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: Laser pointer in metal;
Multifunctional silver pen

Model/Style/Item #: MO8097;MO8193

Receiving Date: 20-Feb-2023

Test Period: From 20-Feb-2023 to 23-Feb-2023

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/yellow printed white paper,sticker	BL	BL	BL	BL	BL
2	Brown plastic,box cover	BL	BL	BL	BL	BL
3	Brown density board,box	BL	BL	BL	BL	BL
4	Matt-white plastic,box	BL	BL	BL	BL	BL
5	Black foam,cushion	BL	BL	BL	BL	BL
6	Black printed transparent plastic,sticker	BL	BL	BL	BL	BL
7	Silvery metal plating,cover	BL	BL	BL	BL	NA
8	White plastic,cover	BL	BL	BL	BL	BL
9	Silvery metal,clamp	BL	BL	BL	BL	NA
10	Black coating,shell	BL	BL	BL	BL	BL
11	Matt-silvery metal,shell	BL	BL	BL	BL	NA
12	Silvery metal,pen tip	BL	BL	BL	BL	NA
13	Silvery metal,spring	BL	BL	BL	X	NA
14	Golden metal,spring	BL	BL	BL	X	NA
15	Silvery metal,solder	BL	BL	BL	BL	NA
16	Green PCB	BL	BL	BL	BL	X
17	Black body,resistor	BL	BL	BL	BL	BL
18	Transparent plastic,lamp cover	BL	BL	BL	BL	BL
19	Silvery metal,lead	BL	BL	BL	BL	NA
20	Black soft plastic,wire jacket	BL	BL	BL	BL	BL
21	Coppery metal,plate	BL	BL	BL	BL	NA
22	Brown plastic,plate	BL	BL	BL	BL	BL
23	Golden metal,plate	BL	BL	BL	BL	NA
24	Red plastic,button	BL	BL	BL	BL	BL

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25	Silvery metal,cover	BL	BL	BL	BL	NA
26	Black plastic,holder	BL	BL	BL	BL	BL
27	Silvery metal,spring plate	BL	BL	BL	BL	NA
28	Silvery metal,lead	BL	BL	BL	BL	NA
29	Translucent plastic,holder	BL	BL	BL	BL	BL
30	White plastic,holder	BL	BL	BL	BL	BL
31	Transparent plastic,refill	BL	BL	BL	BL	BL
32	Blue ink,refill	BL	BL	BL	BL	BL
33	Silvery metal,nib	BL	BL	BL	BL	NA
34	Silvery metal,bead	BL	BL	BL	BL	NA
35	Silvery metal,box	BL	BL	BL	BL	NA
36	Silvery metal,axis	BL	BL	BL	BL	NA
37	Gray foam,cushion	BL	BL	BL	BL	BL
38	Black soft plastic,cover	BL	BL	BL	BL	X

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
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

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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.

1.2 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	RL
		13	14		
1	Hexavalent Chromium (Cr(VI))	Negative	Negative	#	-
	Conclusion	**PASS**	**PASS**	-	-

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Remark(s) (a) ug/cm^2: microgram per square centimeter
(b) RL: Report Limit
(c) Negative = Sample Cr(VI) concentration is less than 0.10 ug/cm^2
Positive = Sample Cr(VI) concentration is greater than 0.13 ug/cm^2
(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.

1.3 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)
		16	38		
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)

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

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

Compound			Material				Limit (%)	RL(%)
			1	2+4+8	3	5		
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(%)
			6	10	16	17		
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(%)
			18+22+24	20	26+29	30+31		
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(%)
			32	37	38		
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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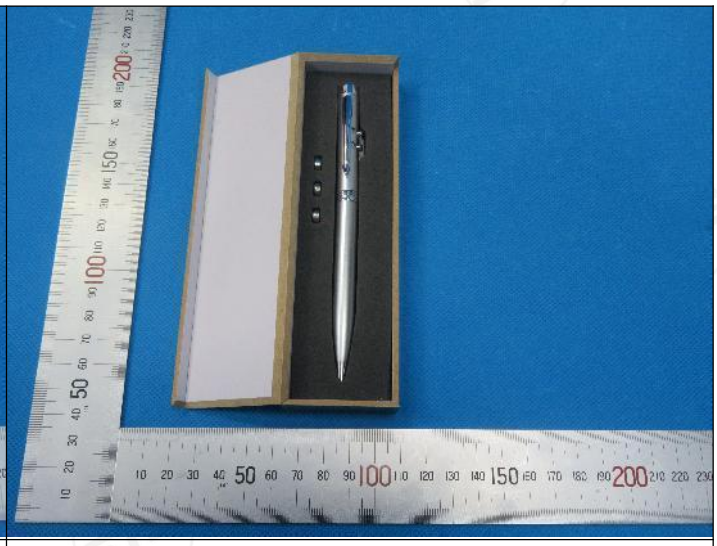

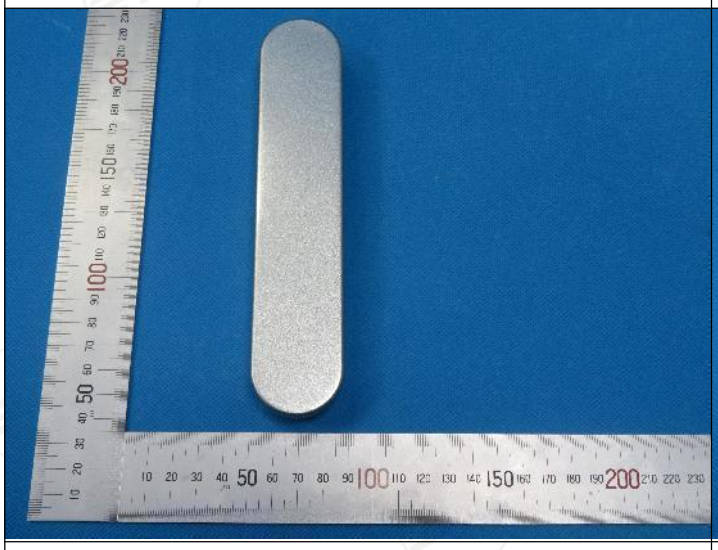



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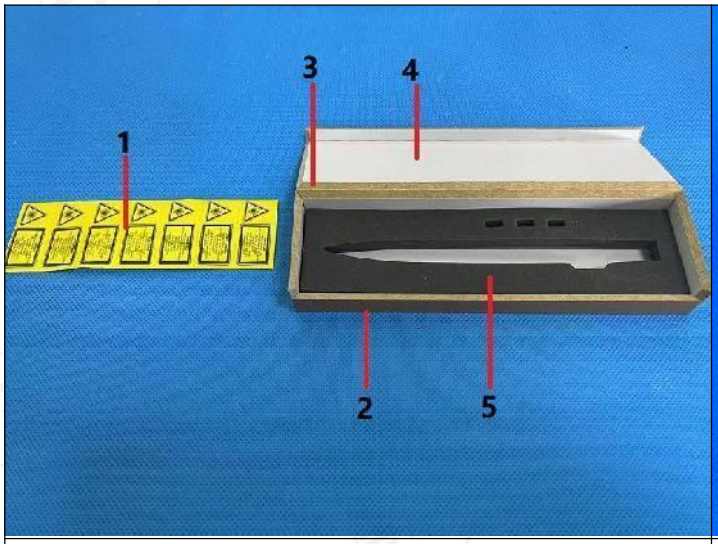



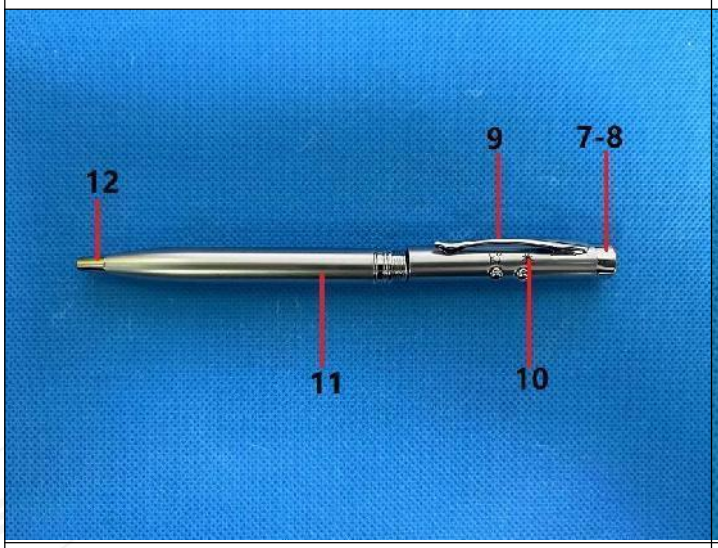

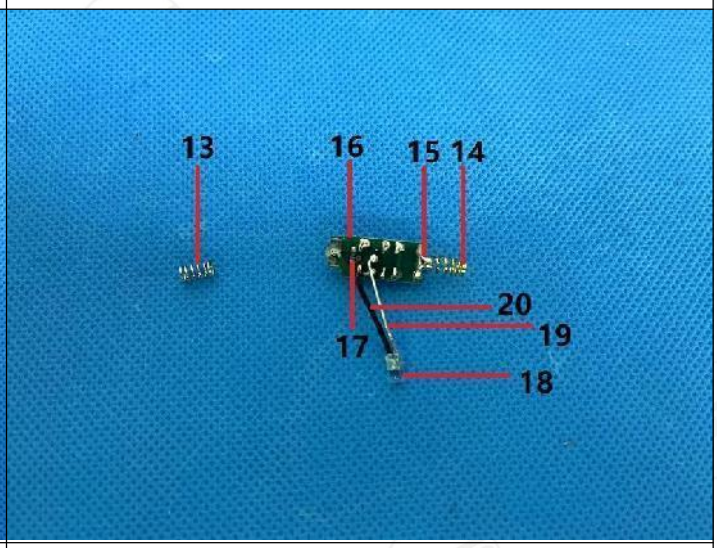

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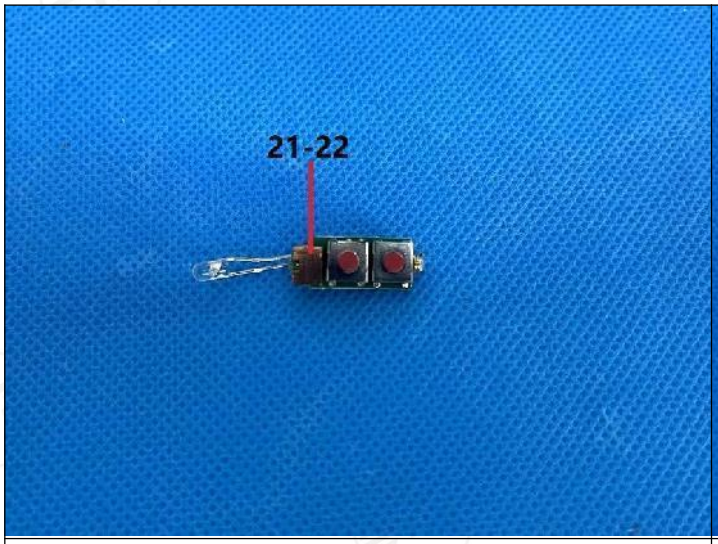	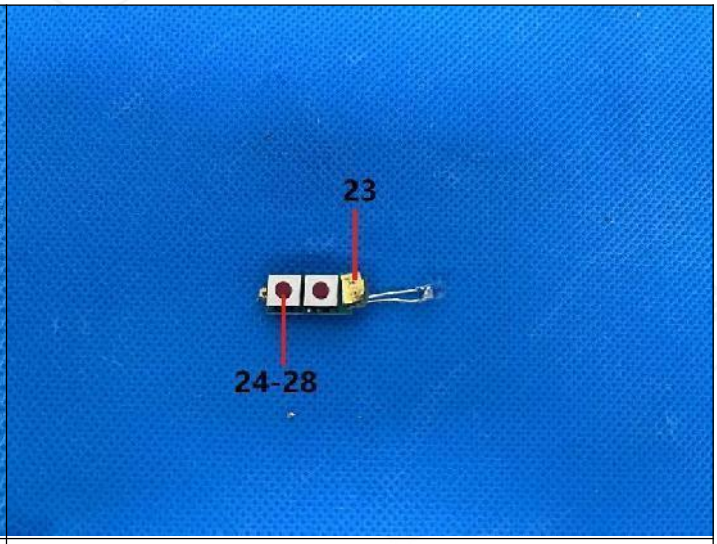
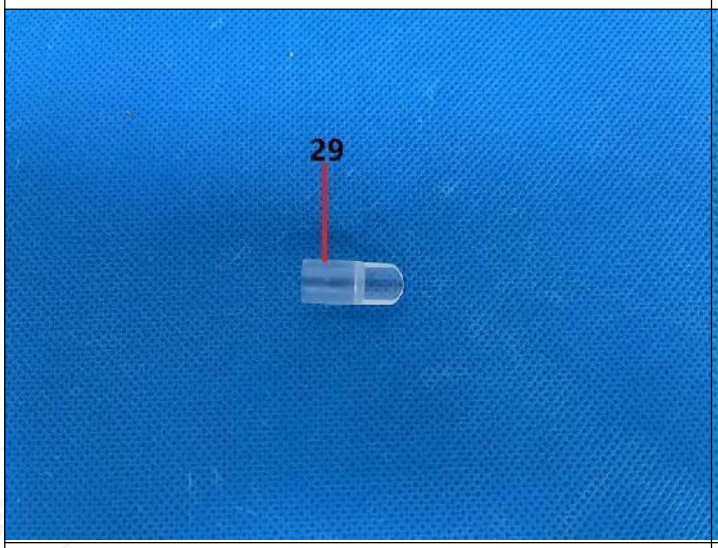	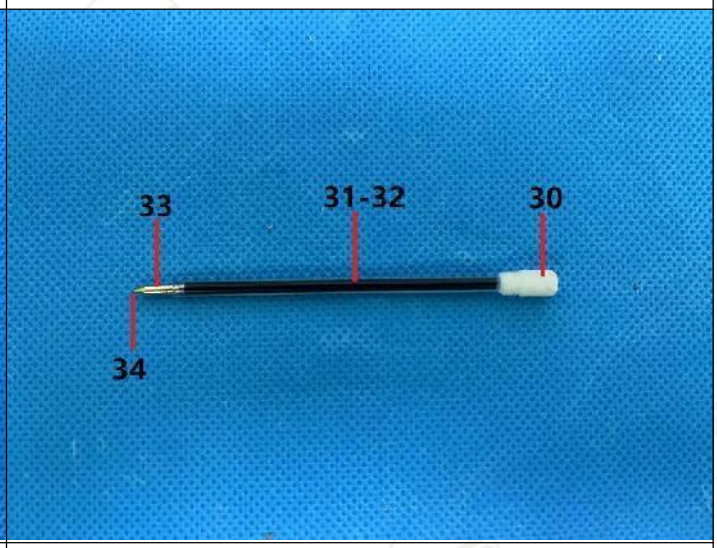

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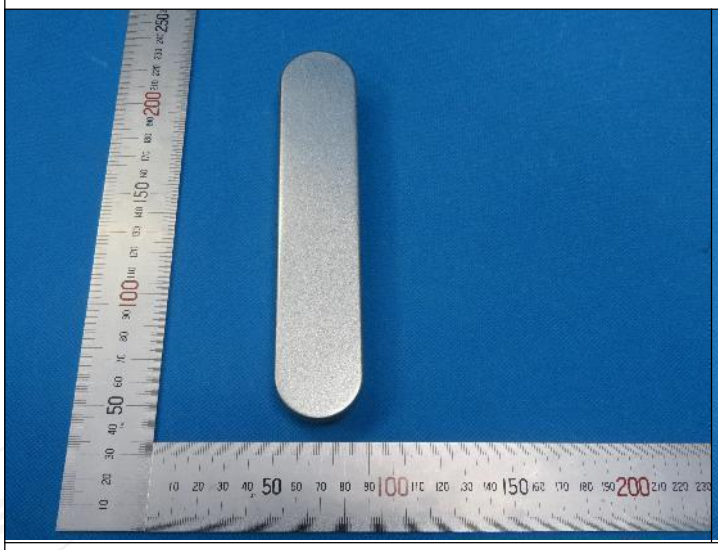
Test Sample Photo





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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 www.stsgz.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。
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