

Report No.: STSGZ2409193070E Date: 23-Oct-2024 Page 1 of 11

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 torch

Model:

MO2428

Vendor code:

107978

**Receiving Date:** 

19-Sep-2024, 17-Oct-2024

**Test Period:** 

From 19-Sep-2024 to 21-Oct-2024

Add Information:

### **Test Summary:**

#	Test Item(s)	Reference Standard/Method	Result
1 E	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

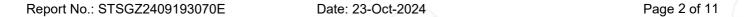
Signed for and on behalf of ST

Mark Mai (Technical Director)









#### 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					
Seq. No.	rested Part(s)	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	White soft plastic,wire jacket	BL	BL	BL	BL	BL		
5	Pink 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,plate	BL	BL	BL	BL	NA		
13	Golden metal,contact plate	BL	BL	BL	BL	NA		
14	Silvery metal,solder	BL	BL	BL	BL	NA		
15	Black elastic band	BL	BL	BL	BL	BL		
16	Black plastic,shell	BL	BL	BL	BL	Х		
17	Transparent plastic,shell	BL	BL	BL	BL	BL		
18	Translucent grey soft plastic,button	BL	BL	BL	BL	BL		
19	Silvery metal,screw	BL	BL	BL	Х	NA		
20	Green plastic,battery cover	BL	BL	BL	BL	BL		
21	Silvery coating,LED holder	BL	BL	BL	BL	BL		
22	Light black plastic,LED holder	BL	BL	BL	BL	BL		
23	Black foam with glue,cushion	BL	BL	BL	BL	BL		
24	Green PCB	BL	BL	BL	BL	Х		



Report No.: STSGZ2409193070E Date: 23-Oct-2024 Page 3 of 11

25	Silvery metal,solder	BL	BL	BL	BL	NA
26	White printed black soft plastic,heat shrink tubing	BL	BL	BL	BL	BL
27	Black soft plastic,wire jacket	BL	BL	BL	BL	BL
28	Red soft plastic,wire jacket	BL	BL	BL	BL	BL
29	Silvery metal,port	BL	BL	BL	BL	NA
30	Silvery metal,contact plate	BL	BL	BL	BL	NA
31	Dark black plastic,button	BL	BL	BL	BL	BL
32	Silvery metal,cover	BL	BL	BL	BL	NA
33	Silvery metal,spring plate	BL	BL	BL	BL	NA
34	Matt-white plastic,base	BL	BL	BL	BL	BL
35	Silvery metal,lead	BL	BL	BL	BL	NA
36	Transparent plastic,LED	BL	BL	BL	BL	Х
37	Silvery metal,lead	BL	BL	BL	BL	NA
38	Bright black plastic,LED	BL	BL	BL	BL	Х
39	Yellow body,LED	BL	BL	BL	BL	Х
40	Black body,IC	BL	BL	BL	BL	BL
41	Black body,resistor	BL	BL	BL	BL	BL
42	Black body,audion	BL	BL	BL	BL	BL
43	Transparent body,LED	BL	BL	BL	BL	Х
44	Brown body,capacitor	BL	BL	BL	BL	BL

#### 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.

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



Report No.: STSGZ2409193070E Date: 23-Oct-2024 Page 4 of 11

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.

- (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 #1, #2, #3, #4, #5, #14 & #25 are the test results of the resubmitted sample



Page 5 of 11 Report No.: STSGZ2409193070E Date: 23-Oct-2024

#### **Hexavalent Chromium (Cr(VI))**

Metal: IEC 62321-7-1:2015, extracted by boiling water and analyzed by UV-Vis Non-metal: IEC 62321-7-2:2017, alkaline digested and analyzed by UV-Vis

	Compound		Material	Limit	DI.
			19		RL
	1	Hexavalent Chromium (Cr(VI))	Negative	#	(-
		Conclusion	PASS	-	-

Remark(s) (a) ug/cm²: microgram per square centimeter (b) RL: Report Limit

#### 1.3 Polybrominated Biphenyls and Polybrominated Diphenyl Ethers (PBBs and PBDEs) IEC 62321-6:2015, solvent extract and determined by GC/MS

			Mat	erial		Limit	RL
	Compound	16	24	36	38	(mg/kg)	(mg/kg)
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.	<u></u>	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.	- 4	50
11	Monobromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50

<sup>(</sup>c) Negative = Sample Cr(VI) concentration is less than 0.10 ug/cm<sup>2</sup> Positive = Sample Cr(VI) concentration is greater than 0.13 ug/cm<sup>2</sup>

<sup>(</sup>d) # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as conflict with RoHS requirement. Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as no conflict with RoHS requirement.



Report No.: STSGZ2409193070E Date: 23-Oct-2024 Page 6 of 11

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.	(5)	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
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	-	-

		Mate	rial	Limit	RL	
	Compound	39	43	(mg/kg)	(mg/kg)	
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	



Page 7 of 11 Report No.: STSGZ2409193070E Date: 23-Oct-2024

11	Monobromo diphenyl ether	N.D.	N.D.	\ <del>-</del>	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
19	Nonabromo diphenyl ether	N.D.	N.D.	<u> </u>	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)

Phthalates – (DBP, BBP, DEHP, DIBP) IEC 62321-8:2017, Solvent extract and determined by GC/MS

	Compound		Material				Limit (0/)	DI (0/)
			1+2+3	4+5	9+16+17	11+22+31	Limit (%)	RL(%)
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	ВВР	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	-	-



Report No.: STSGZ2409193070E Page 8 of 11 Date: 23-Oct-2024

Compound			Material				Limit (0/)	DI (0()
			15	18	20	23	Limit (%)	RL(%)
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 (9/)	DI (9/)
			24	26+27+28	34+36+38	39+40+41	Limit (%)	RL(%)
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	ВВР	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	-	-

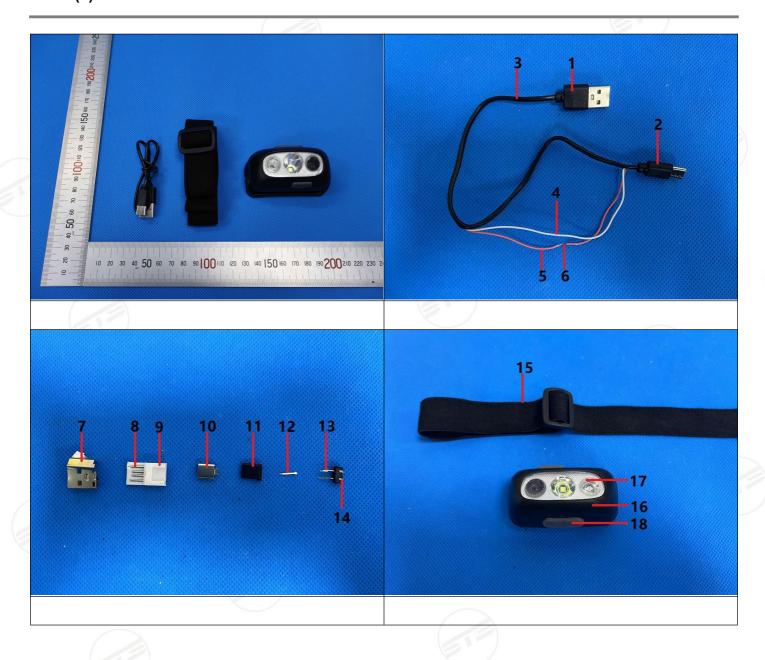
	Compound		Material	Limit (9/)	DI (9/)
Compound -			42+43+44	Limit (%)	RL(%)
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	0.1	0.005
	Conclusion		PASS	-	-

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



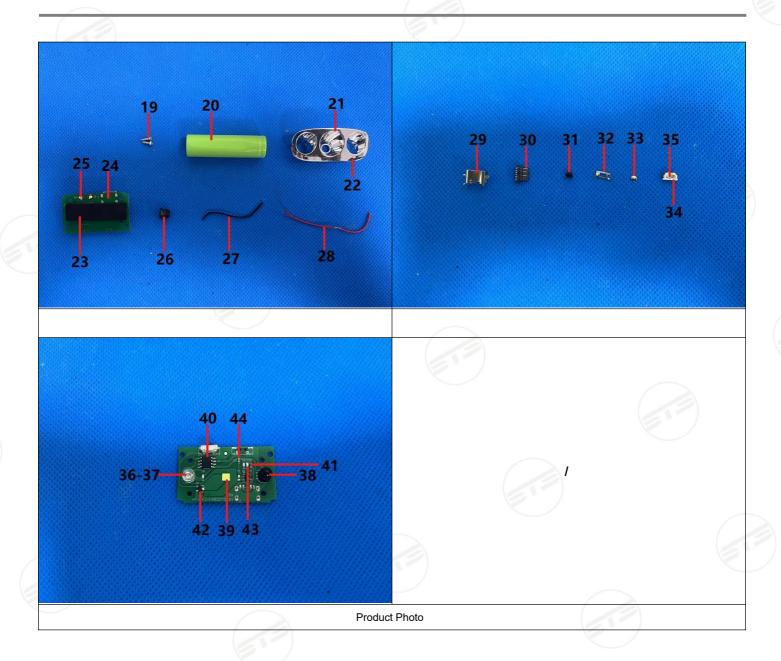
Report No.: STSGZ2409193070E Date: 23-Oct-2024 Page 9 of 11

## Photo(s):





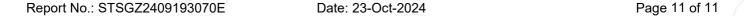
Report No.: STSGZ2409193070E Date: 23-Oct-2024 Page 10 of 11



<<<< END OF REPORT >>>>>









#### Statement

本检测报告首页所列信息中除样品来源、接样日期、检测日期、检测结果和检测结论外,均由委托方提供,委托方对样品的代表性和资料的真实性负责,本实验室不承担任何相关责任。

The information as listed on the first page of this test report was all provided by the client except the sample from, date received, test period, test results and test conclusion. The client shall be responsible for the representativeness of sample and authenticity of materials, for which STS shall bear no responsibilities.

本检测报告以实测值进行符合性判定,未考虑不确定度所带来的风险,特别约定、标准或规范中有明确规定的除外。此种判定方式所带来的风险由客户自行承担,本实验室不承担相关责任。

The judgment method of determining the conformity in this test report is according to the measured value without considering the risk caused by uncertainty, unless otherwise clearly stipulated in special agreement, standard or specification. The client shall assume the risk caused by the judgment method, and STS shall not bear related responsibilities.

- 检测报告无批准人签字及"检验检测专用章"无效,未经本实验室书面同意,不得整体或部分复制本报告。
   The test report is effective only with both signature and specialized stamp. Without written approval of STS, this report can't be reproduced in full or in part.
- 4. 本检测报告的检测结果仅对送测样品负责,未加盖资质认定标志的检测报告不对社会具有公证证明作用,对于检测数据、结果的使用,所产生的直接或间接损失及一切法律后果,本实验室不承担任何经济和法律责任。

This test data is only responsible for the tested sample. The data and results provided by the report without CMA accreditation are not to prove to the society, and STS is not responsible for any economic and legal responsibility for the use of the test data, the direct or indirect losses resulting from the use of the test and all legal consequences.

5. 本检测报告中检测项目标注有下划线则该项目不在本实验室资质认定能力范围内,该项目检测结果仅作为客户委托、科研、教学或内部质量控制等目的使用。

The underlined test item in the report is out of the scope of CMA accreditation. The test result only used for client's requirement, scientific researching ,teaching or internal quality control.

6. 其它声明请查阅报告页脚及书面报告背页。

For other statements, please refer to the footer of the report.

This report is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

Guangzhou Depuhua Test Services Co. Ltd.

A301&A401, 3/F.&4/F., Xinghui Building, Guanqiao, Shilou, Panyu District, Guangzhou, Guangdong, China e-mail: dphrp@dphtl.com Phone:+86 (0)20-84503814 Fax: +86 (0)20-6664 1699 Web:http://www.dphtl.com

#### 签发测试报告条款

#### Conditions of Issuance of Test Reports

1. 广州市德普华检测技术有限公司(以下简称[公司])为提供符合下述条款的测试和报告,而接受有关样品和货品。本公司基于下述条款提供服务,下述条款为本公司与申请服务的个人,企业或公司(以下简称[客户])的协议。

All samples and goods are accepted by the Guangzhou Depuhua Test Services Co., Ltd. (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the Company and any person, firm or company requesting its services (the "Clients").

2. 由此测试申请所发出的任何报告(以下简称[报告]),本公司会严格为客户保密。未经本公司的书面同意,报告的整体或部分不得复制,也不得用于广告或授权的其他用途。然而,客户可以将本公司印制的报告或认可的副本,向其客户、供货商或直接相关的其它人出示或提交。除非相关政府部门、法律或法规要求,否则未经客户同意,本公司不得将报告内容向任何第三方讨论或披露。

Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it. or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court order.

- 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.