Test Report

No. : CE/2020/75693

Date : 2020/08/06

TAIYO INK MFG. CO., LTD.
900, HIRASAWA, RANZAN-MACHI, HIKI-GUN, SAITAMA 355-0215 JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the applicant as:

Sample Submitted By : TAIYO INK MFG. CO., LTD.
Sample Description : PSR-4000 AUS703-140Ps/CA-40 AUS703-140Ps (UL:PSR-4000FL/CA-40FL)
Color : GREEN
Style/Item No. : INK
Sample Receiving Date : 2020/07/31
Testing Period : 2020/07/31 to 2020/08/06

Test Requested : 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).

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

Conclusion : 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.
## Test Result(s)

### PART NAME No.1 : GREEN INK

<table>
<thead>
<tr>
<th>Test Item(s)</th>
<th>Unit</th>
<th>Method</th>
<th>MDL</th>
<th>Result No.1</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (Cd)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-5 (2013) and performed by ICP-OES.</td>
<td>2</td>
<td>n.d.</td>
<td>100</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-5 (2013) and performed by ICP-OES.</td>
<td>2</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-4:2013+AMD1:2017 and performed by ICP-OES.</td>
<td>2</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>Hexavalent Chromium Cr(VI)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.</td>
<td>8</td>
<td>n.d.</td>
<td>1000</td>
</tr>
</tbody>
</table>

**Sum of PBBs**

| 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   | With reference to IEC 62321-6 (2015) and performed by GC/MS.         | 5   | n.d.        | -     |

**Sum of PBDEs**

| Monobromodiphenyl ether      | mg/kg   |                           | 5   | n.d.        | 1000  |
| 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 Report

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</thead>
<tbody>
<tr>
<td>DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.</td>
<td>50</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.</td>
<td>50</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>DBP (Dibutyl phthalate) (CAS No.: 84-74-2)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.</td>
<td>50</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)</td>
<td>mg/kg</td>
<td>With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.</td>
<td>50</td>
<td>n.d.</td>
<td>1000</td>
</tr>
</tbody>
</table>

### Note:

1. mg/kg = ppm : 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected = below MDL
4. " - " = Not Regulated
5. The statement of compliance conformity is based on comparison of testing results and limits.

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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)

1. Cutting · Preparation
   2. Sample Measurement
   3. Pb/Cd/Hg
      - Acid digestion with microwave / hotplate
      - Filtration
      - Solution
        1) Alkali fusion
        2) HCl to dissolve
      - Residue
      - ICP-OES
   4. Cr⁶⁺
      - Non-metal
      - Metal
      - ABS / PC / PVC
      - Others
      - Dissolving by ultrasonication
      - Digesting at 150~160℃
      - Digesting at 60℃ by ultrasonication
      - Separating to get aqueous phase
      - Cool, filter digestate through filter
      - Add diphenyl-carbazide for color development
      - Measure the absorbance at 540 nm by UV-VIS
      - Measure the absorbance at 540 nm by UV-VIS
      - pH adjustment
      - Add diphenyl-carbazide for color development
      - Boiling water extraction

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Analytical flow chart – PBB / PBDE

First testing process →
Optional screen process ----
Confirmation process ← →

Sample

Sample pretreatment

Screen analysis

Sample extraction / Soxhlet method

Concentrate/Dilute
Extracted solution

Filter

GC/MS

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Analytical flow chart - Phthalate

【Test method: IEC 62321-8】

1. Sample pretreatment/separation
2. Sample dissolved/extracted by THF
3. Dilute Extracted solution
4. Analysis was performed by GC/MS
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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 **