

**Test Report No.** 5748685

**Date :** 14-Dec-2023

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**Client : Phoenix Pulp & Paper Public Co.,Ltd.  
99 Moo 3 Tambol Kudnamsai Amphur Nampong Khon Kaen 40310 Thailand**

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

Sample Name : Plain Paper for Copier - PPPC  
Sample Description : White paper sheet

The following sample(s) was/were identified by SGS as:

SGS Sample No. : 6044309  
Sample Condition : Sample is contained in a plastic bag.  
Quantity Submitted : 1 bag.

Sample Receiving Date : 4-Dec-2023  
Testing Period : 07-Dec-2023 to 14-Dec-2023

Test Requested : In accordance with the RoHS Directive 2011/65/EU (Annex II) [amended by Directive (EU) 2015/863] .Selected test (s) as requested by client.

Test Method : (1) Inhouse method: SOP no. LBCC-19015 based on IEC-62321-5 edition 1.0:2013-6 for Lead content, Analyzed by ICP-OES. Microwave digestion method  
(2) Inhouse method: SOP no. LBCC-19015 based on IEC-62321-5 edition 1.0:2013-6 for Cadmium content, Analyzed by ICP-OES. Microwave digestion method  
(3) Inhouse method: SOP no. LBCC-19015 based on IEC-62321-4 edition 1.1:2017-07 for Mercury Content, Analyzed by ICP-OES.  
(4) Inhouse method LBCC-19018 based on IEC-62321-7-2 edition 1.0:2017-03, determination of Hexavalent Chromium by Colorimetric Method. and/or Inhouse method LBCC-19015 based on IEC-62321-5 edition 1.0:2013-6, determination of Chromium  
(5) Inhouse method: SOP no. LBCC-19021 based on IEC-62321-6 edition 1.0:2015-06 for PBBs/PBDEs content, Analyzed by GC/MS.  
(6) Inhouse method: SOP no. LBCC-19022 based on IEC-62321-8 edition 1.0:2017-03 for Phthalates content, Analyzed was performed by GC/MS.

Test Results : Please refer to next page.

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**CONCLUSION**

Based on the performed tests on submitted sample(s), the results of Cadmium (Cd), Lead (Pb), Mercury (Hg), Hexavalent chromium (Cr-VI), 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 where the decision rules based on simple acceptance which the probability of false accept may be as high as 50% in case the results is exactly on the tolerance limit.

**Signed for and on behalf of  
SGS (Thailand) Ltd.**

**Anchalee Wunnaphuek  
Acting - RSTS Lab Manager**



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**TEST RESULTS**

Test results by chemical method (Unit: mg/kg)

| Test Item (s):               | Method (Refer to) | Result (1) | MDL | RoHS Limit |
|------------------------------|-------------------|------------|-----|------------|
| Lead (Pb)                    | (1)               | n.d.       | 2   | 1000       |
| Cadmium (Cd)                 | (2)               | n.d.       | 2   | 100        |
| Mercury (Hg)                 | (3)               | n.d.       | 2   | 1000       |
| Hexavalent Chromium (Cr(VI)) | (4)               | n.d.       | 8   | 1000       |

Test Part Description  
Result (1) white paper

Note :

- (a) mg/kg = ppm ; 0.1wt% = 1000 ppm
- (b) n.d. = Not Detected (<MDL)
- (c) MDL = Method Detection Limit
- (d) The result of Hexavalent Chromium (Cr(VI)) is "ND" as the result of Chromium (Cr) is "ND", and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.
- (e) If the Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)), confirmation test of Hexavalent Chromium (Cr(VI)) is required.
- (f) Test done on client submitted sample

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**TEST RESULTS**

Test results by chemical method (Unit: mg/kg)

| Test Item (s):     | Method (Refer to) | Result (1) | MDL | RoHS Limit |
|--------------------|-------------------|------------|-----|------------|
| Sum of PBBs        | (5)               | n.d.       | -   | 1000       |
| Monobromobiphenyl  |                   | n.d.       | 5   | -          |
| Dibromobiphenyl    |                   | n.d.       | 5   | -          |
| Tribromobiphenyl   |                   | n.d.       | 5   | -          |
| Tetrabromobiphenyl |                   | n.d.       | 5   | -          |
| Pentabromobiphenyl |                   | n.d.       | 5   | -          |
| Hexabromobiphenyl  |                   | n.d.       | 5   | -          |
| Heptabromobiphenyl |                   | n.d.       | 5   | -          |
| Octabromobiphenyl  |                   | n.d.       | 5   | -          |
| Nonabromobiphenyl  |                   | n.d.       | 5   | -          |
| Decabromobiphenyl  |                   | n.d.       | 5   | -          |

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**TEST RESULTS**

Test results by chemical method (Unit: mg/kg)

| Test Item (s):           | Method (Refer to) | Result (1) | MDL | RoHS Limit |
|--------------------------|-------------------|------------|-----|------------|
| Sum of PBDEs             | (5)               | n.d.       | -   | 1000       |
| Monobromodiphenyl ether  |                   | n.d.       | 5   | -          |
| Dibromodiphenyl ether    |                   | n.d.       | 5   | -          |
| Tribromodiphenyl ether   |                   | n.d.       | 5   | -          |
| Tetrabromodiphenyl ether |                   | n.d.       | 5   | -          |
| Pentabromodiphenyl ether |                   | n.d.       | 5   | -          |
| Hexabromodiphenyl ether  |                   | n.d.       | 5   | -          |
| Heptabromodiphenyl ether |                   | n.d.       | 5   | -          |
| Octabromodiphenyl ether  |                   | n.d.       | 5   | -          |
| Nonabromodiphenyl ether  |                   | n.d.       | 5   | -          |
| Decabromodiphenyl ether  |                   | n.d.       | 5   | -          |

Test Part Description  
Result (1) white paper

- Note :
- (a) mg/kg = ppm ; 0.1 wt% = 1000 ppm
  - (b) n.d. = Not Detected
  - (c) MDL = Method Detection Limit
  - (d) "-" = Not regulated
  - (e) Test done on client submitted sample

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**TEST RESULTS**

**Phthalates Content for RoHS Directive 2011/65/EU Annex II [amended by Directive (EU) 2015/863], Analysis was performed by GC/MS.**

| Analysis  | Method (Refer to) | Result (1) (mg/kg) | MDL | RoHS Limit (mg/kg) |
|---|-------------------|--------------------|-----|--------------------|
| DBP (Di-butyl phthalate)<br>(CAS No.: 84-74-2)          | (6)               | n.d.               | 50  | 1000               |
| BBP (Benzyl butyl phthalate)<br>(CAS No.: 85-68-7)      | (6)               | n.d.               | 50  | 1000               |
| DEHP (Di-2-ethylhexyl phthalate)<br>(CAS No.: 117-81-7) | (6)               | n.d.               | 50  | 1000               |
| DIBP (Di-isobutyl phthalate)<br>(CAS No.: 84-69-5)      | (6)               | n.d.               | 50  | 1000               |

Test Part Description  
Result (1) white paper

Note :

- (a) mg/kg = ppm ; 0.1 wt% = 1000 ppm
- (b) n.d. = Not Detected
- (c) MDL = Method Detection Limit
- (d) Test done on client submitted sample

Remarks :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.  
[https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021

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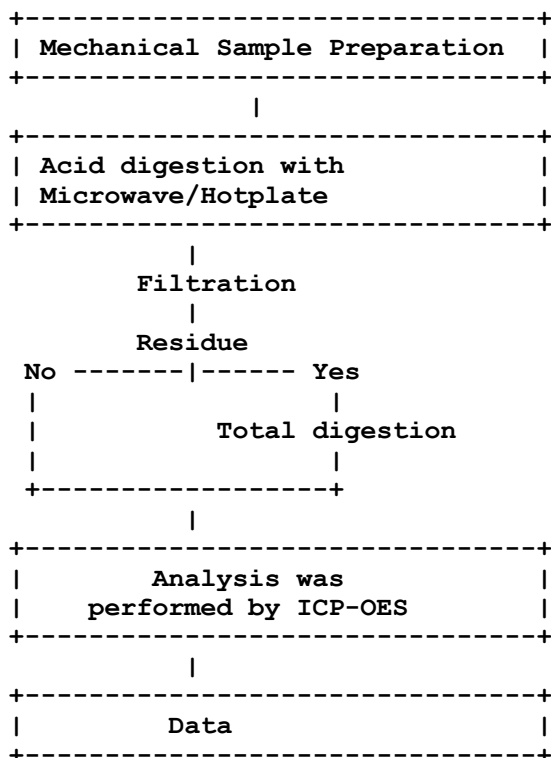
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**Flow chart of Pb,Cd,Hg Testing**

(Test method : IEC 62321)



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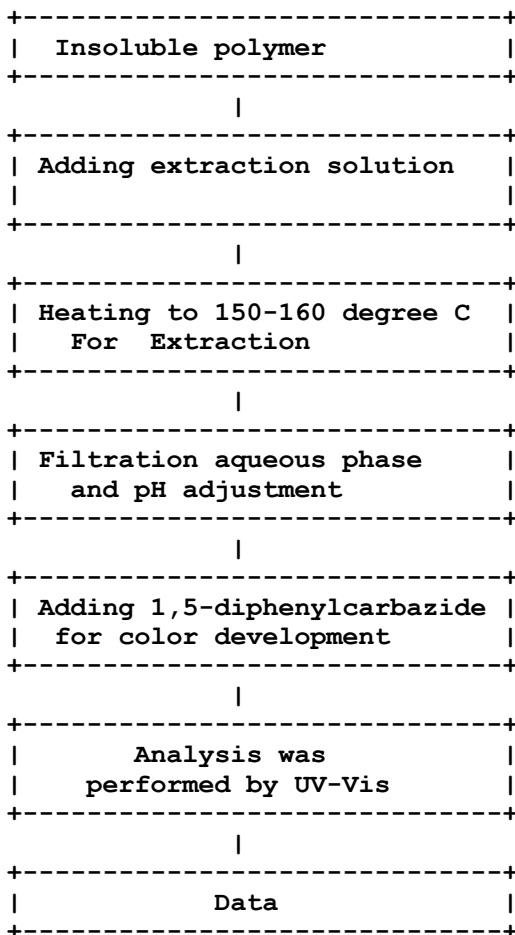
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**Flow chart of Hexavalent Chromium Testing**

(Test method : IEC 62321)



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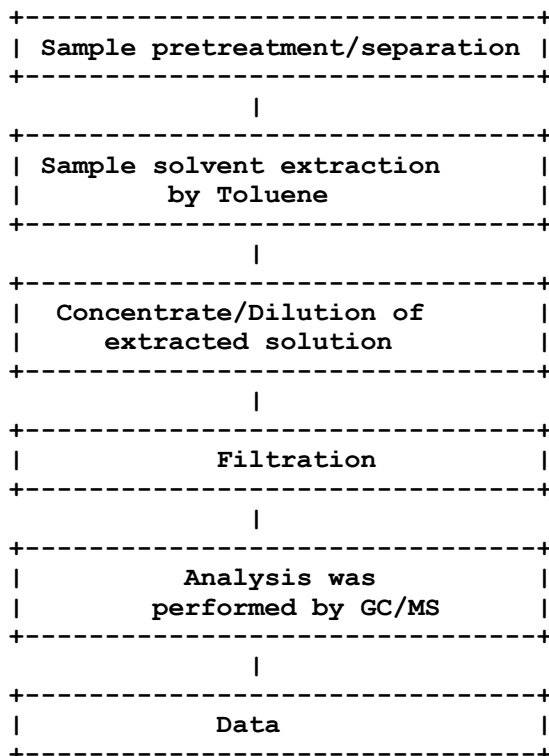
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**Flow chart of PBBs, PBDEs Testing**

(Test method : IEC 62321)



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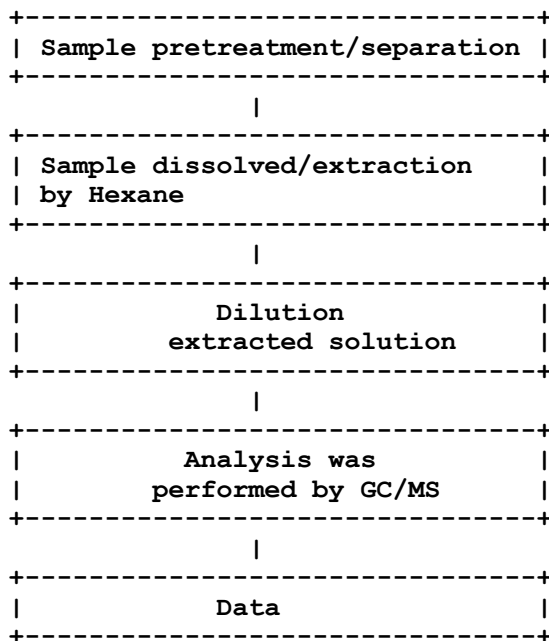
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**Flow chart of Phthalates Testing**

(Test method : IEC 62321)



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**SAMPLE/ATTACHMENT PICTURE**



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

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