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Mid Ocean Brands B.V. Applicant:

7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong Address:

The following sample(s) and sample information was/were submitted and identified by client as:

Extendable aluminium torch Sample Name:

MO8621 Model/Style/Item #:

20-Feb-2023 **Receiving Date:**

From 20-Feb-2023 to 24-Feb-2023 **Test Period:**

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 |

Mark Mai (Technical Director)

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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)

| Oan Na | Total Bout(s) | Results | | | | |
|----------|-----------------------------------|---------|-------------|----|----|----|
| Seq. No. | Tested Part(s) | Pb | Pb Cd Hg Cr | | Br | |
| 1 | Silvery metal, tube | BL | BL | BL | BL | NA |
| 2 | Black printed silvery metal, tube | BL | BL | BL | BL | NA |
| 3 | Silvery metal, holder | BL | BL | BL | BL | NA |
| 4 | Silvery metal, magnet | BL | BL | BL | BL | NA |
| 5 | Silvery metal, battery | BL | BL | BL | BL | NA |
| 6 | White plastic,holder | BL | BL | BL | BL | BL |
| 7 | Silvery metal, small spring | BL | BL | BL | Х | NA |
| 8 | Silvery metal, ring | BL | BL | BL | BL | NA |
| 9 | Silvery metal, big spring | BL | BL | BL | Х | NA |
| 10 | Transparent plastic, cover | BL | BL | BL | BL | BL |
| 11 | Transparent body, LED | BL | BL | BL | BL | Х |
| 12 | Silvery metal, solder | BL | BL | BL | BL | NA |
| 13 | Green PCB | BL | BL | BL | BL | X |
| 14 | Dumb white plastic,holder | BL | BL | BL | BL | BL |
| 15 | White plastic, button | BL | BL | BL | BL | BL |
| 16 | Silvery metal, contact plate | BL | BL | BL | BL | NA |
| 17 | Black soft plastic, cover | BL | BL | BL | BL | BL |
| 18 | Silvery metal, holder | BL | BL | BL | BL | NA |
| 19 | Silvery metal, long spring | BL | BL | BL | Х | NA |
| 20 | Silvery metal, shaft | BL | BL | BL | BL | NA |

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.

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| 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

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.

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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 | DI. |
|------------|------------------------------|----------|----------|----------|-------|-----|
| Compound | | 7 | 9 | 19 | Limit | RL |
| 1 | Hexavalent Chromium (Cr(VI)) | Negative | Negative | Negative | # | _ |
| Conclusion | | PASS | PASS | PASS | - | - |

Remark(s) (a) ug/cm²: microgram per square centimeter

(b) RL: Report Limit

(c) Negative = Sample Cr(VI) concentration is less than 0.10 ug/cm² Positive = Sample Cr(VI) concentration is greater than 0.13 ug/cm²

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

| Compound | | Material 13 | | Limit | RL (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 | |
| 11 | Monobromo diphenyl ether | N.D. | N.D. | - | 50 | |
| 12 | Dibromo diphenyl ether | N.D. | N.D. | - | 50 | |

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⁽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.



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| 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 | Hexabromo diphenyl ether N.D. | | - | 50 |
| 17 | Heptabromo diphenyl ether | N.D. | N.D. | - | 50 |
| 18 | Octabromo diphenyl ether | yl ether N.D. N.D. | | - | 50 |
| 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)

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

| | Com | an a un d | | Mat | erial | | Limit (0/) | DI (9/) |
|---|------------|--|------|------|-------|-------|------------|---------|
| | Compound | | 6+10 | 11 | 13 | 14+15 | 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 | - | - |

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| | Compound | | Material | Limit (%) | RL(%) |
|----------|------------|--|----------|-----------|-------|
| Compound | | ipouliu | 17 | | |
| 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)

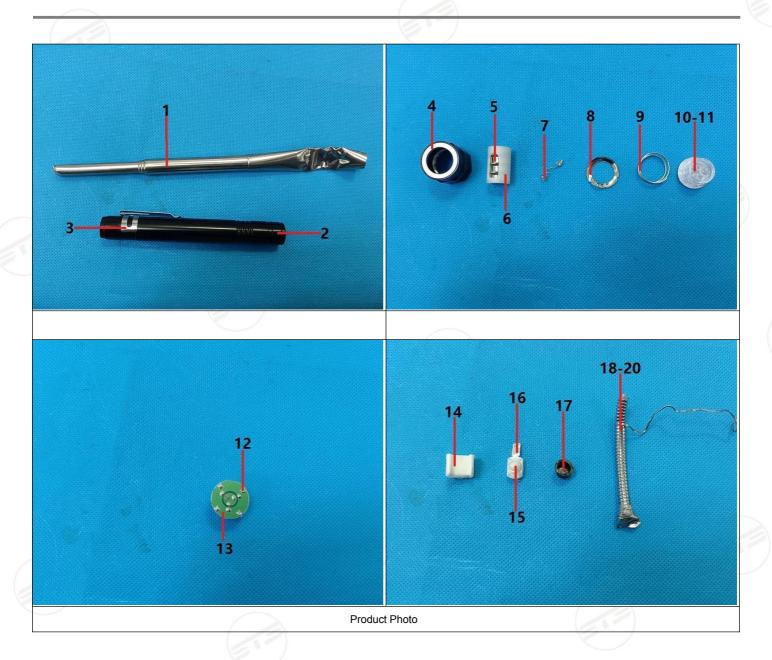
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