



# Test Report No. F690101/LF-CTSAYHA19-03270

Issued Date : 2019. 03. 26

Page 1 of 6

Korea

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

**SGS File No.** : AYHA19-03270  
**Product Name** : PAINT MARKER INK  
**Item No./Part No.** : N/A  
**Received Date** : 2019. 03. 20  
**Test Period** : 2019. 03. 20 to 2019. 03. 26  
**Test Results** : For further details, please refer to following page(s)

SGS Korea Co., Ltd.

Jeff Jang / Chemical Lab Mgr

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm) <[http://www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s).



# Test Report No. F690101/LF-CTSAYHA19-03270

Issued Date : 2019. 03. 26

Page 2 of 6

Sample No. : AYHA19-03270.001  
Sample Description : PAINT MARKER INK  
Item No./Part No. : N/A  
Materials : N/A

## Heavy Metals

| Test Items                   | Unit  | Test Method                                                                                                                                                                                                                  | MDL | Results |
|------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------|
| Cadmium (Cd)                 | mg/kg | With reference to IEC 62321-5:2013<br>(Determination of Cadmium by ICP-OES)                                                                                                                                                  | 0.5 | N.D.    |
| Lead (Pb)                    | mg/kg | With reference to IEC 62321-5:2013<br>(Determination of Lead by ICP-OES)                                                                                                                                                     | 5   | N.D.    |
| Mercury (Hg)                 | mg/kg | With reference to IEC 62321-4:2013<br>(Determination of Mercury by ICP-OES)                                                                                                                                                  | 2   | N.D.    |
| Hexavalent Chromium (Cr VI)* | mg/kg | With reference to IEC 62321-7-2:2017,<br>determination of Hexavalent Chromium by<br>Colorimetric Method using UV-Vis and Microwave<br>system/or with reference to IEC 62321-5:2013,<br>determination of Chromium by ICP-OES. | 8   | N.D.    |

## Flame Retardants-PBBs/PBDEs

| Test Items              | Unit  | Test Method                                                                      | MDL | Results |
|-------------------------|-------|----------------------------------------------------------------------------------|-----|---------|
| Monobromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Dibromobiphenyl         | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tribromobiphenyl        | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tetrabromobiphenyl      | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Pentabromobiphenyl      | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Hexabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Heptabromobiphenyl      | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Octabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Nonabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Decabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Dibromodiphenyl ether   | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
|                         |       |                                                                                  |     |         |

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm) [http://www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s).



# Test Report No. F690101/LF-CTSAYHA19-03270

Issued Date : 2019. 03. 26

Page 3 of 6

Sample No. : AYHA19-03270.001  
Sample Description : PAINT MARKER INK  
Item No./Part No. : N/A  
Materials : N/A

## Flame Retardants-PBBs/PBDEs

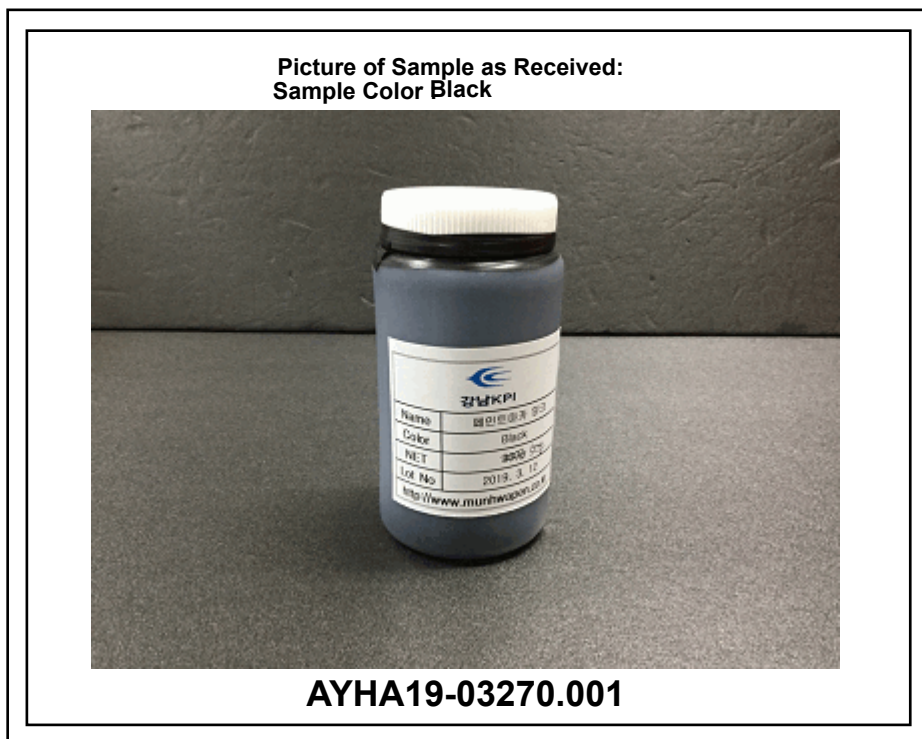
| Test Items               | Unit  | Test Method                                                                      | MDL | Results |
|--------------------------|-------|----------------------------------------------------------------------------------|-----|---------|
| Tribromodiphenyl ether   | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Hexabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Octabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Nonabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Decabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |

## Phthalates

| Test Items                         | Unit  | Test Method                                  | MDL | Results |
|------------------------------------|-------|----------------------------------------------|-----|---------|
| Di-(2-ethylhexyl) phthalate (DEHP) | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |
| Di-butyl phthalate (DBP)           | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |
| Benzyl butyl phthalate (BBP)       | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |
| Di-isobutyl phthalate (DIBP)       | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |

NOTE: (1) N.D. = Not detected.(<MDL)  
(2) mg/kg = ppm  
(3) MDL = Method Detection Limit  
(4) - = No regulation  
(5) Negative = Undetectable / Positive = Detectable  
(6) \*\* = Qualitative analysis (No Unit)  
(7) \* = a. 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.  
b. If the Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)), confirmation test of Hexavalent Chromium (Cr(VI)) is required.

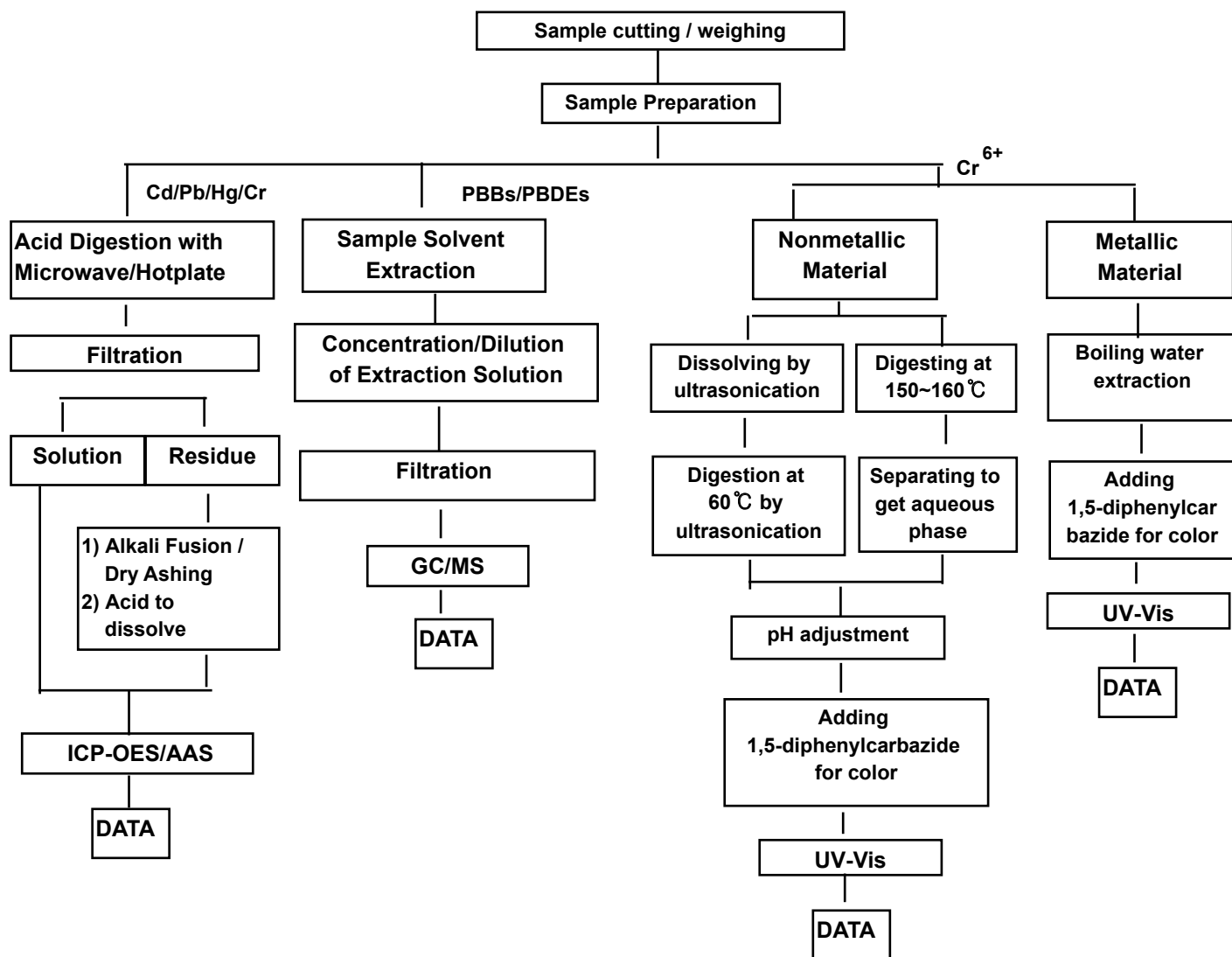
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm) [http://www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s).



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm) [http://www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s).



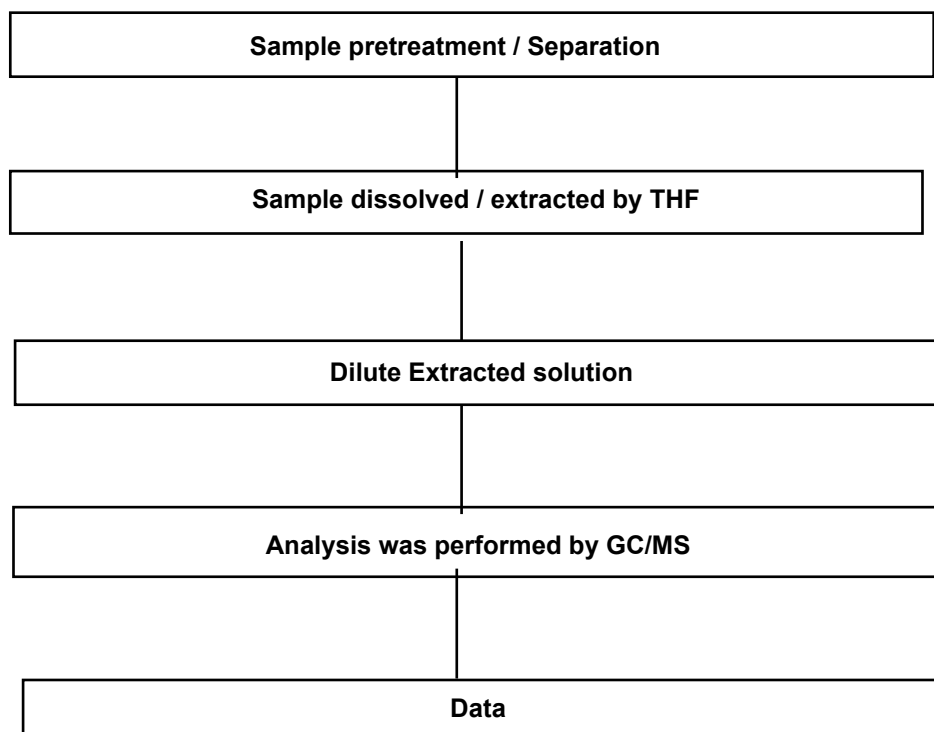
### Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr<sup>6+</sup> /PBBs&PBDEs Testing



The samples were dissolved totally at the acid digestion step of the above flow chart for Cd,Pb,Hg  
Section Chief : Minkyu Park



### Flow Chart for Phthalate Test



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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm) <[http://www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s).