

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 1 of 13

Applicant : FOSHAN JIN HAOTAI LIGHTING ACCESSORIES CO., LTD
Address : Datong Industrial Zone, Qiaobai Road, Xiqiao Town, Nanhai District, Foshan City
Manufacturer : FOSHAN JIN HAOTAI LIGHTING ACCESSORIES CO., LTD
Address : Datong Industrial Zone, Qiaobai Road, Xiqiao Town, Nanhai District, Foshan City

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

Sample Name : Track lamp
Sample Model : 3-wired Track, length=1m, 1.5m, 2m, 3m
Sample Received Date : Jul. 22, 2023
Testing Period : Aug. 03, 2023 To Aug. 07, 2023
Test Requested : Selected test (s) in the selected parts as requested by client with the RoHS 2 Directive 2011/65/EU Annex II (EU) 2015/863 as last amended by Directive (EU) 2017/2102.
Test Method : 1. As specified by client, to screen Lead(Pb), Cadmium(Cd), Mercury(Hg), Chromium(Cr) and Bromine(Br) in the submitted sample(s) by XRF.
2. As specified by client, when screening results exceed the XRF screening limit in IEC 62321-3-1: 2013, further use of wet chemical methods are required to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP), and Diisobutyl phthalate (DIBP) in the submitted sample(s).
Test Result : Please refer to next page(s).
Conclusion : PASS (Based on test results)

Signed for and on behalf of



Tony Qian/Approved Signatory

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 2 of 13

Additional model:

2-wired Track, length=1m,1.5m,2 m,3m	2 wired power supply connector	2 wired end cap	2 wired "I" mini coupler
2 wired "L" coupler	2 wired "T" coupler	2 wired "X" coupler	2 wired flexible coupler
2 wired Adaptor	2 wired Electrical Box	2 wired Suspension Kit	3-wired Track, length=1m,1.5m, 2m, 3m
3 wired power supply connector	3 wired end cap	3 wired "I" mini coupler	3 wired "I" coupler
3 wired "L" coupler	3 wired "T" coupler	3 wired "X" coupler	3 wired flexible coupler
3 wired Adaptor	3 wired Electrical Box	3 wired Suspension Kit	4F-wired Track, length=1m,1.5m, 2m, 3m
4F wired power supply connector	4F wired end cap	4F wired "I" mini coupler	4F wired "I" coupler
4F wired "L" coupler	4F wired "T" coupler	4F wired "X" coupler	4F wired flexible coupler
4 wired Adaptor	4 wired Electrical Box	4 wired Suspension Kit	4Y-wired Track, length=1m, 1.5m, 2m, 3m
4Y wired power supply connector	4Y wired end cap	4Y wired "I" mini coupler	4Y wired "I" coupler
4Y wired "L" coupler	4Y wired "T" coupler	4Y wired "X" coupler	4Y wired flexible coupler
4Y wired Suspension Kit	2 Wires low voltage showcase Track	2 Wires low voltage Adaptor	2 Wires high voltage showcase Track

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengcheng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengcheng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 3 of 13

2 Wires high voltage Adaptor	3 Wires high voltage showcase Track	3 Wires high voltage Adaptor	Recessed Track Clip
Recessed 4FR wired Track, length=1m,1.5m,2m,3m	Recessed 4FR wired power supply connector	Recessed 4FR wired end cup	Recessed 4FR wired "I" coupler
Recessed 4FR wired "L" coupler	Recessed 4FR wired "T" coupler	Recessed 4FR wired "X" coupler	Recessed 3 wired Track, length=1m,1.5m,2m,3m
Recessed 3 wired power supply connector	Recessed 3 wired end cup	Recessed 3 wired "I" coupler	Recessed 3 wired "L" coupler
Recessed 3 wired "T" coupler	Recessed 3 wired "X" coupler	Recessed 2 wired Track, length=1m,1.5m,2m,3m	Recessed 2 wired power supply connector
Recessed 2 wired end cup	Recessed 2 wired "I" coupler	Recessed 2 wired "L" coupler	Recessed 2 wired "T" coupler
Recessed 2 wired "X" coupler	Multi-function Track, length=1m,1.5m,2m,3m	Multi-function Track power supply connector	Multi-function Track end cup
Multi-function Track "I" mini coupler	Multi-function Track "L" coupler	Multi-function Track "T" coupler	Multi-function Track "X" coupler
Multi-function Track Suspension Clamp	Die Casting Track Light Housing Kits	Cold Forging Track Light Housing Kits	Lathe Aluminium Track Light Housing Kits
Downlight Housing	Surfaced Magnetic Track Rail	Recessed Magnetic Track	Soft flexible connector

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengcheng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengcheng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 4 of 13

		Rail	
I Joint for Magnetic Track Rail	Magnetic Power Connector	Magnetic Adapter (Long style)	Magnetic Adapter (Short style)
Vertical L Connector --Surfaced	L Connector --Surfaced	Vertical L Connector --Recessed	L Connector --Recessed
Magnetic Track Light Housing	6-wired Track, length=1m, 1.5m, 2m, 3m	6 wired power supply connector	6 wired end cap
6 wired "I" mini coupler	6 wired "I" coupler	6 wired "L" coupler	6 wired "T" coupler
6 wired "X" coupler	6 wired flexible coupler	6 wired Adaptor	6 wired Electrical Box
6 wired Suspension Kit			

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com http://www.keys-lab.com

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 5 of 13

Sample Description:

No.	Name
1	White Metal Shell
2	Clear Plastic Cover
3	Black Screw
4	Ferrous Metal Track
5	Black Sheet Metal
6	Yellow Metal
7	Black Plastic
8	Silver Plastic Lampshade
9	Glass Lampshade
10	Silver Sheet
11	Yellow-Green Wire Leather
12	Wire Core
13	Aluminum Substrate
14	LED
15	Pin
16	PCB
17	Chip Capacitance
18	Patch Resistance
19	Rectifier Bridge
20	IC
21	Diode
22	Inductance
23	Fuse

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com http://www.keys-lab.com

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 6 of 13

1. XRF Test Result:

No.	XRF Result(mg/kg)					Chemical Test (mg/kg)	Conclusion
	Pb	Cd	Hg	Cr	Br		
1	BL	BL	BL	BL	--	--	Pass
2	BL	BL	BL	BL	BL	--	Pass
3	BL	BL	BL	BL	--	--	Pass
4	BL	BL	BL	BL	--	--	Pass
5	BL	BL	BL	BL	--	--	Pass
6	BL	BL	BL	BL	--	--	Pass
7	BL	BL	BL	BL	BL	--	Pass
8	BL	BL	BL	BL	BL	--	Pass
9	BL	BL	BL	BL	--	--	Pass
10	BL	BL	BL	BL	--	--	Pass
11	BL	BL	BL	BL	BL	--	Pass
12	BL	BL	BL	BL	--	--	Pass
13	BL	BL	BL	BL	--	--	Pass
14	BL	BL	BL	BL	BL	--	Pass
15	BL	BL	BL	BL	--	--	Pass
16	BL	BL	BL	BL	BL	--	Pass
17	BL	BL	BL	BL	--	--	Pass
18	BL	BL	BL	BL	--	--	Pass
19	BL	BL	BL	BL	--	--	Pass
20	BL	BL	BL	BL	--	--	Pass
21	BL	BL	BL	BL	--	--	Pass
22	BL	BL	BL	BL	--	--	Pass
23	BL	BL	BL	BL	--	--	Pass

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengpeng,
Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengpeng,
Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 7 of 13

Remark:

1. It is the result on total Br while test item on restricted substances in PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).

2. Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1: 2013 Annex A.

Element	Polymer Material	Metallic Material	Composite Material
Pb	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma \leq X < 1500 + 3\sigma \leq OL$
Cd	$BL \leq 70 - 3\sigma \leq X < 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma \leq X < 130 + 3\sigma \leq OL$	$LOD < X < 150 + 3\sigma \leq OL$
Hg	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma \leq X < 1500 + 3\sigma \leq OL$
Cr	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	$BL \leq 300 - 3\sigma < X$	--	$BL \leq 250 - 3\sigma < X$

XRF detection limits in mg/kg for regulated elements in various material

Element	Polymer Material	Metallic Material	Composite Material
Pb	10	50	50
Cd	10	50	50
Hg	10	50	50
Cr	10	50	50
Br	10	50	50

Note:

-BL = Under the XRF screening limit

-OL = Future chemical test will be conducted while result is above the screening limit

-X = The symbol "X" marks the region where further investigation is necessary

-3σ = The reproducibility of analytical instruments

-LOD = Detection limit

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 8 of 13

2. Wet Chemical Test

Test Item(s)	Test Method/ Test Equipment	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+AMD1:2017, 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

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 9 of 13

Note:

1. mg/kg= ppm=0.0001%
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.

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 10 of 13

3. Phthalate Test Result:

Test Item(s)	No.2	No.7	No.8	No.11	No.14
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	--	--	--	--
Dibutyl Phthalate (DBP)	N.D.	--	--	--	--
Butyl benzyl phthalate (BBP)	N.D.	--	--	--	--
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	--	--	--	--
Diisobutyl phthalate (DIBP)	N.D.	--	--	--	--

- Note:**
1. mg/kg= ppm=0.0001%
 2. N.D.= Not Detected(<MDL)

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

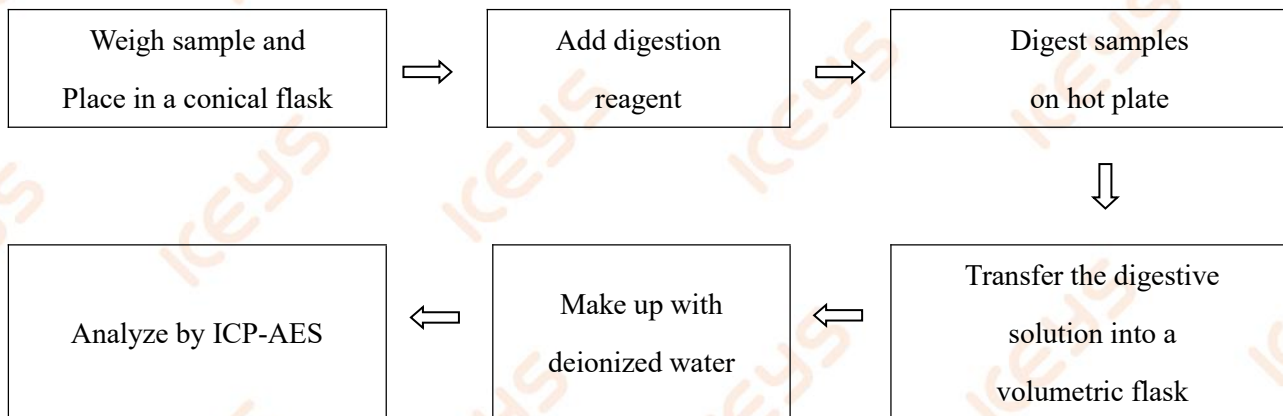
Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

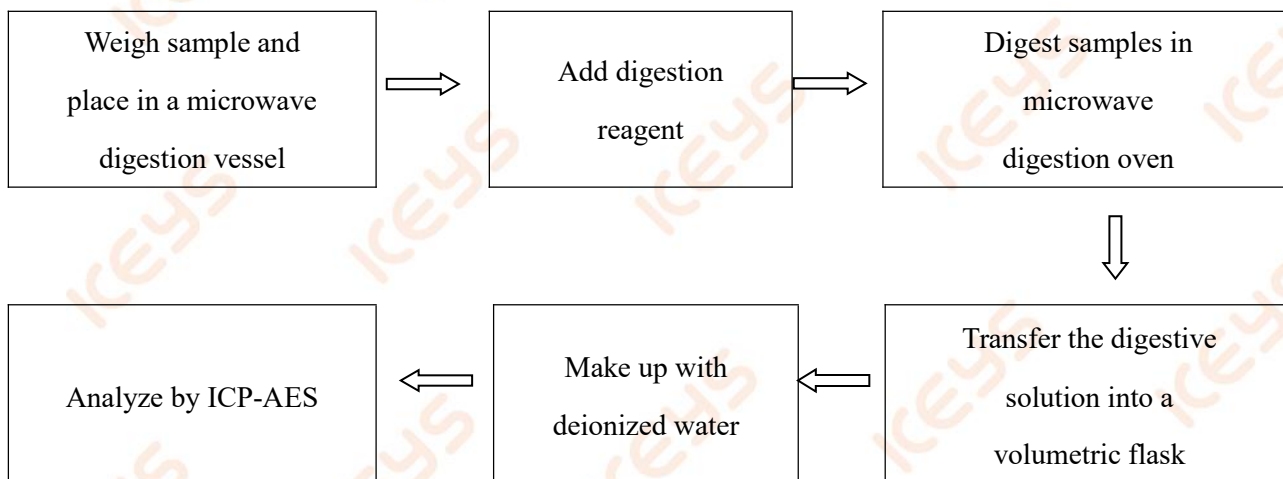
Page 11 of 13

Test Process:

1. Test for Cd/Pb Content



2. Test for Hg Content



This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

Test Report

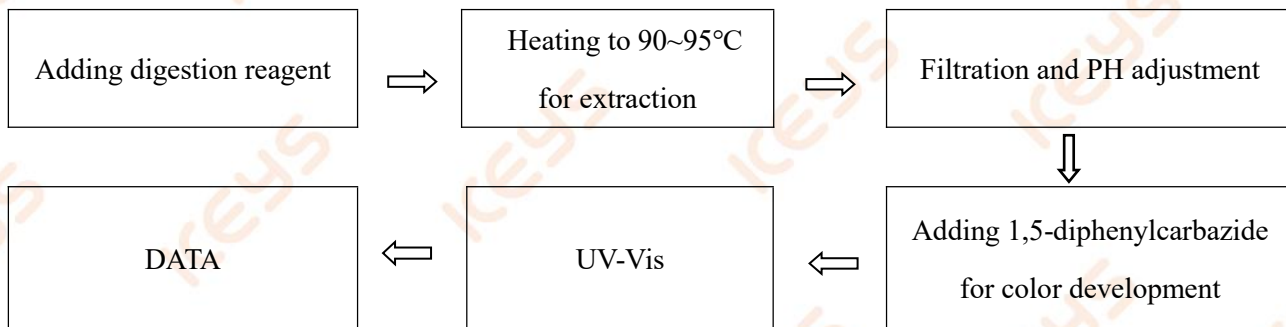
Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

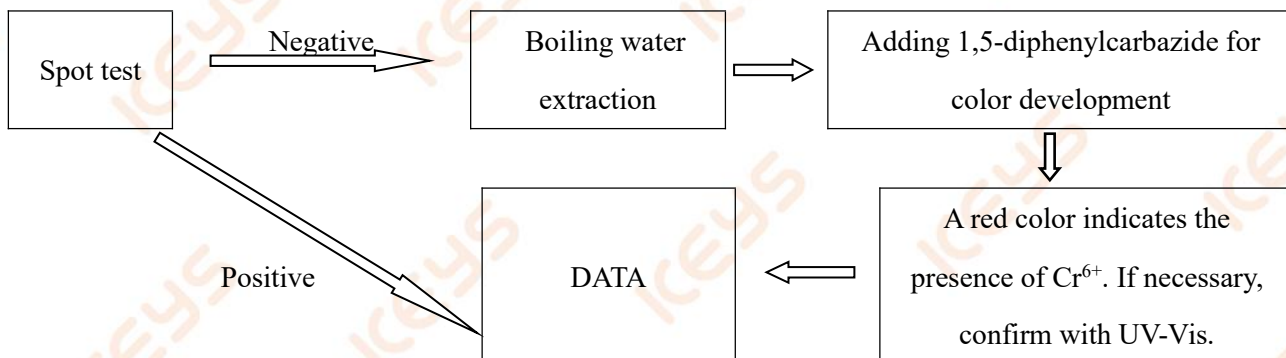
Page 12 of 13

3. Test for Chromium (VI) Content

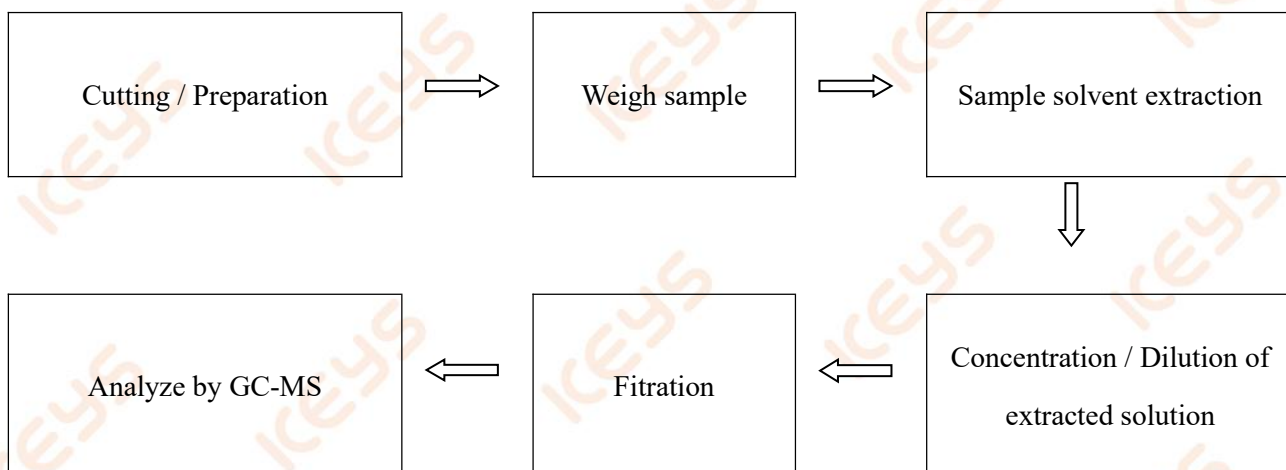
Nonmetal material



Metal material



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



This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>

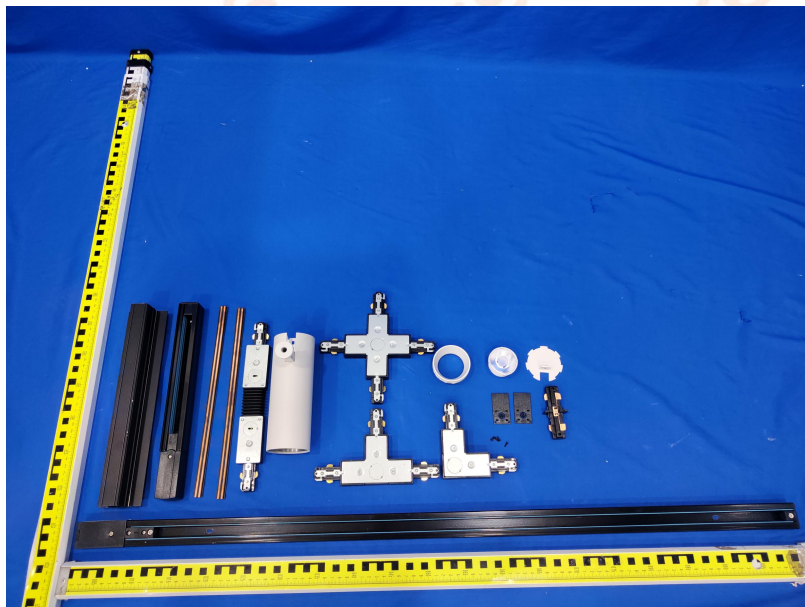
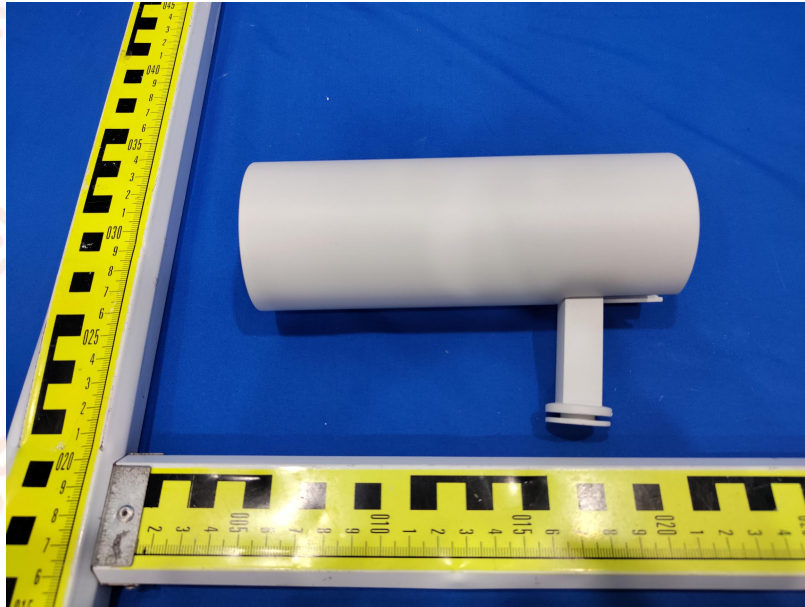
Test Report

Report No: KEYS23072104001SR1RH-03

Date: Aug. 07, 2023

Page 13 of 13

Sample Photo:



*** End of Report ***

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Guangdong KEYS Testing Technology Co., Ltd.

Address: Room 206, Building 1, Huagu Technology Center, No. 6 Hehe Street, Hengkeng, Liaobu Town, Dongguan City, Guangdong Province
6/F., Building B, Chuangyigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China/523413
Tel: 0769-89798319 E-mail: info@keys-lab.com <http://www.keys-lab.com>