



## Test Report

No. HKTEC2003086102

Date: 04 Sep 2020

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TRUE TONE INDUSTRIES LTD.

FLAT D & E, 7/F., WINNER FACTORY BUILDING

55 HUNG TO RD.

KWUN TONG

KLN HONG KONG

The following sample(s) was/were submitted and identified on behalf of the clients as : STANDARD STAINLESS STEEL METAL CONTACT DOMES

SGS Job No. : 4672665 - HK

Supplier : TRUE TONE INDUSTRIES LIMITED

Manufacturer : TRUE TONE INDUSTRIES LIMITED

Country of Origin : HONG KONG

Country of Destination : HONG KONG

Date of Sample Received : 26 Aug 2020

Testing Period : 26 Aug 2020 - 02 Sep 2020

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of  
SGS Hong Kong Limited.

Chan Chun Kit, Dickson  
Operation Manager

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Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description   |
|--------------|------------------|---------------|
| 1            | HKT20-030861.002 | Silvery metal |

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

### RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

With reference to IEC62321-7-1:2015, analyzed by UV-Vis. (Decision Rule: please refer to appendix 1: Category 4)

| <u>Test Item(s)</u>           | <u>Limit</u> | <u>Unit</u>        | <u>MDL</u> | <u>002</u> |
|-------------------------------|--------------|--------------------|------------|------------|
| Cadmium (Cd)                  | 100          | mg/kg              | 2          | ND         |
| Lead (Pb)                     | 1,000        | mg/kg              | 5          | ND         |
| Mercury (Hg)                  | 1,000        | mg/kg              | 2          | ND         |
| Hexavalent Chromium (Cr(VI))▼ | -            | µg/cm <sup>2</sup> | 0.10       | ND         |
| Sum of PBBs                   | 1,000        | mg/kg              | -          | ND         |
| Monobromobiphenyl             | -            | mg/kg              | 5          | ND         |
| Dibromobiphenyl               | -            | mg/kg              | 5          | ND         |
| Tribromobiphenyl              | -            | mg/kg              | 5          | ND         |
| Tetrabromobiphenyl            | -            | mg/kg              | 5          | ND         |
| Pentabromobiphenyl            | -            | mg/kg              | 5          | ND         |
| Hexabromobiphenyl             | -            | mg/kg              | 5          | ND         |
| Heptabromobiphenyl            | -            | mg/kg              | 5          | ND         |
| Octabromobiphenyl             | -            | mg/kg              | 5          | ND         |
| Nonabromobiphenyl             | -            | mg/kg              | 5          | ND         |
| Decabromobiphenyl             | -            | mg/kg              | 5          | ND         |
| Sum of PBDEs                  | 1,000        | mg/kg              | -          | ND         |
| Monobromodiphenyl ether       | -            | mg/kg              | 5          | ND         |
| Dibromodiphenyl ether         | -            | mg/kg              | 5          | ND         |
| Tribromodiphenyl ether        | -            | mg/kg              | 5          | ND         |

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| <u>Test Item(s)</u>                 | <u>Limit</u> | <u>Unit</u> | <u>MDL</u> | <u>002</u> |
|-------------------------------------|--------------|-------------|------------|------------|
| Tetrabromodiphenyl ether            | -            | mg/kg       | 5          | ND         |
| Pentabromodiphenyl ether            | -            | mg/kg       | 5          | ND         |
| Hexabromodiphenyl ether             | -            | mg/kg       | 5          | ND         |
| Heptabromodiphenyl ether            | -            | mg/kg       | 5          | ND         |
| Octabromodiphenyl ether             | -            | mg/kg       | 5          | ND         |
| Nonabromodiphenyl ether             | -            | mg/kg       | 5          | ND         |
| Decabromodiphenyl ether             | -            | mg/kg       | 5          | ND         |
| Dibutyl Phthalate (DBP)             | 1,000        | mg/kg       | 50         | ND         |
| Benzylbutyl Phthalate (BBP)         | 1,000        | mg/kg       | 50         | ND         |
| Bis-(2-ethylhexyl) Phthalate (DEHP) | 1,000        | mg/kg       | 50         | ND         |
| Diisobutyl Phthalate (DIBP)         | 1,000        | mg/kg       | 50         | ND         |

### Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

IEC 62321 series is equivalent to EN 62321 series

[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

(2) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm<sup>2</sup>. The sample coating is considered to contain Cr(VI)

b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm<sup>2</sup>). The coating is considered a non-Cr(VI) based coating

c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive - unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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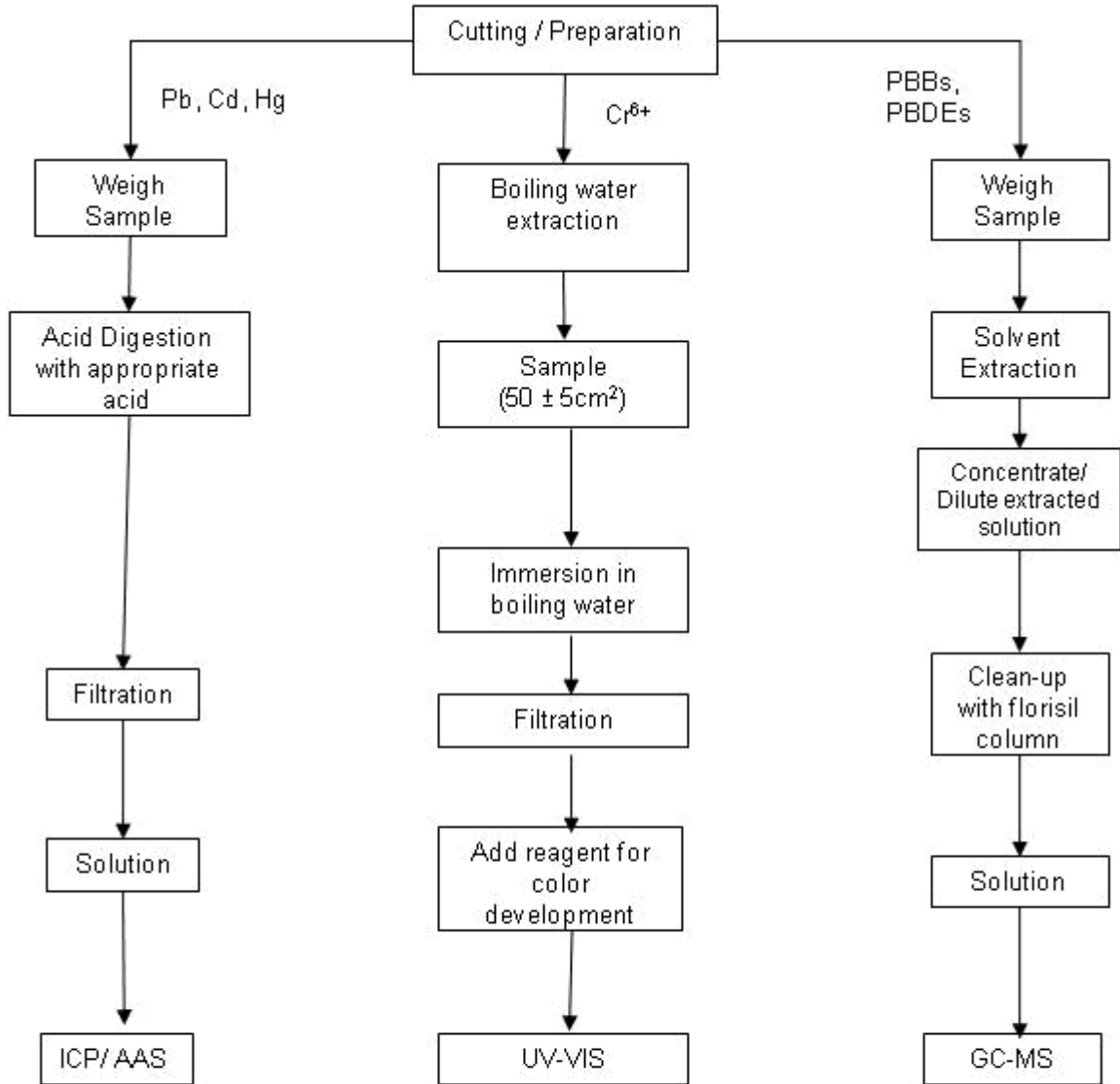
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**Appendix 1**

| Category | Decision Rule Statement  |
|----------|--|
| 1        | The decision rule for conformity reporting is based on the non-binary statement with guard band (is equal to the expanded measurement uncertainty with a 95% coverage probability, $w = U95$ ) in ILAC-G8:09/2019 Clause 4.2.3.<br>A. "Pass - the measured value is within (or below / above) the acceptance limit, where the acceptance limit is below / above to the guard band." or "Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk is up to 2.5%."<br>B. "Conditional Pass - The measured values were observed in tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values exceeded / out of tolerance. When the measured result is close to the tolerance, the specific false accept risk is up to 50%."<br>C. "Conditional Fail - One or more measured values were observed out of tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values were in tolerance. When the measured result is close to the tolerance, the specific false reject risk is up to 50%."<br>D. "Fail - the measured value is out of (or below / above) the tolerance limit added / subtracted to the guard band." or "Fail - One or more measured values were observed out of tolerance at the points tested". The specific false reject risk is up to 2.5%. |
| 2        | The decision rule for conformity reporting is based on BS EN 1811:2011+A1:2015: Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin in Section 9.2 interpretation of results.   |
| 3        | The decision rule for conformity reporting is based on the general consideration of simple acceptance as stated in ISO/IEC Guide 98-3: "Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM 1995)", and more specifically for analytical measurements to the EURACHEM/CITAC Guide 2012 "Quantifying Uncertainty in Analytical Measurement".  |
| 4        | The decision rule for conformity reporting is according to the IEC 62321-7-1 Edition 1.0 2015-09 Section 7: Table 1-(comparison to standard and interpretation of result)  |
| 5        | The decision rule for conformity reporting is according to the IEC 62321-3-1 Edition 1.0 2013-06 Annex A.3 interpretation of result.   |
| 6        | The decision rule for conformity reporting is according to the GB/T 26125-2011 Annex A to H  |
| 7        | The decision rule for conformity reporting is according to the requested specification or standard (ASTM F963-17 section 4.3.5)  |
| 8        | The decision rule for conformity reporting is according to the requested specification or standard (AS/NZS ISO 8124 Part 3 section 4.2)  |
| Remark   | If the decision rule is not feasible to be used and the uncertainty of the result is able to be provided, the uncertainty range of the result will be shown in the report. Otherwise, only result will be shown in the report.   |

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The metallic samples were dissolved totally by pre-conditioning method according to above flow chart for Cd, Pb and Hg contents analysis.

Operator :

Chiu Kan Yuen/ Tang Koon Pang (Acid digestion)

Nick Liu (Hexavalent Chromium)

Kent Wan (PBBs and PBDEs)

Section Chief :

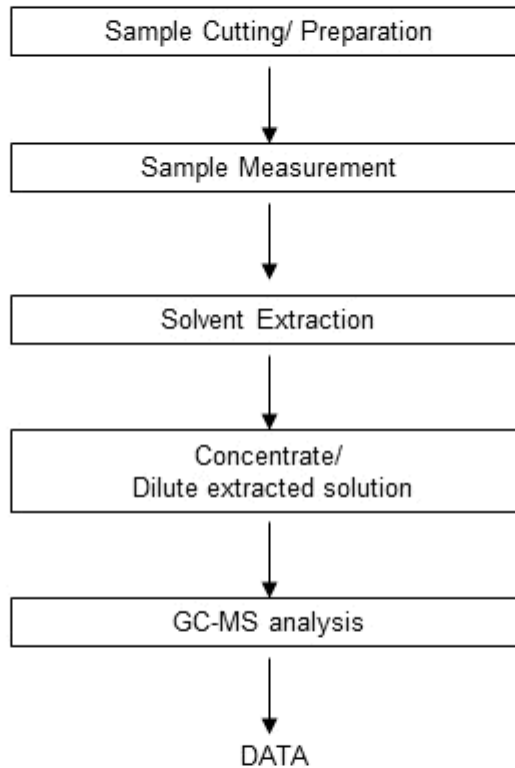
Chan Chun Kit (Dickson Chan)

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**Flowchart for Phthalates measurement**

Method: IEC 62321-8:2017



Tested by : Lumpy Lee  
 Checked by : Edmund Kwan

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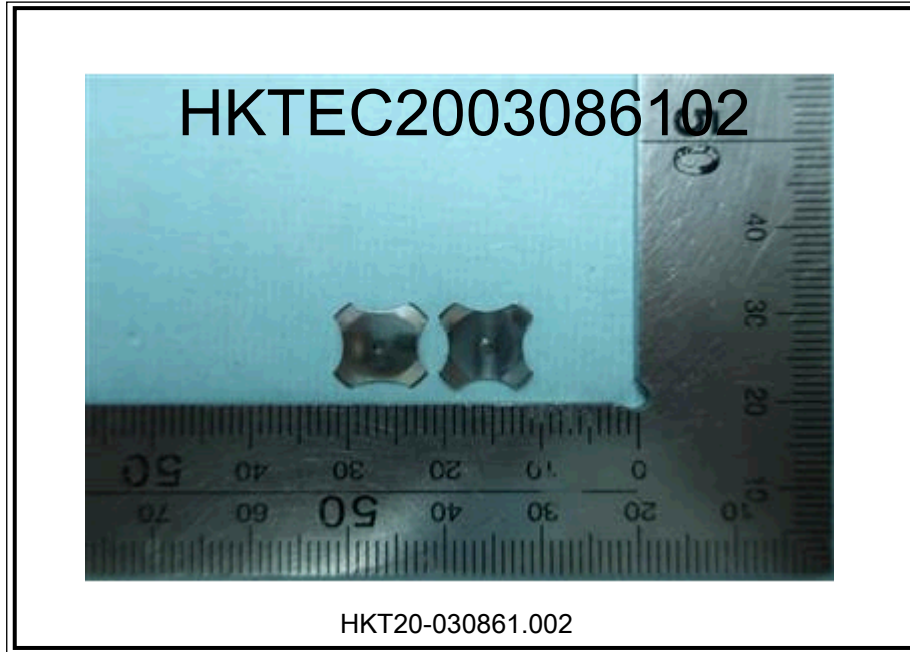
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Sample photo:



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\*\*\* End of Report \*\*\*

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