| | -thermal motor protectors (excluding hermetic | |
| | thermal motor protectors), | |
| | -AC switches rated at: | ν. |
| | -6 A and more at 250 V AC and more, or | |
| | -12 A and more at 125 V AC and more, | |
| | -DC switches rated at 20 A and more at 18 V DC | |
| | and more, and | |
| | -switches for use at voltage supply frequency ≥ | |
| | 200 Hz | |
| 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 | Applies to categories 8, 9 and 11; expires on: |
| | refrigerant-containing compressors for heating, | -21 July 2023 for category 8 in vitro |
| | ventilation, air conditioning and refrigeration | diagnostic medical devices, |
| | (HVACR) applications | -21 July 2024 for category 9 industrial |
| | | monitoring and control instruments and for |
| | | category 11, |
| | | -21 July 2021 for other subcategories of |
| | * | categories 8 and 9. |
| 9(b)-(I) | Lead in bearing shells and bushes for refrigerant- | Applies to category 1; expires on 21 July |
| | containing hermetic scroll compressors with a | 2019. |
| | stated electrical power input equal or below 9 | |
| | kW for heating, ventilation, air conditioning and | |
| | refrigeration (HVACR) applications | |
| 11(a) | Lead used in C-press compliant pin connector | May be used in spare parts for EEE placed on |
| | systems C-press | the market before 24 September 2010 |
| 11(b) | Lead used in other than C-press compliant pin | Expires on 1 January 2013 and after that date |
| | connector systems | 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 | May be used in spare parts for EEE placed on |
| | conduction module C-ring | the market before 24 September 2010 |



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| | Exemption | Scope and dates of applicability |
|------------|--|--|
| 13(a) | Lead in white glasses used for optical | Applies to all categories; expires on: |
| | applications | -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; |
| | | -21 July 2021 for all other categories and |
| | | subcategories |
| 13(b) | Cadmium and lead in filter glasses and glasses | Applies to categories 8, 9 and 11; expires on: |
| | used for reflectance standards | -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; |
| | | -21 July 2021 for other subcategories of |
| | | categories 8 and 9 |
| 13(b)-I | Lead in ion coloured optical filter glass types | |
| 13(b)-II | Cadmium in striking optical filter glass types; | Applies to categories 1 to 7 and 10; |
| | excluding applications falling under point 39 of | expires on 21 July 2021 for categories 1 to |
| | this Annex | 7 and 10 |
| 13(b)-III | Cadmium and lead in glazes used for reflectance | |
| Total Inc. | standards | |
| 14 | Lead in solders consisting of more than two | Expired on 1 January 2011 and after that date |
| | elements for the connection between the pins and | may be used in spare parts for EEE placed on |
| | the package of microprocessors with a lead | the market before 1 January 2011 |
| | content of more than 80 % and less than 85 % by | |
| 1.5 | weight | |
| 15 | Lead in solders to complete a viable electrical | Applies to categories 8, 9 and 11 and expires |
| | connection between semiconductor die and | on: |
| | carrier within integrated circuit flip chip | -21 July 2021 for categories 8 and 9 other |
| | packages | 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 |



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| | Exemption | Scope and dates of applicability |
|---------|---|--|
| 15(a) | Lead in solders to complete a viable electrical | Applies to categories 1 to 7 and 10 and |
| | connection between the semiconductor die and | expires on 21 July 2021 |
| | carrier within integrated circuit flip chip | |
| | packages where at least one of the following | |
| | criteria applies: | |
| | -a semiconductor technology node of 90 nm or | , |
| | larger; | |
| | -a single die of 300 mm ² or larger in any | |
| | semiconductor technology node; | |
| | -stacked die packages with die of 300 mm ² or | |
| | larger, or silicon interposers of 300 mm ² or larger | |
| 16 | Lead in linear incandescent lamps with silicate | Expires on 1 September 2013 |
| | coated tubes | |
| 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 % | Expired on 1 January 2011 |
| | 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)2MgSi2O7:Pb) | |
| 18(b) | Lead as activator in the fluorescent powder (1 % | -21 July 2021 for categories 1-7 and 10; |
| | lead by weight or less) of discharge lamps when | -21 July 2021 for categories 8 and 9 other |
| | used as sun tanning lamps containing phosphors | than in vitro diagnostic medical devices and |
| | such as BSP (BaSi2O5:Pb) | 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 |
| 18(b)-I | Lead as activator in the fluorescent powder (1 % | Applies to categories 5 and 8, excluding |
| | lead by weight or less) of discharge lamps | applications covered by entry 34 of Annex |
| | containing phosphors such as BSP (BaSi2O5:Pb) | IV, and expires on 21 July 2021 |
| | when used in medical phototherapy equipment | |
| 19 | Lead with PbBiSn-Hg and PbInSn-Hg in specific | Expires on 1 June 2011 |
| | compositions as main amalgam and with | |
| | PbSn-Hg as auxiliary amalgam in very compact | |
| | energy saving lamps (ESL) | |



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| | Exemption | Scope and dates of applicability |
|-------|--|---|
| 20 | Lead oxide in glass used for bonding front and | Expires on 1 June 2011 |
| | rear substrates of flat fluorescent lamps used for | |
| | Liquid Crystal Displays (LCDs) | |
| 21 | Lead and cadmium in printing inks for the | Applies to categories 8, 9 and 11 and expires |
| | application of enamels on glasses, such as | on: |
| | borosilicate and soda lime glasses | -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 |
| 21(a) | Cadmium when used in colour printed glass to | Applies to categories 1 to 7 and 10 except |
| | provide filtering functions, used as a component | applications covered by entry 21(b) or entry |
| | in lighting applications installed in displays and | 39 and expires on 21 July 2021 |
| | control panels of EEE | |
| 21(b) | Cadmium in printing inks for the application of | Applies to categories 1 to 7 and 10 except |
| | enamels on glasses, such as borosilicate and soda | applications covered by entry 21(a) or 39 and |
| | lime glasses | expires on 21 July 2021 |
| 21(c) | Lead in printing inks for the application of | Applies to categories 1 to 7 and 10 and |
| | enamels on other than borosilicate glasses | expires on 21 July 2021 |
| 23 | Lead in finishes of fine pitch components other | May be used in spare parts for EEE placed on |
| | than connectors with a pitch of 0,65 mm and less | the market before 24 September 2010 |
| 24 | Lead in solders for the soldering to machined | Expires on: |
| | through hole discoidal and planar array ceramic | -21 July 2021 for categories 1-7 and 10, |
| | multilayer capacitors | -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 | Expires on 1 June 2011 |
| | blue lamps | |



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| | Exemption | Scope and dates of applicability |
|----|---|--|
| 27 | Lead alloys as solder for transducers used in | Expired on 24 September 2010 |
| | high-powered (designated to operate for several | |
| | hours at acoustic power levels of 125 dB SPL | y . |
| | and above) loudspeakers | |
| 29 | Lead bound in crystal glass as defined in Annex I | -21 July 2021 for categories 1-7 and 10; |
| | (Categories 1, 2, 3 and 4) of Council Directive | -21 July 2021 for categories 8 and 9 other |
| | 69/493/EEC | 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 |
| 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 | -21 July 2021 for categories 1-7 and 10, |
| | assemblies for Argon and Krypton laser tubes | -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 |
| 33 | Lead in solders for the soldering of thin copper | |
| | wires of 100 µm diameter and less in power trans | |
| | formers | |



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| | Exemption | Scope and dates of applicability |
|-------|--|--|
| 34 | Lead in cermet-based trimmer potentiometer | Applies to all categories; expires on: |
| | elements | -21 July 2021 for categories 1-7 and 10, |
| | | -21 July 2021 for categories 8 and 9 other |
| | The state of the s | 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. |
| 36 | Mercury used as a cathode sputtering inhibitor in | Expired on 1 July 2010 |
| | DC plasma displays with a content up to 30 mg | |
| | per display | |
| 37 | Lead in the plating layer of high voltage diodes | -21 July 2021 for categories 1-7 and 10; |
| | on the basis of a zinc borate glass body | -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 |
| 38 | Cadmium and cadmium oxide in thick film | |
| | pastes used on aluminium bonded beryllium | |
| | oxide | |
| 39(a) | Cadmium selenide in downshifting | -Expires for all categories on 31 October |
| | cadmium-based semiconductor nanocrystal | 2019 |
| | quantum dots for use in display lighting | |
| | applications (< 0,2 μg Cd per mm ² of display | - |
| | screen area) | |
| 40 | Cadmium in photoresistors for analogue | Expires on 31 December 2013 |
| | optocouplers applied in professional audio | |
| | equipment | |



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| | Exemption | Scope and dates of applicability |
|----|--|--|
| 41 | Lead in solders and termination finishes of | Expires on 31 December 2018 |
| | 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 | |
| | (2)) | |
| 42 | Lead in bearings and bushes of diesel or gaseous | Applies to category 11, excluding |
| | fuel powered internal combustion engines | applications covered by entry 6(c) of this |
| | applied in non-road professional use equipment: | Annex. |
| | -with engine total displacement ≥ 15 litres; or | Expires on 21 July 2024 |
| | -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 | |

*** End of Report ***

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