

TEST REPORT

Report No.:TBR-C-202412-0228-2

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Applicant Company : EMMEGI RICAMBI S.P.A.
Address : VIA M. SERENARI, 35, 40013 CASTEL, MAGGIORE, ITALY
Manufacturer : EMMEGI RICAMBI S.P.A.
Address : VIA M. SERENARI, 35, 40013 CASTEL, MAGGIORE, ITALY

Sample Information

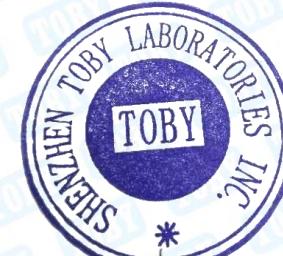
Sample Name : LKADATXXX ADAPTER
Trade Mark : LINK
Basic Model No. : LKADAT50
Series Model No. : LKADATXXX (X representative 0-9)
Sample Received Date : December 23, 2024
Testing Period : December 23, 2024~December 27, 2024
Date of issue : December 27, 2024
Results : Please refer to next page(s).

TEST REQUEST	CONCLUSION
As specified by client, based on the performed tests on submitted sample, the result of Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butylbenzyl Phthalate(BBP), Di-2-ethylhexyl Phthalate(DEHP) and Diisobutyl phthalate(DIBP) content comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.	Pass

Edited by:

Wick Wu

Approved by:

Jim Chan

Shenzhen Toby Laboratories Inc.

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TEST RESULTS:**1. Screening test**

Test method: With reference to IEC 62321-3-1:2013 and IEC 62321-8:2017. For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometer (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometer (GC-MS).

Sample No.	Sample Description	Heavy Metals and Flame Retardants					Phthalates			
		Cd	Pb	Hg	Cr ⁺	Br ⁺	DIBP	DBP	BBP	DEHP
1	Black rubber shell	BL	BL	BL	BL	BL	BL	BL	BL	BL
2	Black plastic shell	BL	BL	BL	BL	BL	BL	BL	BL	BL
3	White plastic shell	BL	BL	BL	BL	BL	BL	BL	BL	BL
4	Silver metal shell	BL	BL	BL	BL	N/A	N/A	N/A	N/A	N/A
5	Black plastic shell	BL	BL	BL	BL	BL	BL	BL	BL	BL
6	Silver metal pin	BL	BL	BL	BL	N/A	N/A	N/A	N/A	N/A
7	Green PCB board	BL	BL	BL	BL	X	BL	BL	BL	BL
8	Solder	BL	BL	BL	BL	N/A	N/A	N/A	N/A	N/A

NOTE :

- “BL” denotes below limit
- “OL” denotes over limit, further confirmation test was conducted
- “X” denotes inconclusive, further confirmation test was conducted
- “NA” denotes not applicable

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(Unit: mg/kg).

Element	Polymers	Metals	Composite material
Cd	BL≤(70-3σ)<X<(130+3σ)≤OL	BL≤(70-3σ)<X<(130+3σ)≤OL	LOD<X<(150+3σ)≤OL
Pb	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL
Hg	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL
Cr	BL≤(700-3σ)<X	BL≤(700-3σ)<X	BL≤(500-3σ)<X
Br	BL≤(300-3σ)<X	/	BL≤(250-3σ)<X

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- 3σ = The reproducibility of analytical instruments
- “/”= Not applicable
- LOD= Detection limit

- 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 RoHS Directive 2011/65/EU with amendment (EU) 2015/863.
- 4) ▼=For restricted substances PBBs and PBDEs, the results show the total Br content, the restricted substance was Cr(VI), and the results showed the total Cr content.
- 5) Screening results of phthalates are for primary screening, and further chemical testing by GC-MS (for DBP, BBP,DEHP and DIBP) are recommended to be performed if the concentration exceeds the below warning value(Unit: mg/kg).

Test item	Screening limit
Di-2-ethylhexyl phthalate(DEHP)	BL≤600<X
Dibutyl phthalate(DBP)	BL≤600<X
Benzylbutyl phthalate(BBP)	BL≤600<X
Diisobutyl phthalate(DIBP)	BL≤600<X

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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2. Chemical test for further confirmation.

Test method:

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

1) The test results of PBBs & PBDEs

Tested Items	Unit	MDL	Results		Limit
			(7)		
Polybrominated Biphenyls(PBBs) Content					
Monobromobiphenyl	mg/kg	50	N.D.	-	-
Dibromobiphenyl	mg/kg	50	N.D.	-	-
Tribromobiphenyl	mg/kg	50	N.D.	-	-
Tetrabromobiphenyl	mg/kg	50	N.D.	-	-
Pentabromobiphenyl	mg/kg	50	N.D.	-	-
Hexabromobiphenyl	mg/kg	50	N.D.	-	-
Heptabromobiphenyl	mg/kg	50	N.D.	-	-
Octabromobiphenyl	mg/kg	50	N.D.	-	-
Nonabromodiphenyl	mg/kg	50	N.D.	-	-
Decabromodiphenyl	mg/kg	50	N.D.	-	-
Total content	mg/kg	-	N.D.	1000	
Polybrominated Diphenylethers(PBDEs) Content					
Monobromodiphenyl ether	mg/kg	50	N.D.	-	-
Dibromodiphenyl ether	mg/kg	50	N.D.	-	-
Tribromodiphenyl ether	mg/kg	50	N.D.	-	-
Tetrabromodiphenyl ether	mg/kg	50	N.D.	-	-
Pentabromodiphenyl ether	mg/kg	50	N.D.	-	-
Hexabromodiphenyl ether	mg/kg	50	N.D.	-	-
Heptabromodiphenyl ether	mg/kg	50	N.D.	-	-
Octabromodiphenyl ether	mg/kg	50	N.D.	-	-



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Nonabromodiphenyl ether	mg/kg	50	N.D.	-
Decabromodiphenyl ether	mg/kg	50	N.D.	-
Total content	mg/kg	-	N.D.	1000

Remark :

- MDL = Method Detection Limit
- “-” = Not Regulated
- N.D.=Not Detected(<MDL or LOQ)
- mg/kg = ppm=parts per million

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 diphenylethers(PBDEs)	1000
Dibutyl Phthalate(DBP)	1000
Butylbenzyl Phthalate(BBP)	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	1000
Diisobutyl phthalate(DIBP)	1000



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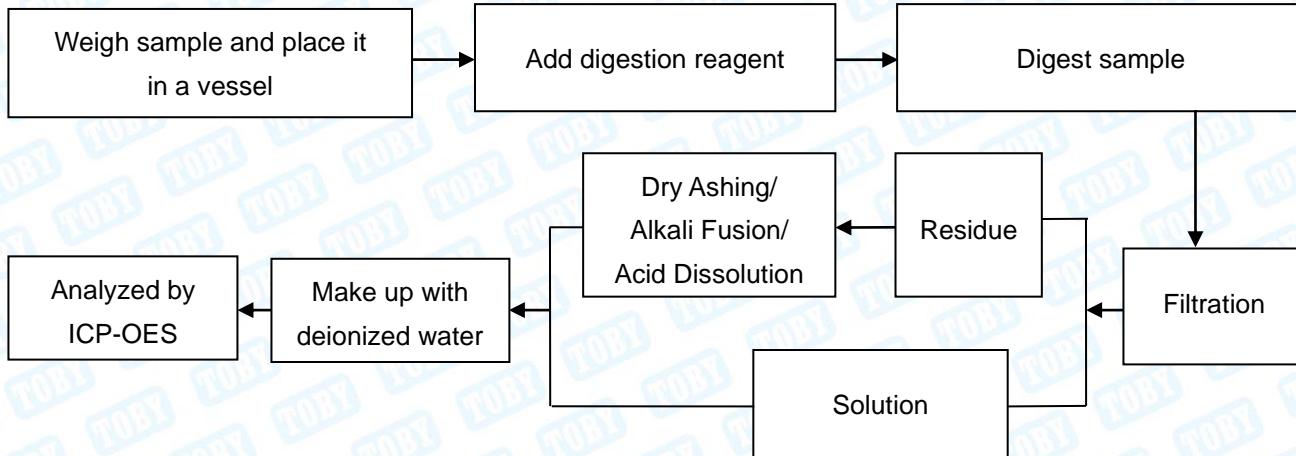
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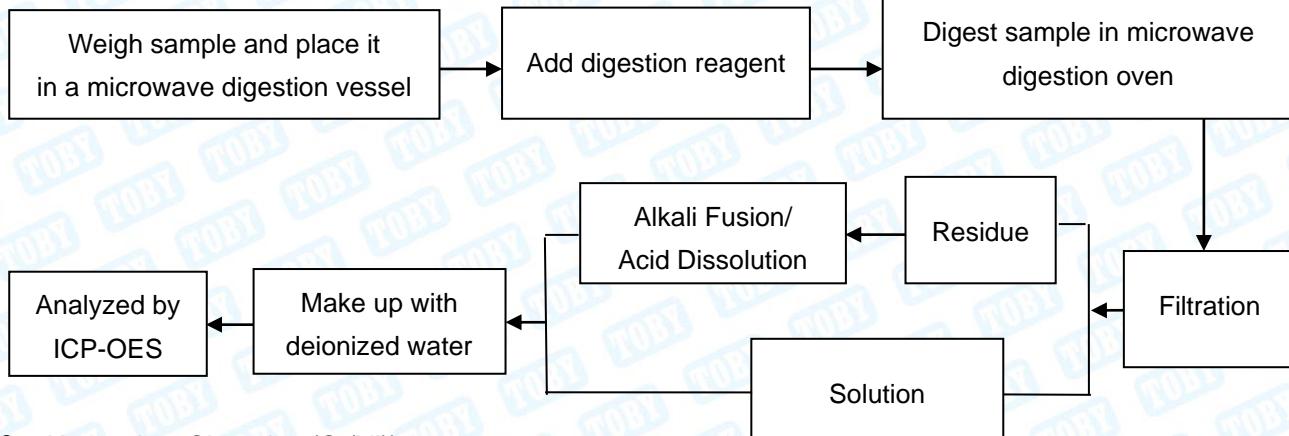
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Test Process

1. Lead(Pb) & Cadmium(Cd): IEC 62321-5:2013

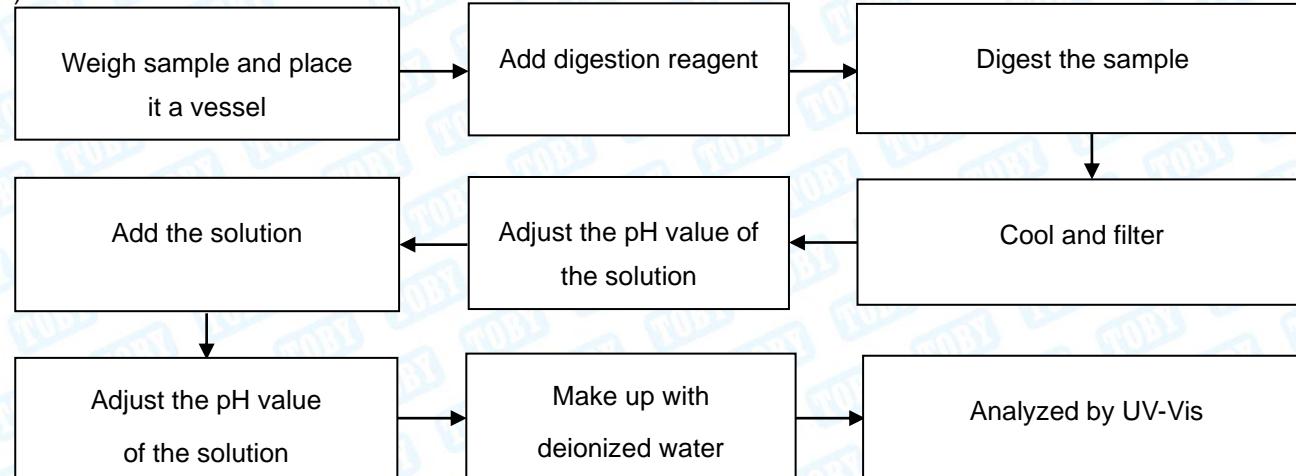


2. Mercury(Hg): IEC 62321-4:2013+AMD1:2017 CSV



3. Hexavalent Chromium(Cr(VI))

1) IEC 62321-7-2:2017



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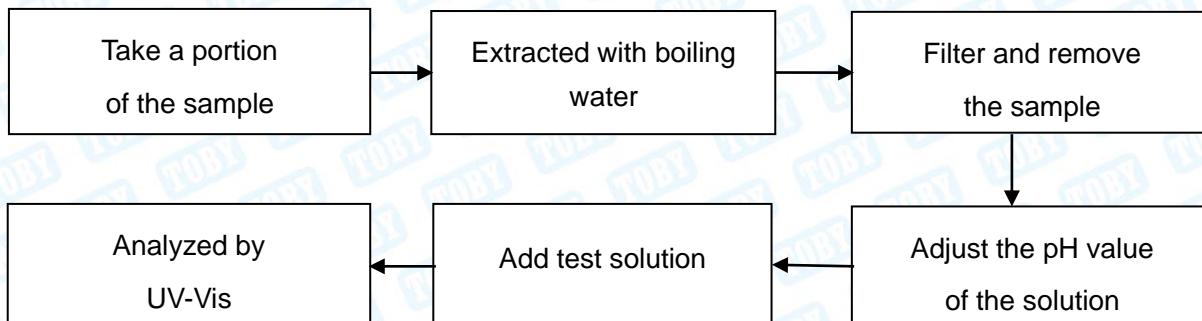
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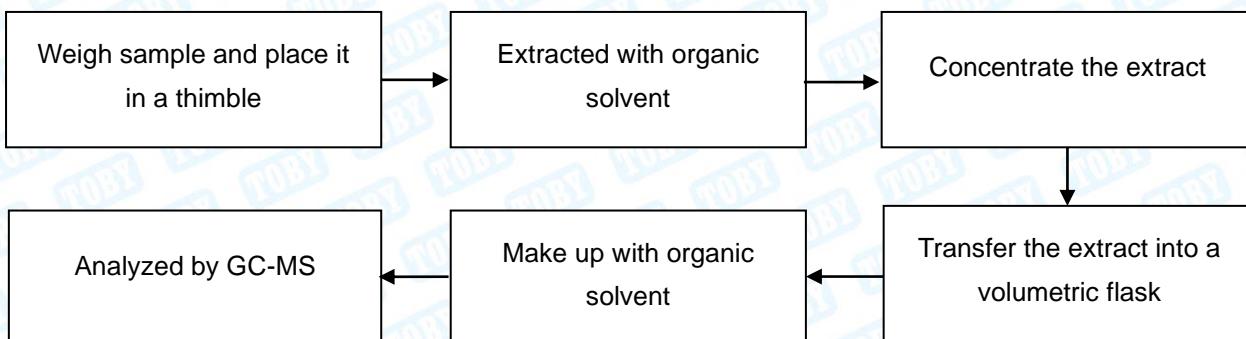
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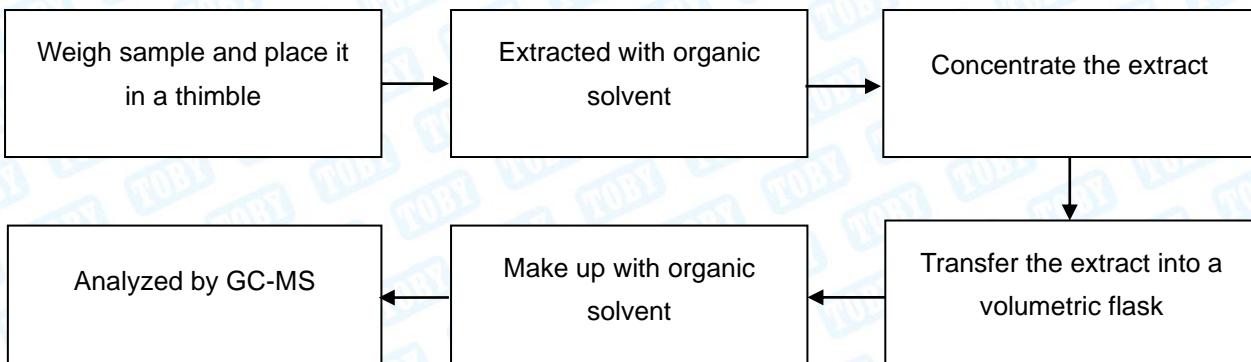
2) IEC 62321-7-1:2015



4. Polybrominated Biphenyls(PBBs) & Polybrominated Diphenyl Ethers(PBDEs) : IEC 62321-6:2015



5. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017



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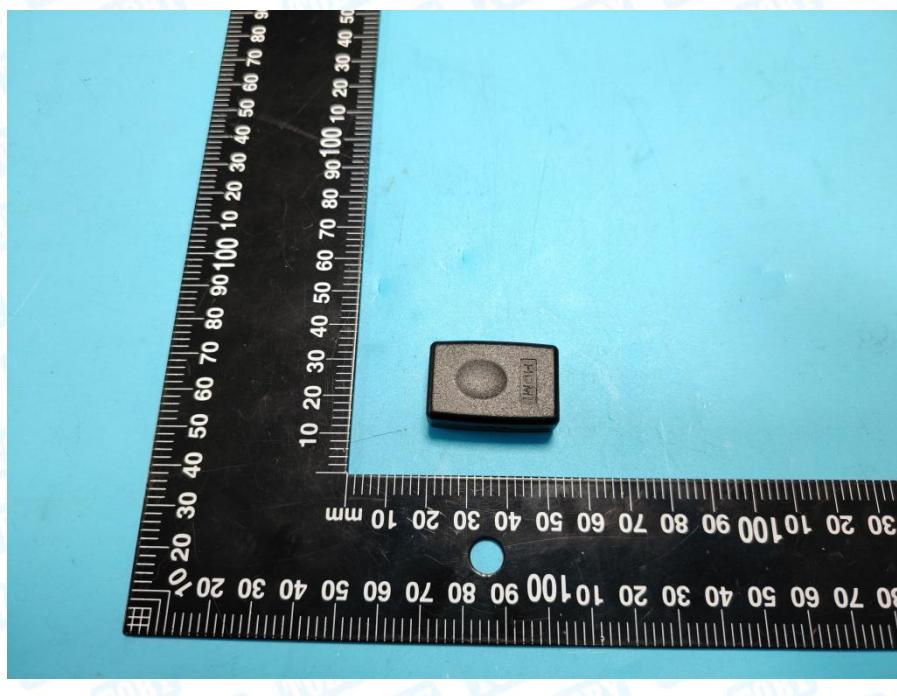
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Sample Photo(s)

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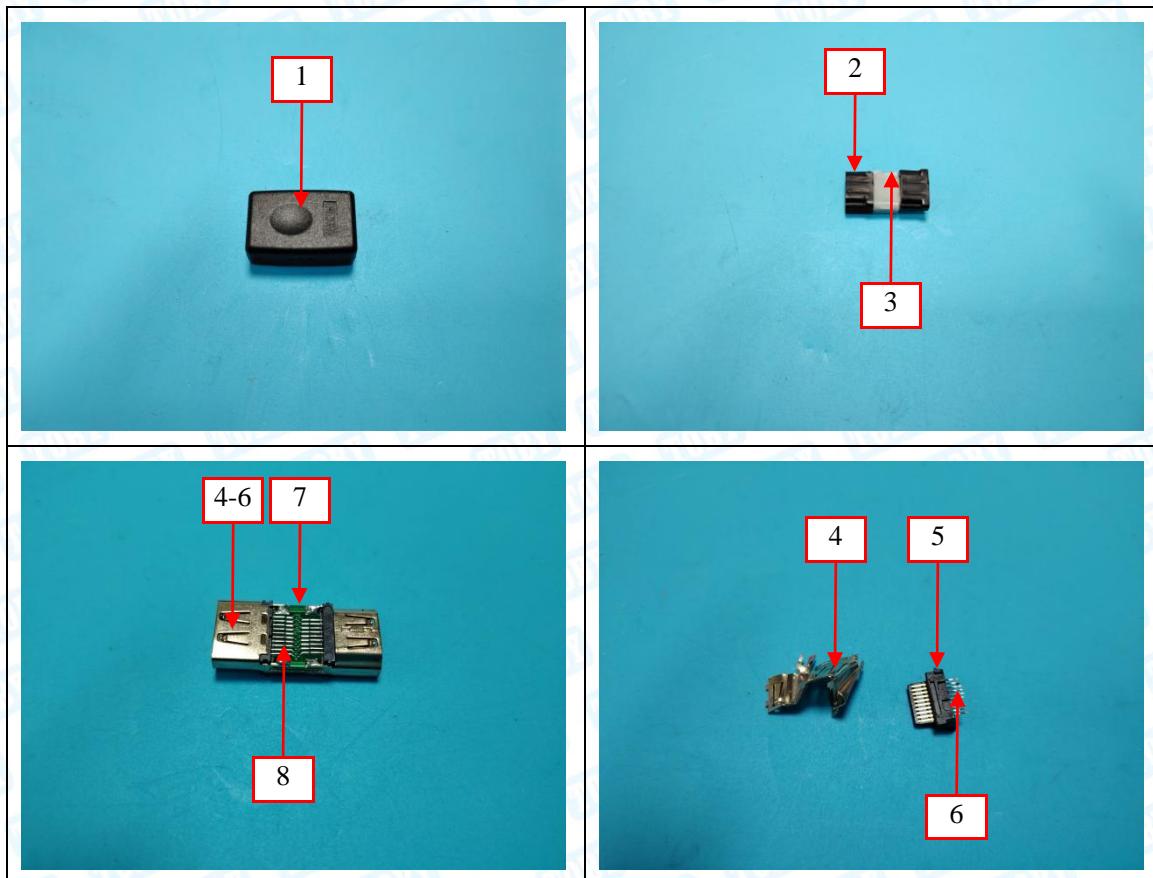
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**Statement:**

1. 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 conclusion. The client shall be responsible for the representativeness of sample and authenticity of materials, for which TOBY shall bear no responsibilities.
2. This test data is only responsible for the tested sample. 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 TOBY shall not bear related responsibilities.
3. The test report is effective only with both signature and specialized stamp. Without written approval of TOBY, this report can't be reproduced in full or in part.
4. The result(s) in no CMA logo report shall only be used for client's scientific research, teaching, internal quality control, product research and development, etc.. and just for internal reference.
5. The marked with special symbols in CNAS logo report means that the test item(s) was(were) currently not applying for CNAS accreditation.

***** END OF REPORT *****



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