

Client Name: FuYanSheng Electronic (FuJian) Co., Ltd.

Client Address: 009, Area A1, Building 1, Science and Technology Innovation Center, National University Science and Technology Park, No. 6 Qiuyang East Road, Shangjie Town, Minhou County, Fujian Province, China

Sample Name: led lighting
 Tested Basic Model No.: MLAL-27-SDD
 Client Ref. Information: MLAL-XX-XXX, MQAL-XX-XXX

The above sample(s) and information were provided by the client.

SGS Job No.: XMP24-002778
 Sample Receiving Date: Jun 19, 2024
 Verification Period: Jun 19, 2024 ~ Jul 18, 2024
 Verification Requested: With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.
 Verification Method(s): Please refer to next page(s).
 Verification Result(s): Please refer to next page(s).

Test Result Summary:

Test Items	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

Signed for and on behalf of
 SGS CSTC Standards Technical Services Co., Ltd. Xiamen Branch



Rae Chen
 Approved Signatory

scan to see the report



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Photo of Submitted Sample



Verification Method(s):

1. With reference to IEC 62321-2:2021, disassembly and disjointment were performed for the submitted samples.
2. With reference to IEC 62321-1:2013, tests were performed for the samples indicated by the photos in this report.
 - (1) With reference to IEC 62321-3-1:2013, screening by EDXRF spectroscopy.
 - (2) Wet chemical test method: With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-12:2023, IEC 62321-6:2015 and IEC62321-8:2017 , analyzed by ICP-OES,UV-Vis and GC-MS.



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Verification Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	XMN24-0011384-0001.C001	Translucent soft plastic shell
SN2	A2	XMN24-0011384-0001.C002	Black plastic shell
SN3	A3	XMN24-0011384-0001.C003	Black plastic part
SN4	A4	XMN24-0011384-0001.C004	Silvery metal part
SN5	A5	XMN24-0011384-0001.C005	Black plastic shell
SN6	A6	XMN24-0011384-0001.C006	Black soft plastic gasket
SN7	A7	XMN24-0011384-0001.C007	Black metal bolt
SN8	A8	XMN24-0011384-0001.C008	Green soft plastic gasket
SN9	A9	XMN24-0011384-0001.C009	Brown soft plastic wire insulation
SN10	A10	XMN24-0011384-0001.C010	Blue soft plastic wire insulation
SN11	A11	XMN24-0011384-0001.C011	Transparent glass w/ black printing
SN12	A12	XMN24-0011384-0001.C012	Silvery metal shell
SN13	A13	XMN24-0011384-0001.C013	White double side adhesive tape
SN14	A14	XMN24-0011384-0001.C014	Transparent soft plastic sheet
SN15	A15	XMN24-0011384-0001.C015	Translucent soft plastic sheet
SN16	A16	XMN24-0011384-0001.C016	Silvery metal bolt
SN17	A17	XMN24-0011384-0001.C017	Grey plastic shell
SN18	A18	XMN24-0011384-0001.C018	Yellow "LED" (body)
SN19	A19	XMN24-0011384-0001.C019	Black body
SN20	A20	XMN24-0011384-0001.C020	Dk-brown body
SN21	A21	XMN24-0011384-0001.C021	White "PCB"
SN22	A22	XMN24-0011384-0001.C022	Black body
SN23	A23	XMN24-0011384-0001.C023	Silvery metal solder
SN24	A24	XMN24-0011384-0001.C024	Black body



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Verification Result(s):

Unless otherwise specified, the unit is mg/kg.

Test Item(s)	A1	A2	A3	A4	A5	A6	A7	A8
Pb	BL	BL	BL	<40000▲	BL	BL	BL	BL
Hg	BL	BL	BL	BL	BL	BL	BL	BL
Cd	BL	BL	23	BL	BL	BL	BL	BL
Cr(VI)▼	BL	BL	BL	BL	BL	BL	ND	BL
PBBs	BL	BL	ND	---	BL	BL	---	BL
PBDEs	BL	BL	ND	---	BL	BL	---	BL
DEHP	ND	BL	ND	---	BL	ND	---	ND
BBP	ND	BL	ND	---	BL	ND	---	ND
DBP	ND	BL	ND	---	BL	ND	---	ND
DIBP	ND	BL	ND	---	BL	ND	---	ND
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A9	A10	A11	A12	A13	A14	A15	A16
Pb	BL	BL	BL	BL	BL	BL	BL	BL
Hg	BL	BL	BL	BL	BL	BL	BL	BL
Cd	BL	BL	BL	BL	BL	BL	BL	BL
Cr(VI)▼	BL	BL	BL	BL	BL	BL	BL	ND
PBBs	BL	BL	BL	---	BL	BL	BL	---
PBDEs	BL	BL	BL	---	BL	BL	BL	---
DEHP	ND	ND	---	---	ND	ND	ND	---
BBP	ND	ND	---	---	ND	ND	ND	---
DBP	ND	ND	---	---	ND	ND	ND	---
DIBP	ND	ND	---	---	ND	ND	ND	---
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A17	A18	A19	A20	A21	A22	A23	A24
Pb	BL	BL	21253▲	BL	BL	BL	BL	BL
Hg	BL	BL	BL	BL	BL	BL	BL	BL
Cd	BL	BL	BL	BL	BL	BL	BL	BL
Cr(VI)▼	BL	BL	BL	ND	BL	BL	BL	BL
PBBs	BL	BL	BL	BL	ND	BL	---	BL
PBDEs	BL	BL	BL	BL	ND	BL	---	BL
DEHP	BL	ND	ND	ND	ND	ND	---	ND
BBP	BL	ND	ND	ND	ND	ND	---	ND
DBP	BL	ND	ND	ND	ND	ND	---	ND
DIBP	BL	ND	ND	ND	ND	ND	---	ND
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS



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Notes:

- (1) Interpretation of screening results by X-ray fluorescence spectrometry (XRF):
 (a) Screening limits in mg/kg for regulated elements in various matrices according to IEC 62321-1:2013 Annex A as below table.

Element	Polymers	Metals	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	Not applicable	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

- (b) If the maximum allowed level restricts PBB/PBDE and Cr(VI) rather than Br and Cr, the exceptions are the XRF determinations of Br and Cr. If the quantitative results for the elements Br and/or Cr are higher than the limit (for Br calculated based on the stoichiometry of Br in the most common congeners of PBB/PBDE), the sample is "inconclusive".
- (c) Results are obtained by EDXRF for primary screening, LOD = Limit of Detection, BL = Below Limit, OL= Over Limit, IN (The symbol X marks the region)=Inconclusive, where further investigation is necessary, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBB/PBDE) are recommended to be performed.
- (d) The EDXRF screening test for elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- (2) Screening results of Phthalates (PHTH) below the limits are shown as "BL". Further chemical testing by GC-MS is to be performed if the results exceed limits.

Test Items	CAS No.
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7
Butyl benzyl phthalate (BBP)	85-68-7
Dibutyl phthalate (DBP)	84-74-2
Diisobutyl phthalate (DIBP)	84-69-5

- (3) Interpretation of results by chemical tests:
 (a) mg/kg = 0.0001%, MDL=Method detection Limit, ND = Not Detected (<MDL), --- = Not Applicable.
 (b) Unit and MDL in wet chemical test

Test Items	Pb	Hg	Cd	DEHP	BBP	DBP	DIBP
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBB and PBDE is 100 mg/kg,
 MDL of Cr(VI) for polymer, composite and leather sample is 10 mg/kg.
 MDL of Cr(VI) for metal sample is 0.10 µg/cm².

- (c) ▼ =Metal sample
- The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm². The sample coating is considered to contain Cr(VI).
 - The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-Cr(VI) based coating
 - The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive-unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus



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Cr(VI) results represent status of the sample at the time of testing.

- (4) Restricted substances and maximum concentration values tolerated by weight in homogeneous materials under RoHS Directive: Cd: 0.01%, Pb/Hg/Cr(VI)/PBB/PBDE/DEHP/BBP/DBP/DIBP: 0.1%. The limit is quoted from RoHS Directive (EU) 2015/863.
- (5) IEC 62321 series is equivalent to EN 62321 series.
- (6) ▲=According to the declaration from the client, Lead (Pb) in A4 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 6(c)]: Copper alloy containing up to 4 % lead by weight.
More information about exemption can be found via the following link:

[https://rohs.sgsonline.com.cn/PDFLinks/en/RSTS-TP-037%20RoHS%20Exemption%20\(EN\).pdf](https://rohs.sgsonline.com.cn/PDFLinks/en/RSTS-TP-037%20RoHS%20Exemption%20(EN).pdf)

- (7) ▲=According to the declaration from the client, Lead (Pb) in A19 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 7(a)]: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).
More information about exemption can be found via the following link:

<https://rohs.sgsonline.com.cn/PDFLinks/en/RSTS-TP-037%20RoHS%20Exemption%20%28EN%29.pdf>

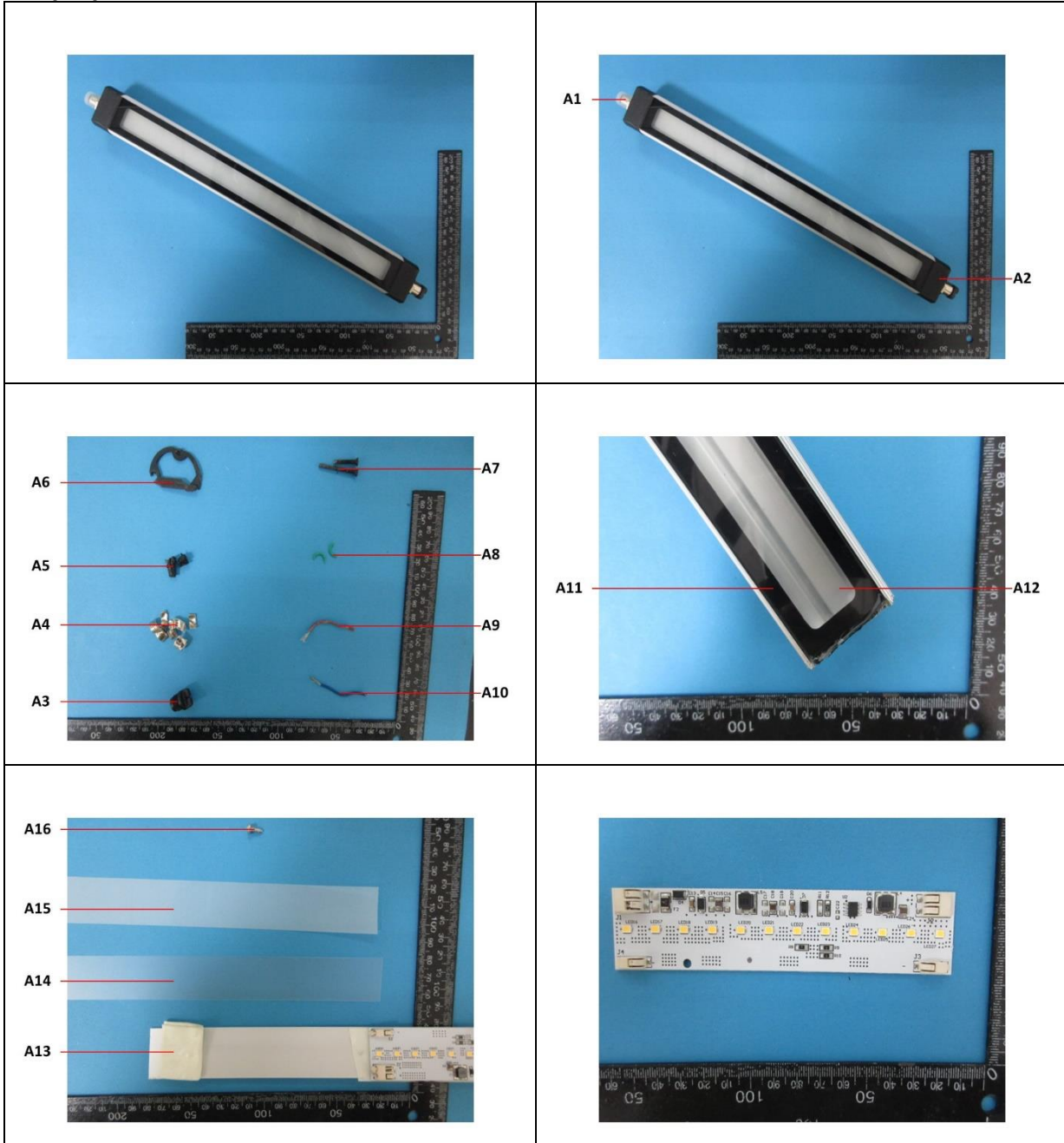
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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Sample photos:



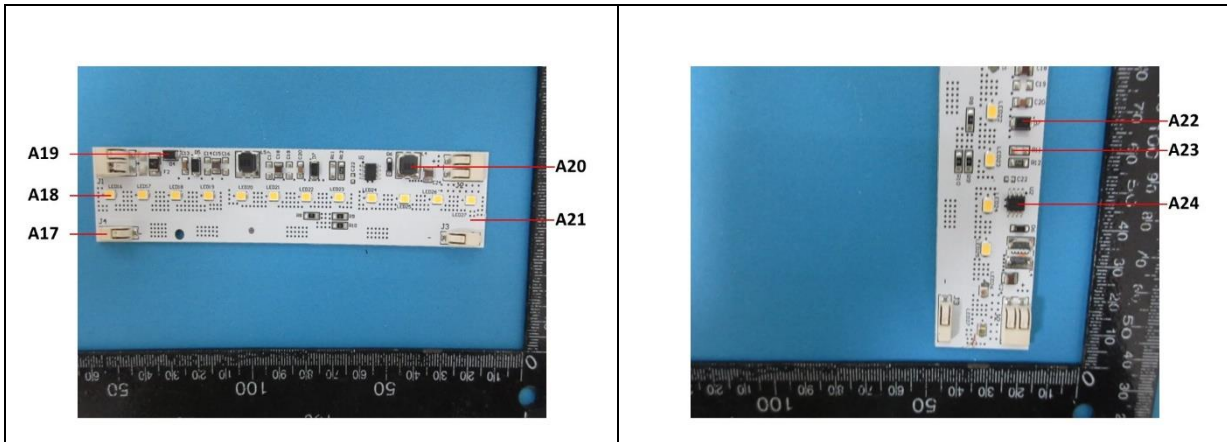
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