

Test Report

No. : CE/2019/64659

Date : 2019/07/04

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KESTER AN ILLINOIS TOOL WORKS COMPANY
800 W. THORNDALE AVE. ITASCA, IL 60143

The following samples was/were submitted and identified by/on behalf of the applicant as :


Sample Submitted By : KESTER AN ILLINOIS TOOL WORKS COMPANY
Sample Description : SE-CURE 9753 RJ9
Sample Receiving Date : 2019/06/27
Testing Period : 2019/06/27 to 2019/07/04

Test Requested :

- (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).
- (2) Please refer to next pages for the other item(s).

Test Result(s) : Please refer to following pages.

Conclusion : (1) Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.


Troy Chang / Manager - Test
Signed for and behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



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Test Result(s)

PART NAME No.1 : TRANSPARENT LIQUID

| Test Item(s) | Unit | Method | MDL | Result | Limit |
|----------------------------|-------|--|------|--------|-------|
| | | | | No.1 | |
| Cadmium (Cd) | mg/kg | With reference to IEC 62321-5 (2013) and performed by ICP-AES. | 2 | n.d. | 100 |
| Lead (Pb) | mg/kg | With reference to IEC 62321-5 (2013) and performed by ICP-AES. | 2 | n.d. | 1000 |
| Mercury (Hg) | mg/kg | With reference to IEC 62321-4:2013+AMD1:2017 and performed by ICP-AES. | 2 | n.d. | 1000 |
| Hexavalent Chromium Cr(VI) | mg/kg | With reference to IEC 62321-7-2 (2017) and performed by UV-VIS. | 8 | n.d. | 1000 |
| Sum of PBBs | mg/kg | With reference to IEC 62321-6 (2015) and performed by GC/MS. | - | n.d. | 1000 |
| Monobromobiphenyl | mg/kg | | 5 | n.d. | - |
| Dibromobiphenyl | mg/kg | | 5 | n.d. | - |
| Tribromobiphenyl | mg/kg | | 5 | n.d. | - |
| Tetrabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Pentabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Hexabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Heptabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Octabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Nonabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Decabromobiphenyl | mg/kg | | 5 | n.d. | - |
| Sum of PBDEs | mg/kg | | - | n.d. | 1000 |
| Monobromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Dibromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Tribromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Tetrabromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Pentabromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Hexabromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Heptabromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Octabromodiphenyl ether | mg/kg | | 5 | n.d. | - |
| Nonabromodiphenyl ether | mg/kg | 5 | n.d. | - | |
| Decabromodiphenyl ether | mg/kg | 5 | n.d. | - | |

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| Test Item(s) | Unit | Method | MDL | Result | Limit |
|---|-------|---|-----|--------|-------|
| | | | | No.1 | |
| BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | 1000 |
| DBP (Dibutyl phthalate) (CAS No.: 84-74-2) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | 1000 |
| DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | 1000 |
| DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | 1000 |
| DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | - |
| DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | - |
| DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0) | mg/kg | With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | - |
| Halogen-Iodine (I) (CAS No.: 14362-44-8) | mg/kg | With reference to BS EN 14582 (2016). Analysis was performed by IC. | 50 | n.d. | - |

Note :

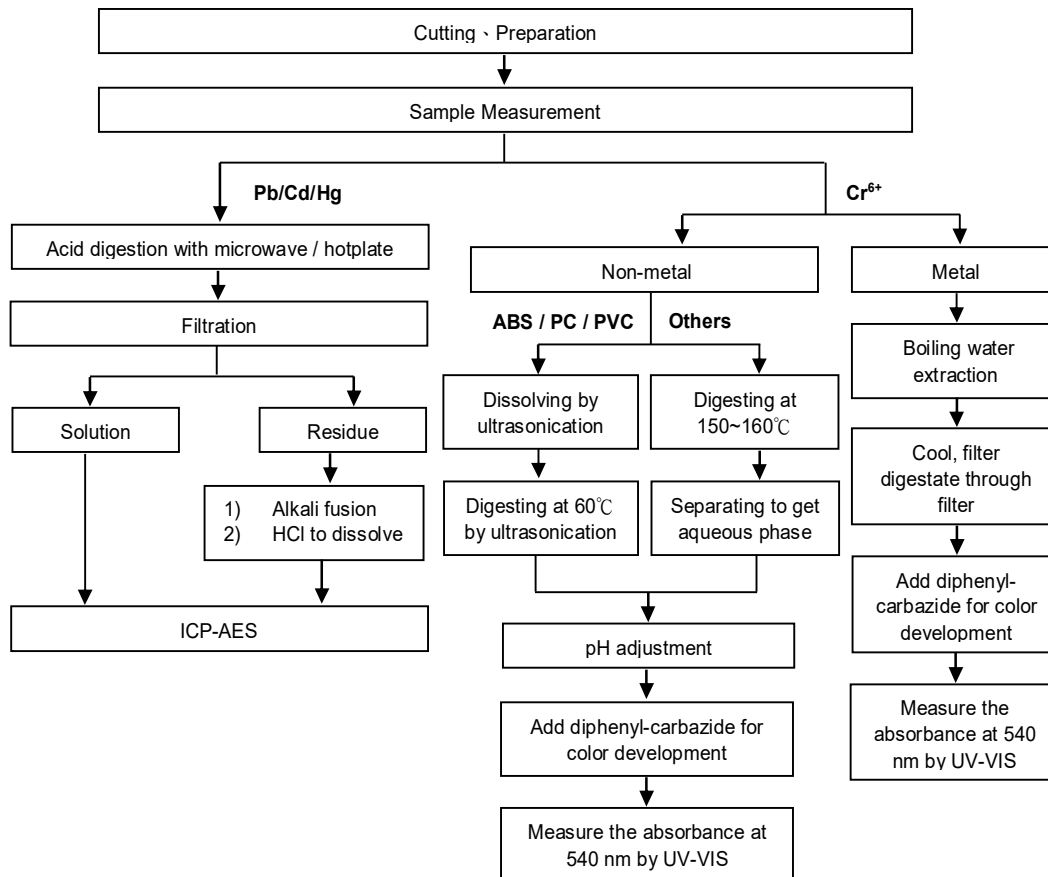
1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected = less than MDL
4. " - " = Not Regulated

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Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)

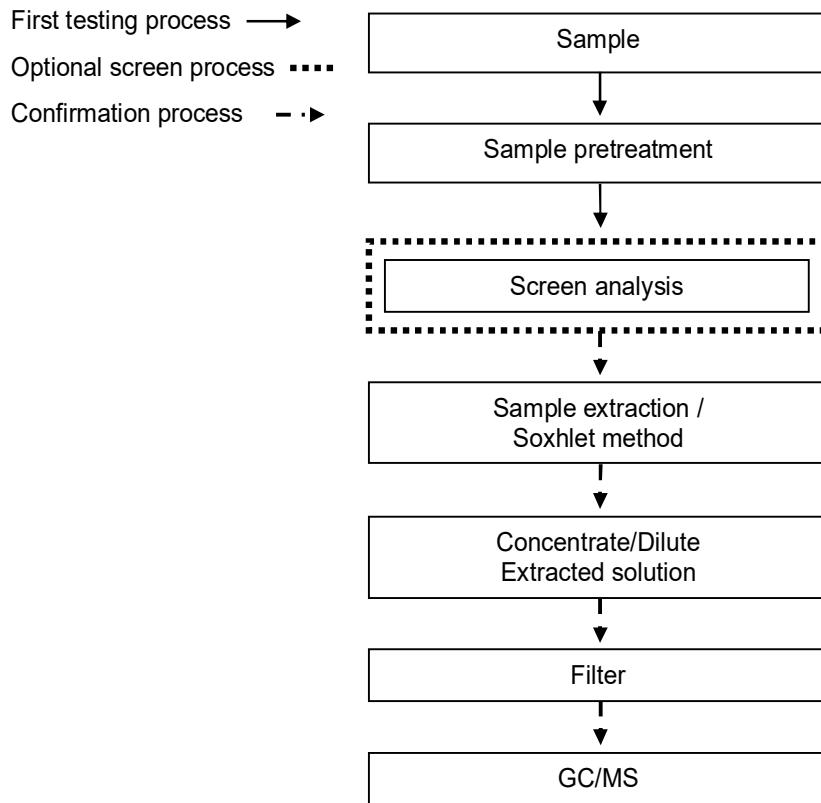
- Technician : Rita Chen
- Supervisor: Troy Chang



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Analytical flow chart – PBB / PBDE

- Technician : Yaling Tu
- Supervisor: Troy Chang



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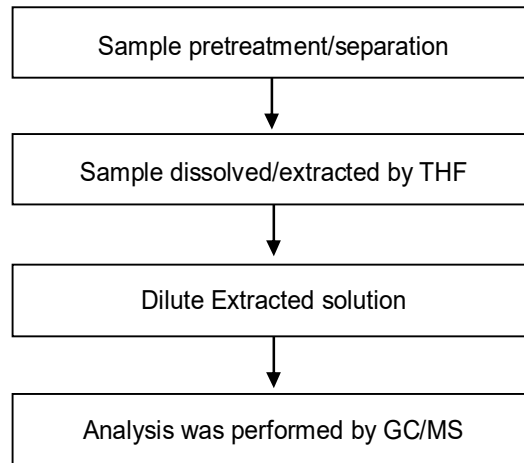
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Analytical flow chart - Phthalate

- Technician: Yaling Tu
- Supervisor: Troy Chang

【Test method: IEC 62321-8】

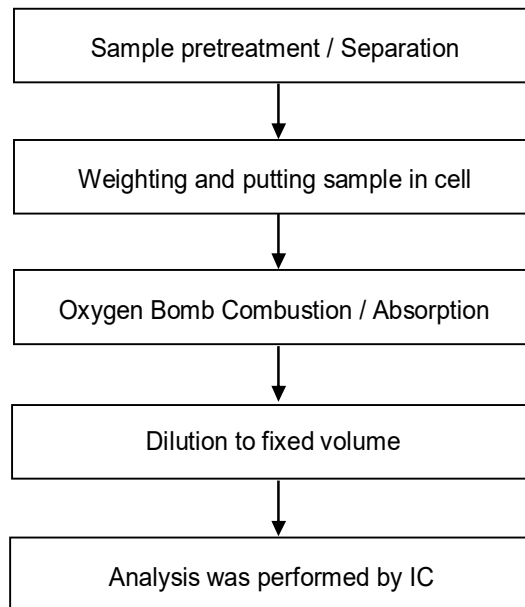


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Analytical flow chart - Halogen

- Technician: Rita Chen
- Supervisor: Troy Chang



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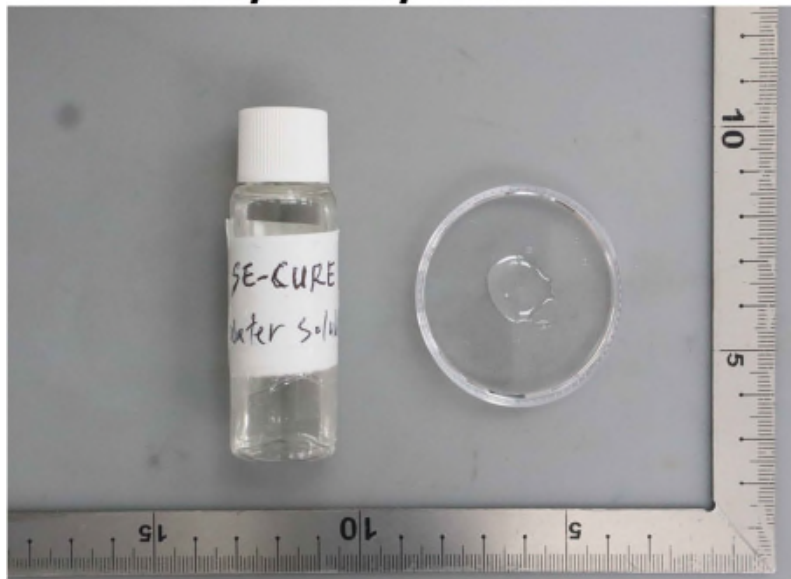
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* The tested sample / part is marked by an arrow if it's shown on the photo. *

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** End of Report **