

Report No. : B-R190321875

Date: Mar.08,2019

Page 1 of 12

Applicant : Ningbo Mingray Electric Appliance Co., Ltd.
Address : Binhai Industrial Park Ninghai Ningbo Zhejiang China
Client No. : 05748113
Manufacturer : Ningbo Mingray Electric Appliance Co., Ltd.
Address : Binhai Industrial Park Ninghai Ningbo Zhejiang China

Report on the submitted sample said to be

Sample Name : Head Light
Model No. : MR-001
Sample Received Date : Mar.06,2019
Complete Date : Mar.08,2019
Test Requested : As specified by client, to determine the Cadmium, Lead, Mercury, Hexavalent Chromium, PBBs / PBDEs, Bis-(2-ethylhexyl) Phthalate (DEHP), Diisobutyl phthalate(DIBP), Dibutyl Phthalate (DBP) & Benzylbutyl Phthalate (BBP) content in the submitted sample.

Test Result(s) :Conform to RoHS Directive 2011/65/EU annex II amending annex (EU)2015/863



Company No. 07113834

*FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Written by: Shen xiao
(Shen xiao)

Inspected by: Austin Zhong
(Austin Zhong)



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Test Method: With reference to IEC 62321

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs content by GC-MS.
- (6) Determination of phthalates by GC-MS.

Test Result(s):

Test item	Unit	Limit	Result			
			Plastic shell	Bandage	Battery case	Rubber parts
Cadmium (Cd).	mg/kg	100	4.7457	N.D.	6.8141	N.D.
Lead (Pb).	mg/kg	1000	33.7861	N.D.	18.5546	2.5378
Mercury (Hg).	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (Cr VI).	mg/kg	1000	18.2785	N.D.	4.329	N.D.
Polybrominated Biphenyls (PBBs)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Monobromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.

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Test item	Unit	Limit	Result			
			Plastic shell	Bandage	Battery case	Rubber parts
Nonabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Polybrominated Diphenyl Ethers (PBDEs)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Monobromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Dibromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tribromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tetrabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Pentabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Hexabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Heptabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Octabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Nonabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Decabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate(DIBP)	mg/kg	1000	N.D	N.D	N.D	N.D
Dibutyl Phthalate (DBP)	%(w/w)	1000	N.D	N.D	N.D	N.D
Benzylbutyl Phthalate (BBP)	%(w/w)	1000	N.D	N.D	N.D	N.D
Bis-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	1000	N.D	N.D	N.D	N.D

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Test item	Unit	Limit	Result			
			Circuit board	Solder	screw	Spring
Cadmium (Cd).	mg/kg	100	3.1212	N.D.	N.D.	N.D.
Lead (Pb).	mg/kg	1000	110.5979	N.D.	N.D.	N.D.
Mercury (Hg).	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (Cr VI).	mg/kg	1000	9.3987	N.D.	N.D.	70.2175
Polybrominated Biphenyls (PBBs)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Monobromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Polybrominated Diphenyl Ethers (PBDEs)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Monobromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.

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Test item	Unit	Limit	Result			
			Base	Lock nut	Shell body	Piezoelectric ceramics
Dibromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tribromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tetrabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Pentabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Hexabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Heptabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Octabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Nonabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Decabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate(DIBP)	mg/kg	1000	N.D.	N/A	N/A	N/A
Dibutyl Phthalate (DBP)	%(w/w)	1000	N.D.	N/A	N/A	N/A
Benzylbutyl Phthalate (BBP)	%(w/w)	1000	N.D.	N/A	N/A	N/A
Bis-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	1000	N.D.	N/A	N/A	N/A

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Test item	Unit	Limit	Result			
			Transparent plastic sheet	Black plastic parts	Battery pole piece	Transparent lamp holder
Cadmium (Cd).	mg/kg	100	N.D.	N.D.	N.D.	N.D.
Lead (Pb).	mg/kg	1000	N.D.	44.9659	N.D.	N.D.
Mercury (Hg).	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Hexavalent Chromium (Cr VI).	mg/kg	1000	N.D.	N.D.	96.3317	N.D.
Polybrominated Biphenyls (PBBs)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Monobromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Polybrominated Diphenyl Ethers (PBDEs)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Monobromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.

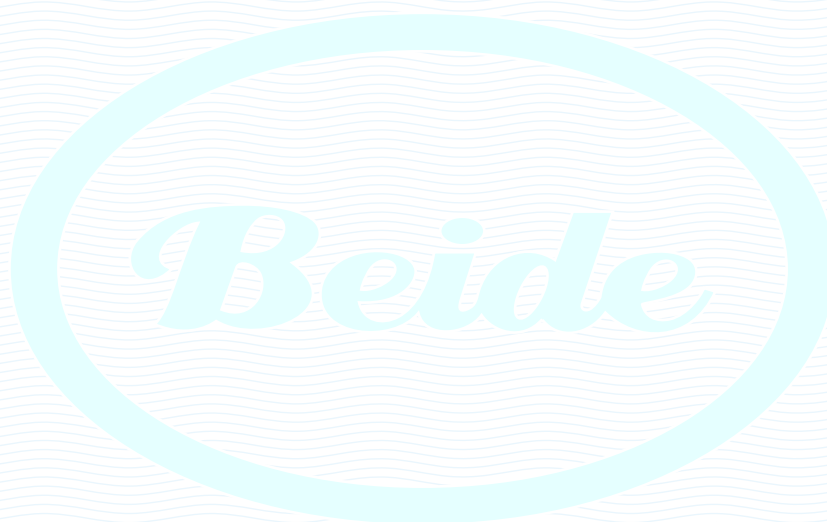
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Test item	Unit	Limit	Result			
			Transparent plastic sheet	Black plastic parts	Battery pole piece	Transparent lamp holder
Dibromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tribromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Tetrabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Pentabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Hexabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Heptabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Octabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Nonabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Decabromodiphenyl Ether	mg/kg	/	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate(DIBP)	mg/kg	1000	N.D.	N.D.	N/A	N.D.
Dibutyl Phthalate (DBP)	%(w/w)	1000	N.D.	N.D.	N/A	N.D.
Benzylbutyl Phthalate (BBP)	%(w/w)	1000	N.D.	N.D.	N/A	N.D.
Bis-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	1000	N.D.	N.D.	N/A	N.D.

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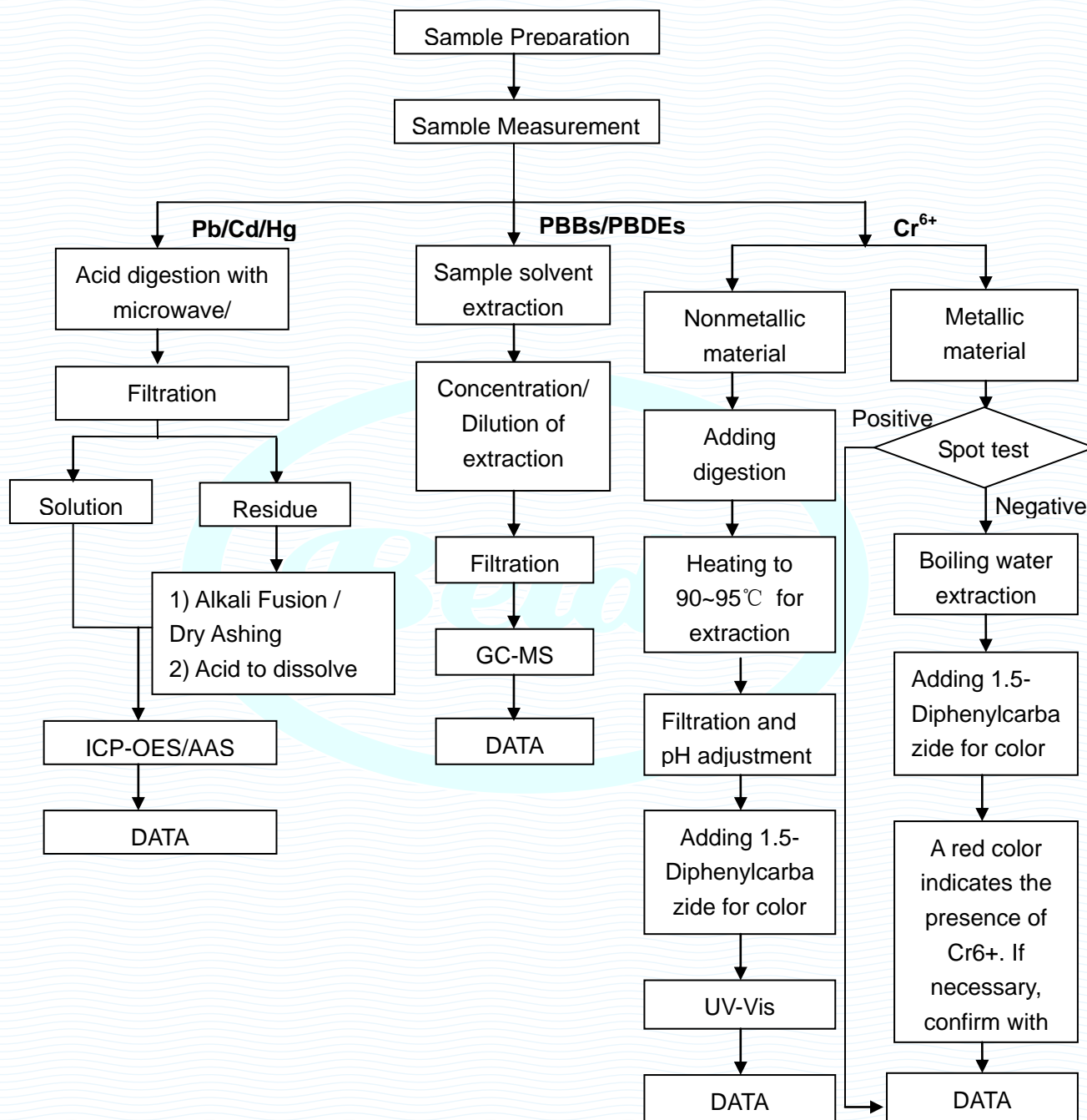
Note:

1. mg/kg = milligram per kilogram = ppm
2. N.D. = Not Detected (<MDL)
3. N/A = Not Applicable
4. MDL = Method detection limit



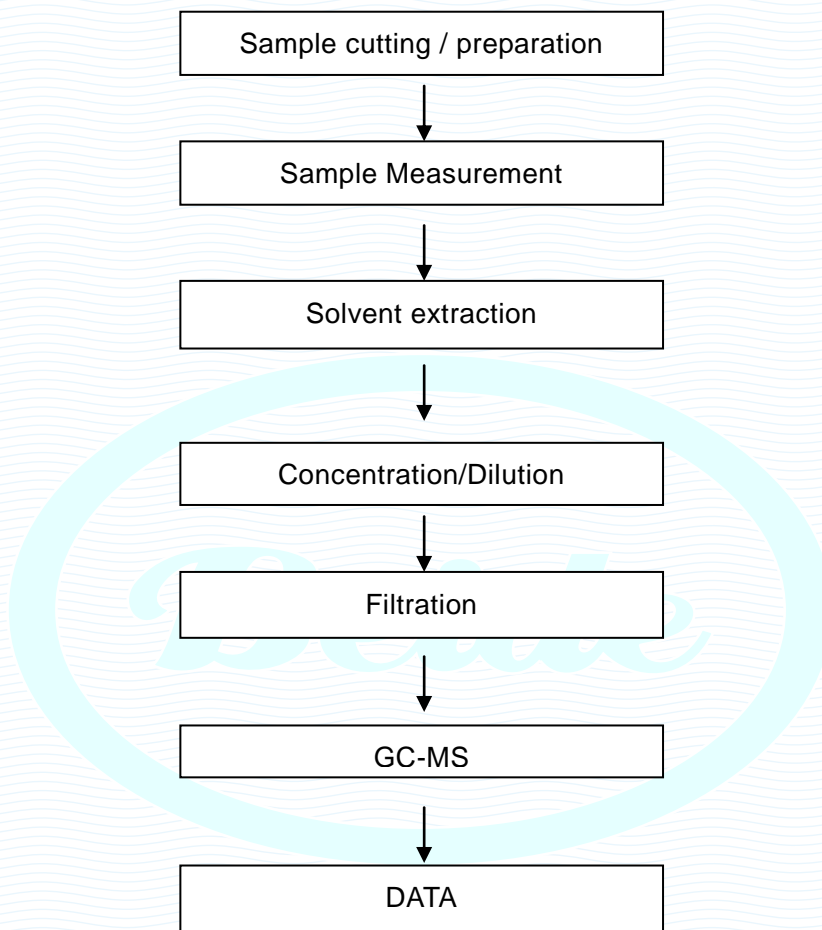
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RoHS Testing Flow Chart



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Phthalates Testing Flow Chart

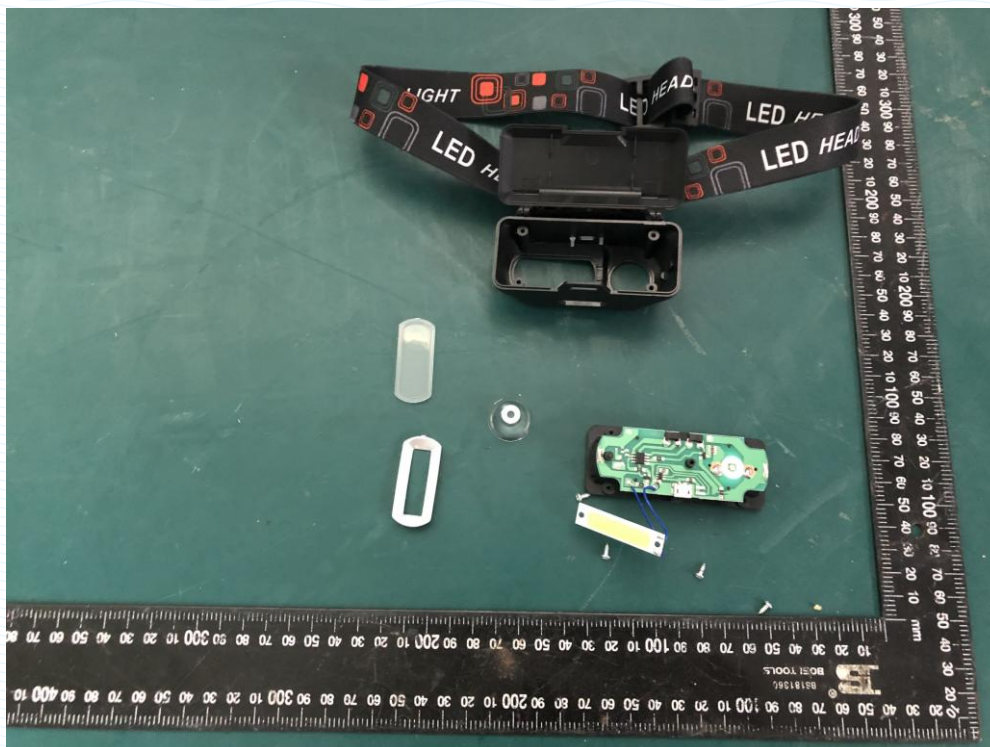


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Photographs of Samples



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End of Report

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