TEST REPORT

Applicant : Mid Ocean Brands B.V.

Address: 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

The following sample(s) and sample information was/were submitted and identified by client as:

Sample Name: Rechargeable mini torch

Model: MO2461

Vendor code: 107978

Receiving Date: 19-Sep-2024, 26-Sep-2024

Test Period: From 19-Sep-2024 to 27-Sep-2024

Add Information: -

Test Summary:

#	Test Item(s)	Reference Standard/Method	Result
1	Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, DBP, BBP, DEHP and DIBP EU RoHS Directive 2011/65/EU and its amendment directives (EU) 2015/863 (RoHS)	IEC 62321-3-1:2013 IEC 62321-4:2013+A1:2017 IEC 62321-5:2013 IEC 62321-6:2015 IEC 62321-7-1:2015 IEC 62321-7-2:2017 IEC 62321-8:2017	**PASS**

* * * *

Result:

1.1 EU RoHS Directive 2011/65/EU and its amendment directives on XRF

IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Seq. No.	Tested Part(s)	Results				
		Pb	Cd	Hg	Cr	Br
1	Black soft plastic,USB holder	BL	BL	BL	BL	BL
2	Black soft plastic,plug holder	BL	BL	BL	BL	BL
3	Black soft plastic,wire cover	BL	BL	BL	BL	BL
4	Red soft plastic,wire jacket	BL	BL	BL	BL	BL
5	Black soft plastic,wire jacket	BL	BL	BL	BL	BL
6	Coppery metal,wire core	BL	BL	BL	BL	NA
7	Silvery metal,USB	BL	BL	BL	BL	NA
8	Silvery metal,contact plate	BL	BL	BL	BL	NA
9	White plastic,holder	BL	BL	BL	BL	BL
10	Silvery metal,plug	BL	BL	BL	BL	NA
11	Matt-black plastic,holder	BL	BL	BL	BL	BL
12	Silvery metal,holder	BL	BL	BL	BL	NA
13	Golden metal,contact plate	BL	BL	BL	BL	NA
14	Green PCB	BL	BL	BL	BL	X
15	Silvery metal,solder	BL	BL	BL	BL	NA
16	Black body,resistor	BL	BL	BL	BL	BL
17	Black textile,string	BL	BL	BL	BL	BL
18	Bright black plastic,string holder	BL	BL	BL	BL	BL
19	Black textile,belt	BL	BL	BL	BL	BL
20	Black plated silvery metal,cover	BL	BL	BL	BL	NA
21	Black plated silvery metal,shell	BL	BL	BL	BL	NA
22	Transparent plastic,LED cover	BL	BL	BL	BL	BL
23	Black plastic,base	BL	BL	BL	BL	X
24	Blue soft plastic,button	BL	BL	BL	BL	BL

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25	Black soft plastic,ring	BL	BL	BL	BL	BL
26	Matt-white plastic,holder	BL	BL	BL	BL	BL
27	Yellow body,LED	BL	BL	BL	BL	X
28	Green PCB	BL	BL	BL	BL	X
29	White/brown coating,plate	BL	BL	BL	BL	BL
30	Silvery metal,plate	BL	BL	BL	BL	NA
31	Silvery metal,solder	BL	BL	BL	BL	NA
32	Black foam with glue,cushion	BL	BL	BL	BL	BL
33	Green plastic,battery cover	BL	BL	BL	BL	BL
34	White soft plastic,wire jacket	BL	BL	BL	BL	BL
35	Black soft plastic,wire jacket(thick)	BL	BL	BL	BL	BL
36	Red soft plastic,wire jacket(thick)	BL	BL	BL	BL	BL
37	Silvery metal,port	BL	BL	BL	BL	NA
38	Silvery metal,contact plate	BL	BL	BL	BL	NA
39	Dark black plastic,button	BL	BL	BL	BL	BL
40	Silvery metal,cover	BL	BL	BL	BL	NA
41	Silvery metal,spring plate	BL	BL	BL	BL	NA
42	Silvery metal,lead	BL	BL	BL	BL	NA
43	Black body,big resistor	BL	BL	BL	BL	BL
44	Transparent body,LED	BL	BL	BL	BL	X
45	Black body,IC	BL	BL	BL	BL	BL
46	Black body,audion	BL	BL	BL	BL	BL
47	Brown body,capacitor	BL	BL	BL	BL	BL
48	Green PCB	BL	BL	BL	BL	X
49	Silvery metal,solder	BL	BL	BL	BL	NA

Remark:

(1) Results were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

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Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	BL≤70-3σ< X <130+3σ≤OL	BL≤70-3σ< X <130+3σ≤OL	BL≤50-3σ< X <150+3σ≤OL
Pb	mg/kg	BL≤700-3σ< X <1300+3σ≤OL	BL≤700-3σ< X <1300+3σ≤ OL	BL≤500-3σ< X <1500+3σ≤OL
Hg	mg/kg	BL≤700-3σ< X <1300+3σ≤OL	BL≤700-3σ< X <1300+3σ≤OL	BL≤500-3σ< X <1500+3σ≤OL
Cr	mg/kg	BL≤700-3σ< X	BL≤700-3σ< X	BL≤500-3σ< X
Br	mg/kg	BL≤300-3σ< X	--	BL≤250-3σ< X

Note:

BL = Below Limit

OL = Over Limit

X = Inconclusive

NA = Not Applicable

(2) The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

(3) The maximum permissible limit is quoted from the document 2011/65/EU and its amendment directives (EU) 2015/863 :

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenyl ethers (PBDEs)	1000

(4) Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes. The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect(e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

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(5) The selection of test portions was recommended by the client and the conclusion of chemical test is only for the selected portions.

(6) Materials #33 is the test results of the resubmitted sample

1.2 Polybrominated Biphenyls and Polybrominated Diphenyl Ethers (PBBs and PBDEs)

IEC 62321-6:2015, solvent extract and determined by GC/MS

Compound		Material				Limit (mg/kg)	RL (mg/kg)
		14	23	27	28		
1	Monobromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
2	Dibromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
3	Tribromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
4	Tetrabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
5	Pentabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
6	Hexabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
7	Heptabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
8	Octabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
9	Nonabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
10	Decabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
11	Monobromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
12	Dibromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
13	Tribromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
14	Tetrabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
15	Pentabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
16	Hexabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
17	Heptabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
18	Octabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
19	Nonabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50

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20	Decabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
21	Sum of PBBs	N.D.	N.D.	N.D.	N.D.	1000	-
22	Sum of PBDEs	N.D.	N.D.	N.D.	N.D.	1000	-
	Conclusion	**PASS**	**PASS**	**PASS**	**PASS**	-	-

Compound		**Material**		**Limit (mg/kg)**	**RL (mg/kg)**
		44	**48**		
1	Monobromo biphenyl	N.D.	N.D.	-	50
2	Dibromo biphenyl	N.D.	N.D.	-	50
3	Tribromo biphenyl	N.D.	N.D.	-	50
4	Tetrabromo biphenyl	N.D.	N.D.	-	50
5	Pentabromo biphenyl	N.D.	N.D.	-	50
6	Hexabromo biphenyl	N.D.	N.D.	-	50
7	Heptabromo biphenyl	N.D.	N.D.	-	50
8	Octabromo biphenyl	N.D.	N.D.	-	50
9	Nonabromo biphenyl	N.D.	N.D.	-	50
10	Decabromo biphenyl	N.D.	N.D.	-	50
11	Monobromo diphenyl ether	N.D.	N.D.	-	50
12	Dibromo diphenyl ether	N.D.	N.D.	-	50
13	Tribromo diphenyl ether	N.D.	N.D.	-	50
14	Tetrabromo diphenyl ether	N.D.	N.D.	-	50
15	Pentabromo diphenyl ether	N.D.	N.D.	-	50
16	Hexabromo diphenyl ether	N.D.	N.D.	-	50
17	Heptabromo diphenyl ether	N.D.	N.D.	-	50
18	Octabromo diphenyl ether	N.D.	N.D.	-	50

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19	Nonabromo diphenyl ether	N.D.	N.D.	-	50
20	Decabromo diphenyl ether	N.D.	N.D.	-	50
21	Sum of PBBs	N.D.	N.D.	1000	-
22	Sum of PBDEs	N.D.	N.D.	1000	-
	Conclusion	**PASS**	**PASS**	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) RL: Report limit
(c) N.D.: Not detected (result is less than RL)

1.3 Phthalates – (DBP, BBP, DEHP, DIBP)

IEC 62321-8:2017, Solvent extract and determined by GC/MS

Compound			Material				Limit (%)	RL(%)
			1+2+3	4+5	9+18	11+26+39		
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	N.D.	N.D.	0.1	0.005
	Conclusion		**PASS**	**PASS**	**PASS**	**PASS**	-	-

Compound			Material				Limit (%)	RL(%)
			14+28+48	16+27	17+19	22+23		
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	N.D.	N.D.	0.1	0.005
	Conclusion		**PASS**	**PASS**	**PASS**	**PASS**	-	-

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Compound			Material				Limit (%)	RL(%)
			24+25	29	32	33		
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	N.D.	N.D.	0.1	0.005
	Conclusion		**PASS**	**PASS**	**PASS**	**PASS**	-	-

Compound			Material			Limit (%)	RL(%)
			34+35+36	43+44+45	46+47		
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	N.D.	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	N.D.	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	N.D.	0.1	0.005
	Conclusion		**PASS**	**PASS**	**PASS**	-	-

Remark(s): (a) RL: Report limit
(b) N.D.: Not detected (result is less than RL)

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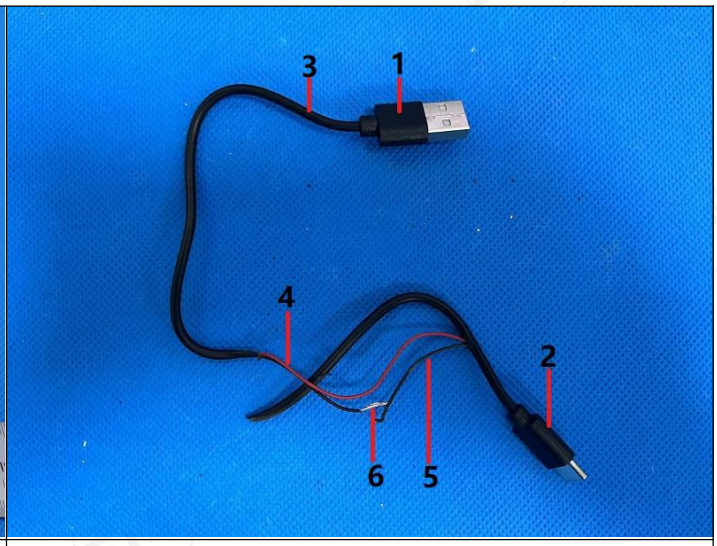

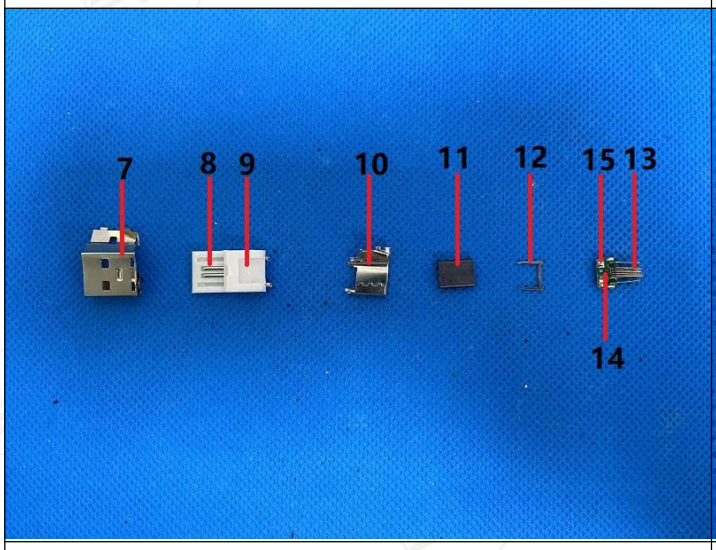

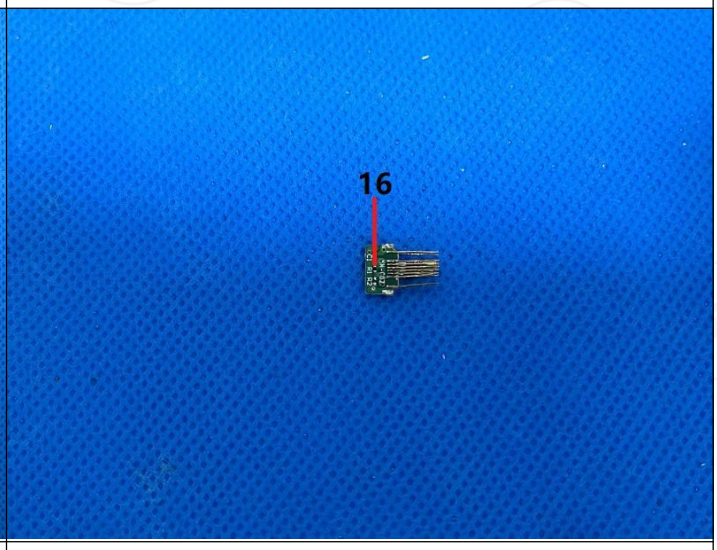

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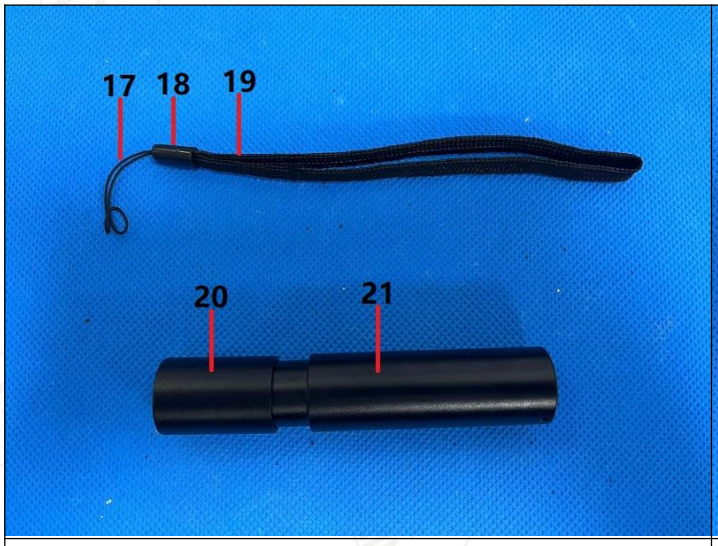	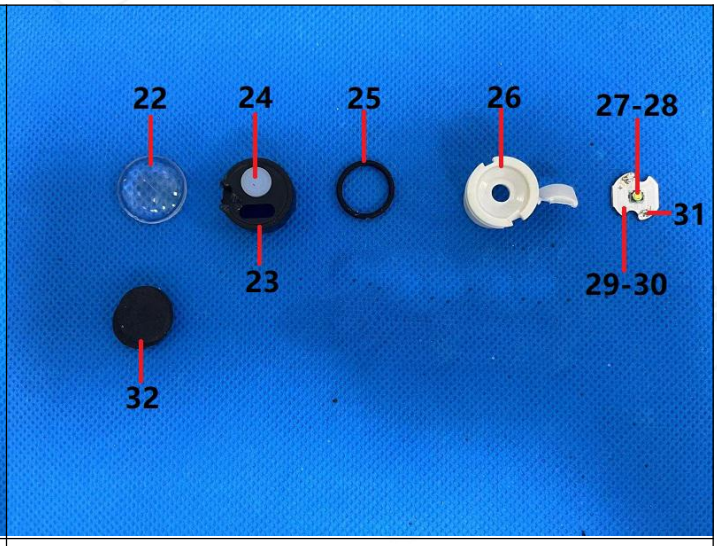
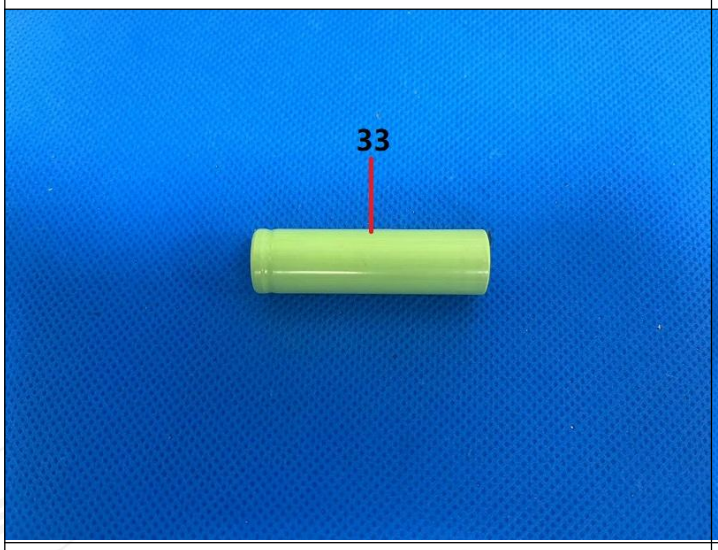	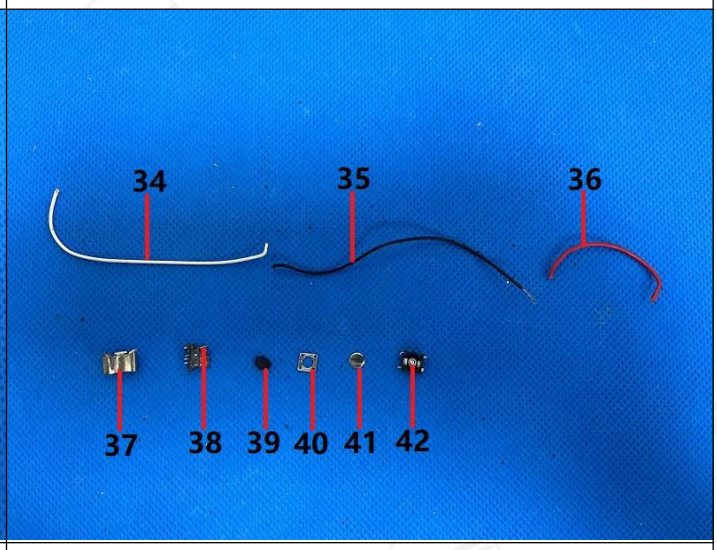

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Guangzhou Depuhua Test Services Co. Ltd.

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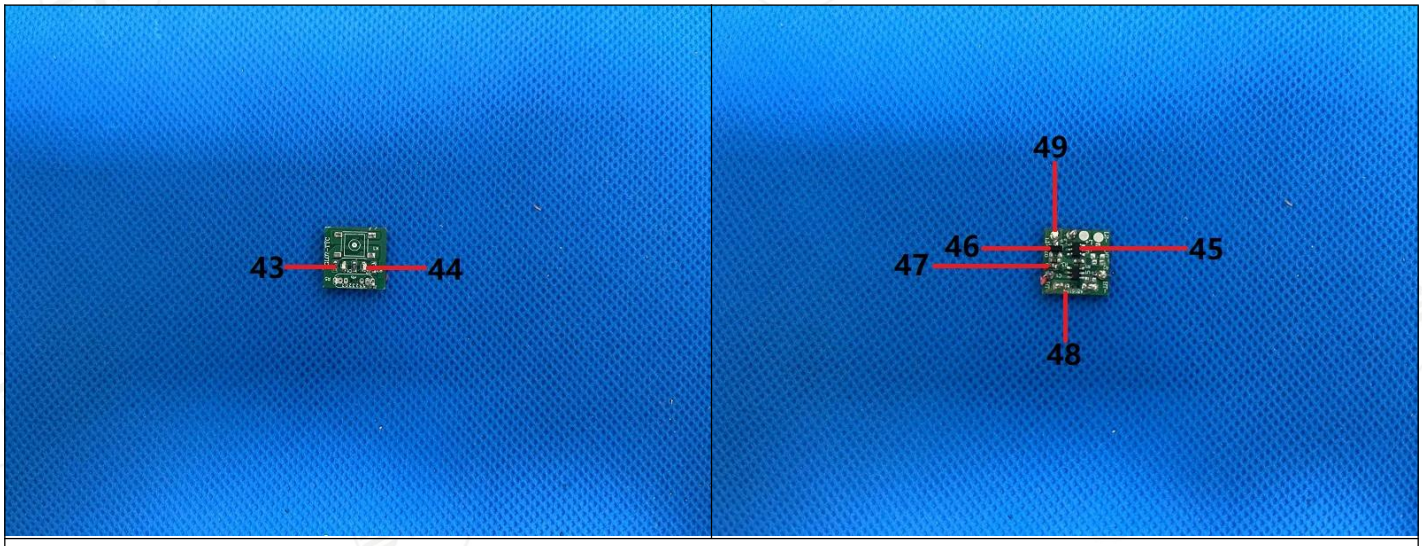

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3. 除非相关政府部门、法律或法院要求,否则未经公司预先书面同意,本公司毋需,也并无义务到法院对有关报告作证。
The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. 除非本公司进行抽样,并已在报告中说明,否则报告中适用于送测的样品(样品信息为客户提供),不适用于批量。
The Report refers only to the tested sample (Sample information is provided by customer) and does not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.

5. 如果本公司确定报告被不当地使用,本公司保留撤回报告的权利,并有权要求其它适当的额外赔偿。
In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

6. 本公司接受样品进行测试的前提是,该测试报告不能作为针对本公司法律行动的依据。
Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

7. 如因使用本公司中心任何报告内的资料,或任何传播信息所描述与之有关的测试或研究导致的任何损失或损害,本公司概不负责。
The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

8. 若需要在法院审理程序或者仲裁过程中使用测试报告,客户必须在提交测试样品前将该意图告知本公司。
Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. 该测试报告的支持数据和信息本公司保存 10 年。个别评审机构有特别要求的,检测数据和报告的保存期可依情况变动。一旦超过上述提交的保存期限,数据和信息将被处理掉。任何情况下,本公司不必提供任何被处理的过期数据或信息。即使本公司事先被告知可能会发生相关的损害,本公司在任何情况下也不必承担任何损害,包括(但不限于)补偿性赔偿、利润损失、数据遗失、或任何形式的特殊损害、附带损害、间接损害、从属损害或任何违反约定、违反承诺、侵权(包括疏忽)、产品责任或其他原因的惩罚性损害。
Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of ten years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

10. 报告的签发记录可通过登录 http://www.dphtl.com 查询。如需进一步查询报告有效性或核实报告，需与本公司联系。
Issuance records of the Report are available on the internet at http://www.dphtl.com. Further enquiry of validity or verification of the Report should be addressed to the company.