

# TEST REPORT

Report No.: DPHTL2507283101E

Date: Aug 22,2025

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**Applicant :** Mid Ocean Brands B.V.**Address:** Unit 711-716, 7/F., Tower A, 83 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:** Thermometer bottle**Model/Style/Item #:** MO6872**Vendor Code:** 107978**Receiving Date:** Jul 28,2025; Aug 6,2025**Test Period:** From Jul 28,2025 to Aug 11,2025**Add Information:** -**Test Summary:**

#	Test Item(s)	Conclusion
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,(EU)2017/2102,(EU)2022/1632 (RoHS 2.0)	<b>PASS</b>

\*\*\*\*\*Please refer to the following page for detailed results\*\*\*\*\*

Authorized Signatory

**Mark Mai**  
(Technical Director)

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## Result:

**1.1 EU RoHS Directive 2011/65/EU and its amendment directives(EU)2015/863,(EU)2017/2102,(EU)2022/1632 (RoHS 2.0) 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 plastic,lid	BL	BL	BL	BL	BL
2	Transparent black plastic,lid	BL	BL	BL	BL	BL
3	Transparent silicone,seal ring	BL	BL	BL	BL	BL
4	Silvery metal,lid	BL	BL	BL	X	NA
5	Black coating,bottle	BL	BL	BL	BL	BL
6	Silvery metal,bottle	BL	BL	BL	X	NA
7	Transparent plastic,film	BL	BL	BL	BL	BL
8	Black printed white plastic,sitcker	BL	BL	BL	BL	BL
9	White plastic,holder	BL	BL	BL	BL	BL
10	Silvery textile,cushion	BL	BL	BL	BL	BL
11	Beige sponge,cushion	BL	BL	BL	BL	BL
12	Black body,sensor	BL	BL	BL	BL	BL
13	Red enamelled wire	BL	BL	BL	BL	BL
14	Black body,IC	BL	BL	BL	BL	BL
15	Yellow body,LED	BL	BL	BL	BL	X
16	Transparent body,LED	BL	BL	BL	BL	X
17	Black body,resistor	BL	BL	BL	BL	BL
18	Brown body,capacitor	BL	BL	BL	BL	BL
19	Silvery metal,solder	BL	BL	BL	BL	NA
20	Black PCB	BL	BL	BL	BL	BL
21	Silvery metal,solder	X	BL	BL	BL	NA
22	Silvery metal,contact plate	BL	BL	BL	BL	NA

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## 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	Polymers	Metal	Composite material
Cd	mg/kg	$BL \leq 70 - 3\sigma < X < 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma < X < 130 + 3\sigma \leq OL$	$BL \leq 50 - 3\sigma < X < 150 + 3\sigma \leq OL$
Pb	mg/kg	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X < 1500 + 3\sigma \leq OL$
Hg	mg/kg	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X < 1500 + 3\sigma \leq OL$
Cr	mg/kg	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	mg/kg	$BL \leq 300 - 3\sigma < X$	--	$BL \leq 250 - 3\sigma < X$

## 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,(EU)2017/2102,(EU)2022/1632 (RoHS 2.0):

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous Results)
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:

- (5) 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,

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ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

(6) Materials #19 and #21 are the test results of the resubmitted sample.

## 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

Test Item(s)		Result		Limit	MDL
		4	6		
1	Hexavalent Chromium (Cr(VI))	Negative	Negative	#	-
-	Conclusion	PASS	PASS	-	-

Remark(s) (a) ug/cm<sup>2</sup>: microgram per square centimeter

(b) MDL: Method detected limit

(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>

(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 Lead Content (Pb)

IEC62321-5:2013, acid digested and determined by AAS

Test Item(s)		Result	Limit (mg/kg)	MDL (mg/kg)
		21		
1	Lead (Pb)	151	1000	10
-	Conclusion	PASS	-	-

Remark(s): (a) mg/kg: milligrams per kilogram

(b) MDL: Method detected limit

(c) N.D.: Not detected (result is less than MDL)

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

Test Item(s)		Result		Limit (mg/kg)	MDL (mg/kg)
		15	16		
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
19	Nonabromo diphenyl ether	N.D.	N.D.	-	50
20	Decabromo diphenyl ether	N.D.	N.D.	-	50
-	Sum of PBBs	N.D.	N.D.	1000	-
-	Sum of PBDEs	N.D.	N.D.	1000	-
-	Conclusion	PASS	PASS	-	-

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

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

Test Item(s)			Result				Limit (%)	MDL(%)
			1+2	3	5	20		
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	-	-

Test Item(s)			Result				Limit (%)	MDL(%)
			7+9	8	10	11		
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	-	-

Test Item(s)			Result			Limit (%)	MDL(%)
			12+14+15	13	16+17+18		
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) MDL: Method detected limit  
(b) N.D.: Not detected (result is less than MDL)

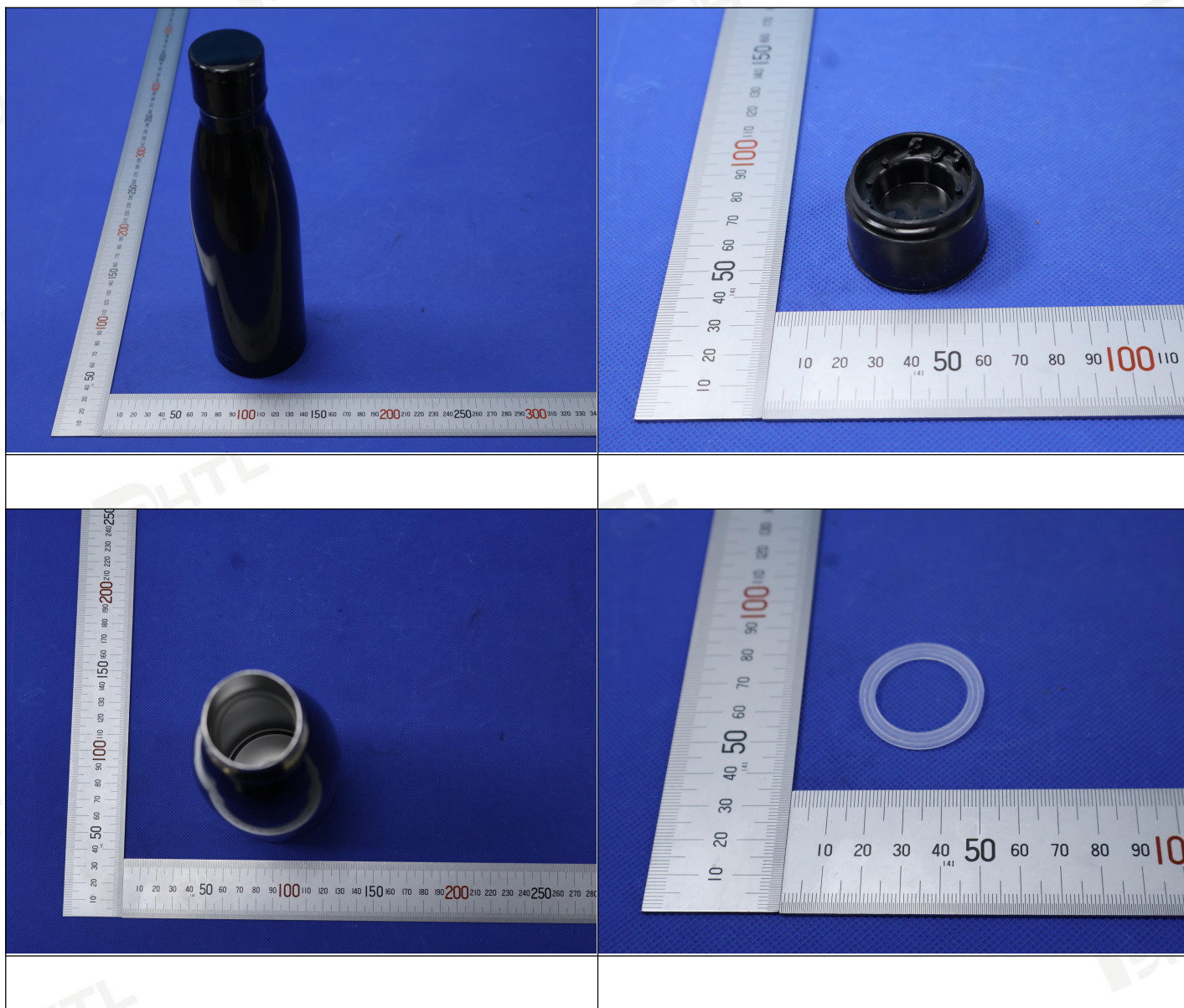
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## Photo(s):

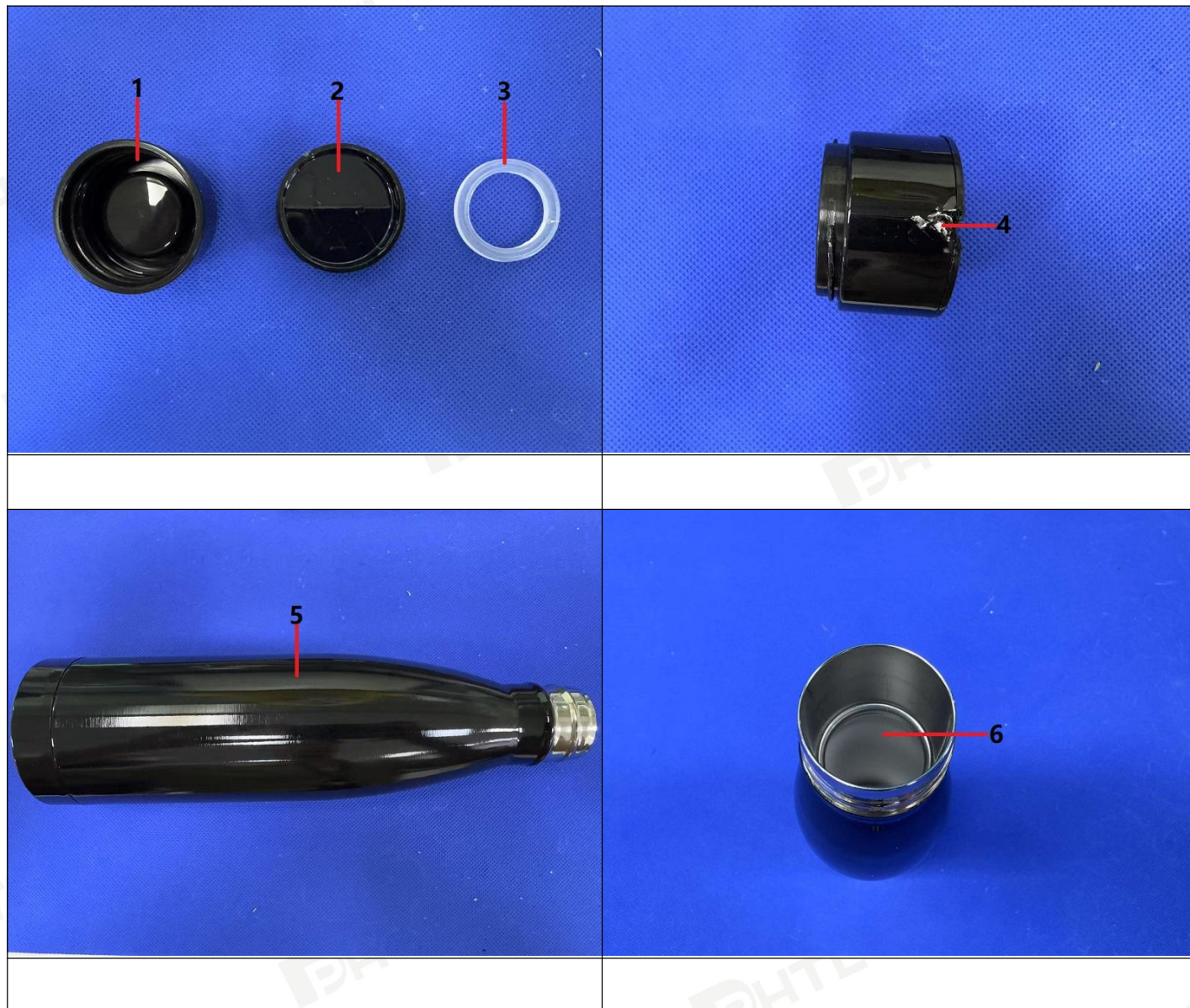


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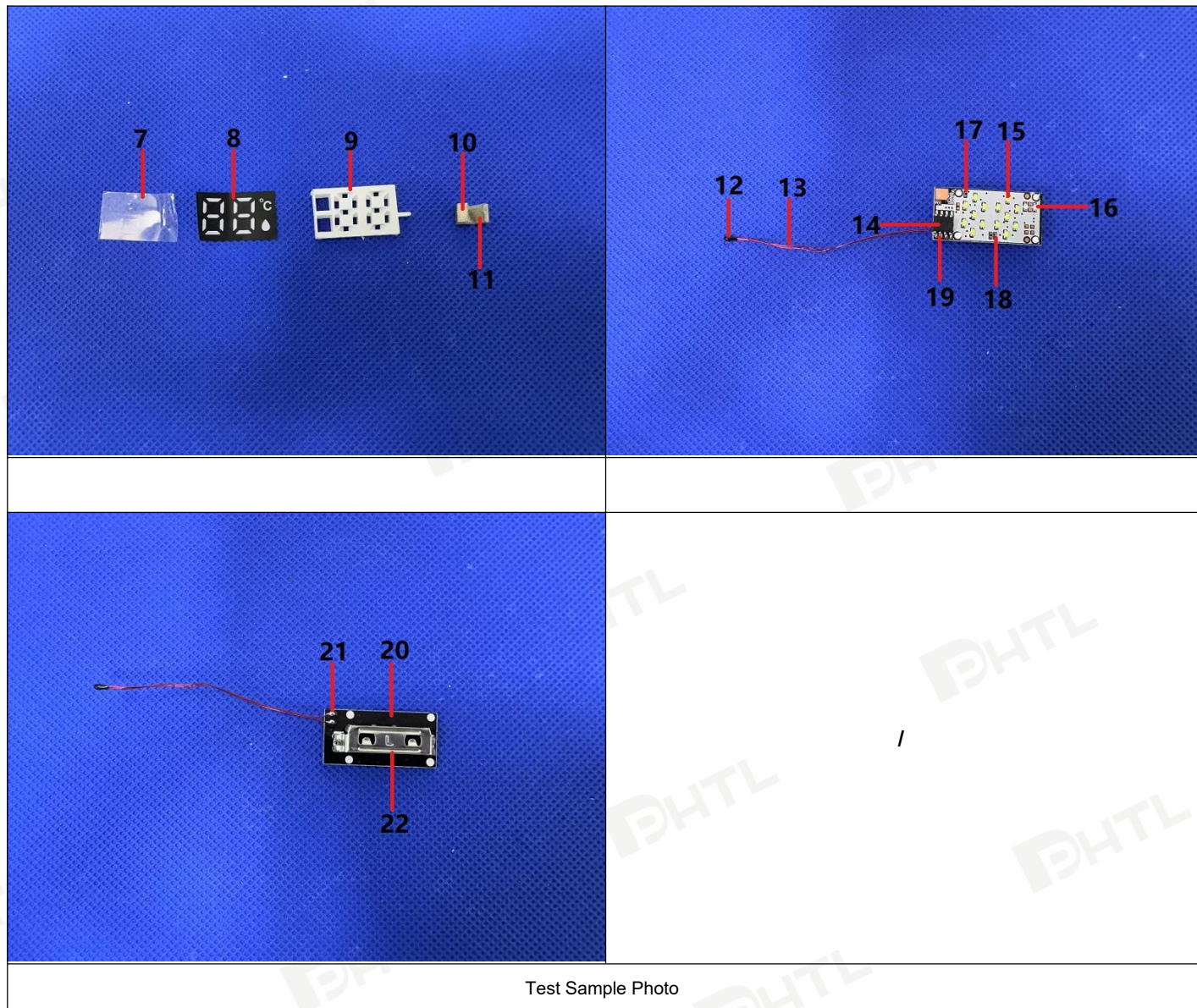


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