



Test Report

Report No: SHBST1711981300001YRR-4

Date: Nov.13, 2017

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Applicant : CIXI FARSTAR LIGHTING ELECTRIC CO., LTD.
Address : Yuanyi Road, Shigongshan Industrial Park, Longshan Town, Cixi City,
Zhejiang Province, China

The following sample(s) was /were submitted and identified on behalf of the clients as:

Sample Name : Fixed luminaires with lamps for outdoor use
Sample Model : HD4L, HD2L, HD5L
Sample Received Date : Nov.09, 2017
Testing Period : Nov.09, 2017 To Nov.13, 2017
Test Requested : Selected test (s) in the selected parts as requested by client with the RoHS Directive 2011/65/EU Annex II (EU) 2015/863 .
Test Method : Please refer to next page(s).
Test Result : Please refer to next page(s).

Signed for and on behalf of

Andy Zheng/ Technical Director

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Dongguan BST Testing Co., Ltd.

A1201-1204 Xinsanqi Of Dongbao Road, Dongcheng District, Tel:400-882-9628 Fax:86-769-23020106
Dongguan, Guangdong, China E-mail:christina@bst-lab.com Http://www.bst-lab.com Complaints hotline:86-755-26747756



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Test Content:

Test Item(s)	Test Method	Reference	Unit	Limit	MDL
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES	mg/kg	100	2
Lead(Pb)	IEC 62321-5:2013	ICP-OES	mg/kg	1000	2
Mercury(Hg)	IEC 62321-4:2013	ICP-OES	mg/kg	1000	2
Hexavalent Chromium(CrVI) (Metal)	IEC 62321-7-1:2015	UV-Vis	µg/cm ²	0.13	0.1
Hexavalent Chromium(CrVI) (Nonmetal)	IEC 62321-7-2:2017	UV-Vis	mg/kg	1000	8
PBBs (Next form)	IEC 62321-6:2015	GC-MS	mg/kg	1000	5
PBDEs (Next form)	IEC 62321-6:2015	GC-MS	mg/kg	1000	5
Dibutyl Phthalate(DBP)	IEC 62321-8:2017	GC-MS	mg/kg	1000	30
Butyl benzyl phthalate (BBP)	IEC 62321-8:2017	GC-MS	mg/kg	1000	30
Di-(2-ethylhexyl) Phthalate(DEHP)	IEC 62321-8:2017	GC-MS	mg/kg	1000	30
Diisobutyl phthalate (DIBP)	IEC 62321-8:2017	GC-MS	mg/kg	1000	30

PBBs		PBDEs	
Monobromobiphenyl	Hexabromobiphenyl	Monobromodiphenyl ether	Hexabromodiphenyl ether
Dibromobiphenyl	Heptabromobiphenyl	Dibromodiphenyl ether	Heptabromodiphenyl ether
Tribromobiphenyl	Octabromobiphenyl	Tribromodiphenyl ether	Octabromodiphenyl ether
Tetrabromobiphenyl	Nonabromobiphenyl	Tetrabromodiphenyl ether	Nonabromodiphenyl ether
Pentabromobiphenyl	Decabromobiphenyl	Pentabromodiphenyl ether	Decabromodiphenyl ether

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Sample Description:

No.	Description	Name
1	Plastic	Grey Shell
2	Plastic	Transparent Lampshade
3	Metal	Screw
4	Plastic	White Plastic
5	Plastic	Black Plastic
6	Plastic	Connector
7	Plastic	White Line Skin
8	Metal	Wire Core
9	Metal	Joint Metal
10	Metal	Safety Tube
11	Plastic	White Plastic
12	Plastic	Translucent Plastic Shell
13	PCB	PCB
14	LED	LED Light
15	Resistance	Resistance
16	Capacitance	Capacitance
17	IC	IC
18	Diode	Diode
19	Plastic	Bridge Pile
20	Metal	Transformer
21	Metal	PCB Solder

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Test Results:

Test Item(s)	No.1	No.2	No.3	No.4	No.5
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (CrVI)	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs	N.D.	N.D.	--	N.D.	N.D.
PBDEs	N.D.	N.D.	--	N.D.	N.D.
Dibutyl Phthalate (DBP)	N.D.	N.D.	--	N.D.	N.D.
Butyl benzyl phthalate (BBP)	N.D.	N.D.	--	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	--	N.D.	N.D.
Diisobutyl phthalate (DIBP)	N.D.	N.D.	--	N.D.	N.D.
Test Item(s)	No.6	No.7	No.8	No.9	No.10
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (CrVI)	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs	N.D.	N.D.	--	--	--
PBDEs	N.D.	N.D.	--	--	--
Dibutyl Phthalate (DBP)	N.D.	N.D.	--	--	--
Butyl benzyl phthalate (BBP)	N.D.	N.D.	--	--	--
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	--	--	--
Diisobutyl phthalate (DIBP)	N.D.	N.D.	--	--	--

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Test Item(s)	No.11	No.12	No.13	No.14	No.15
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (CrVI)	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs	N.D.	N.D.	N.D.	N.D.	N.D.
PBDEs	N.D.	N.D.	N.D.	N.D.	N.D.
Dibutyl Phthalate (DBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Butyl benzyl phthalate (BBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate (DIBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Test Item(s)	No.16	No.17	No.18	No.19	No.20
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (CrVI)	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs	N.D.	N.D.	N.D.	N.D.	--
PBDEs	N.D.	N.D.	N.D.	N.D.	--
Dibutyl Phthalate (DBP)	N.D.	N.D.	N.D.	N.D.	--
Butyl benzyl phthalate (BBP)	N.D.	N.D.	N.D.	N.D.	--
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	--
Diisobutyl phthalate (DIBP)	N.D.	N.D.	N.D.	N.D.	--

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Test Item(s)	No.21
Cadmium (Cd)	N.D.
Lead (Pb)	N.D.
Mercury (Hg)	N.D.
Hexavalent Chromium (CrVI)	N.D.
PBBs	--
PBDEs	--
Dibutyl Phthalate (DBP)	--
Butyl benzyl phthalate (BBP)	--
Di-(2-ethylhexyl) Phthalate(DEHP)	--
Diisobutyl phthalate (DIBP)	--

- Note:**
1. mg/kg= ppm
 2. N.D.= Not Detected(<MDL)
 3. MDL = Method Detection Limit
 4. -- = No Testing
 5. when Cr(VI) in a sample is detected below the $0.10 \mu\text{g}/\text{cm}^2$ LOQ (limit of quantification), the sample is considered to be negative for Cr(VI). Since Cr(VI) may not be uniformly distributed in the coating even within the same sample batch, a "grey zone" between $0.10 \mu\text{g}/\text{cm}^2$ and $0.13 \mu\text{g}/\text{cm}^2$ has been established as "inconclusive" to reduce inconsistent results due to unavoidable coating variations. In this case, additional testing may be necessary to confirm the presence of Cr(VI). When Cr(VI) is detected above $0.13 \mu\text{g}/\text{cm}^2$, the sample is considered to be positive for the presence of Cr(VI) in the coating layer. unavoidable coating variations may influence the determination Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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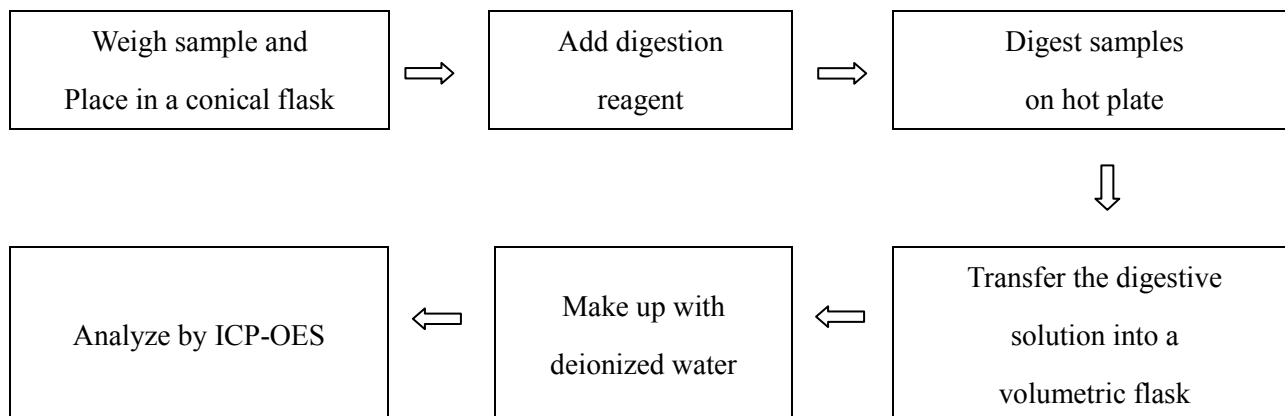
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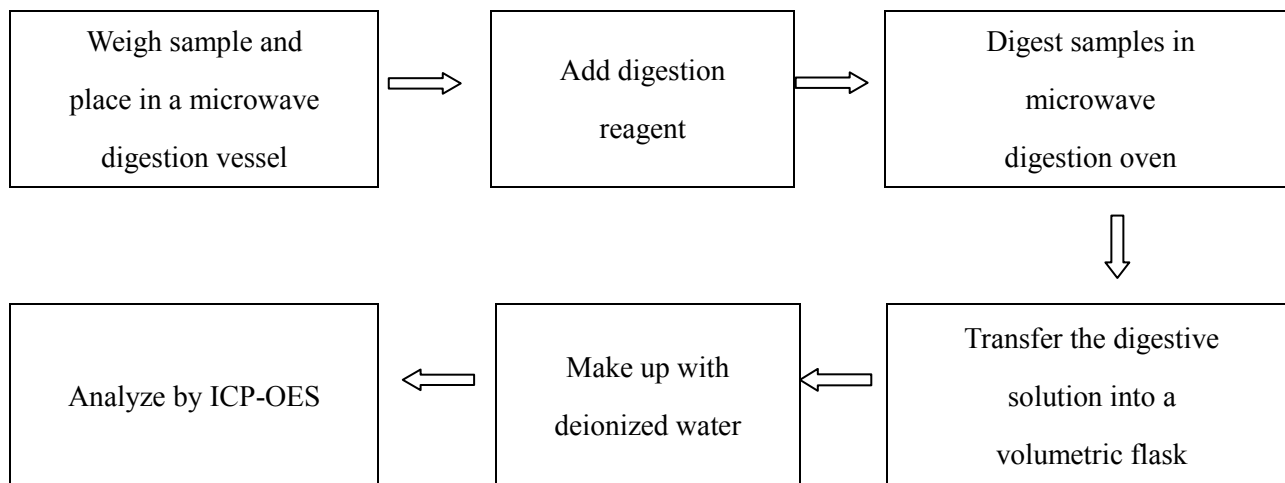
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Test Process:

1. Test for Cd/Pb Content



2. Test for Hg Content



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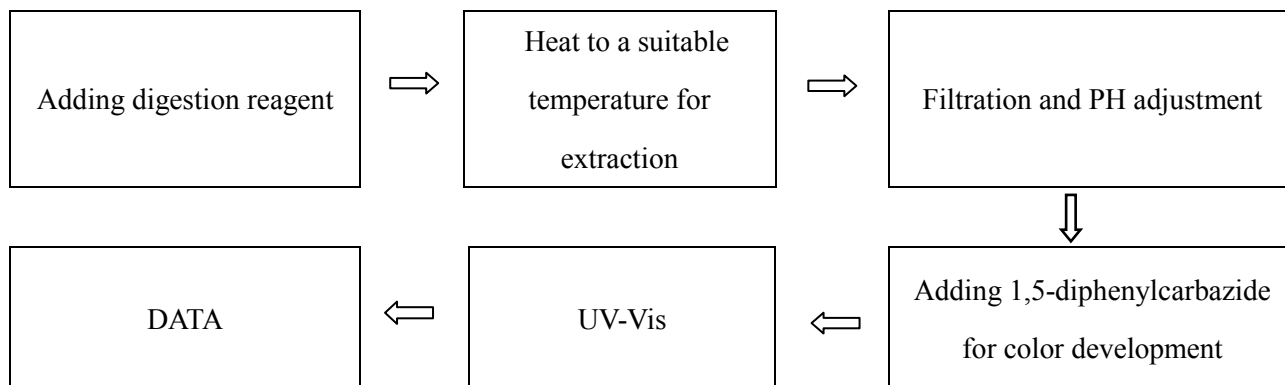
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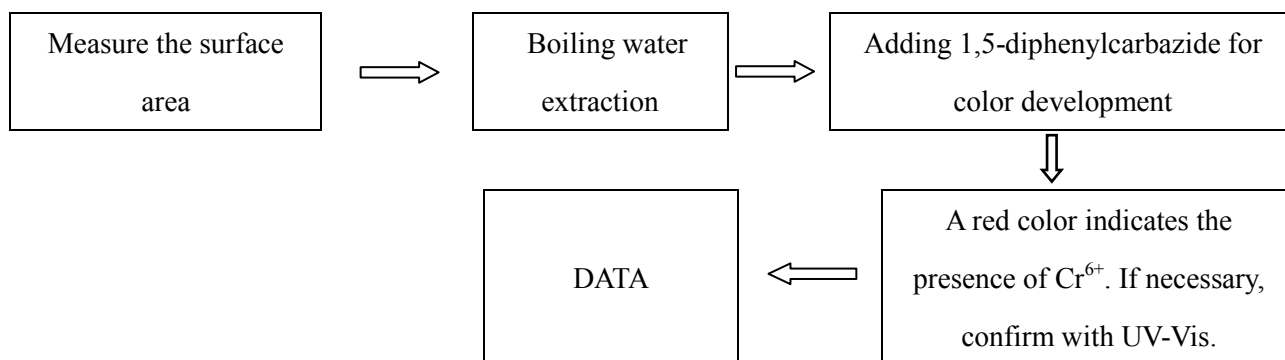
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3. Test for Chromium (VI) Content

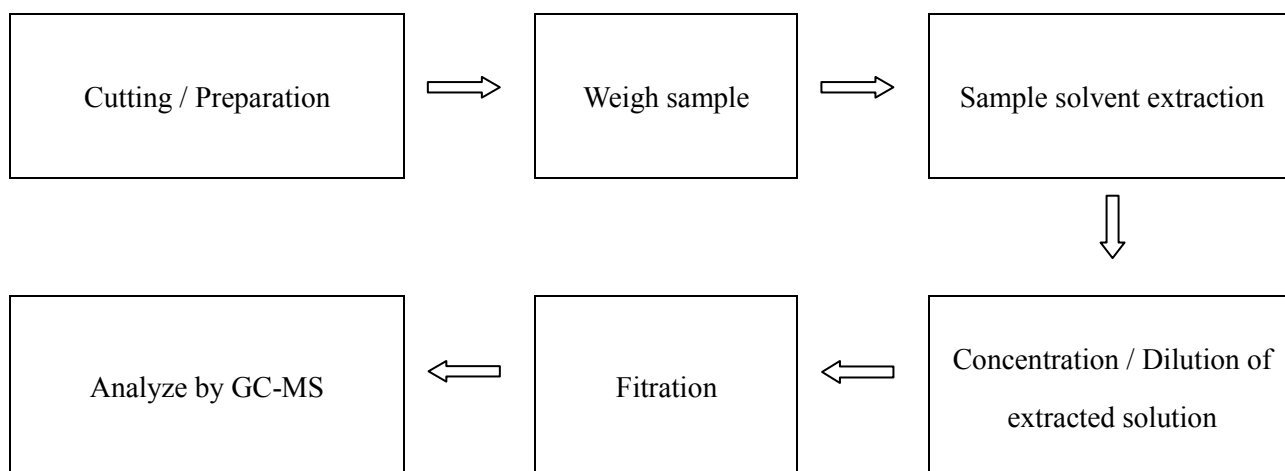
Nonmetal material



Metal material



4. Test for DBP, BBP, DEHP, DIBP, PBB, PBDE Content



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Sample Photo:



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Dongguan, Guangdong, China E-mail: christina@bst-lab.com Http://www.bst-lab.com Complaints hotline: 86-755-26747756