



Test Report No. F690101/LF-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 1 of 14

SOLVAY CHEMICALS KOREA CO., LTD.

4F Poonglim Bldg. 823, Yeoksam-dong
Gangnam-gu, Seoul
Korea

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

SGS File No. : AYGA16-00990
Product Name : A 50HI NATURAL-J
Item No./Part No. : N/A
Received Date : 2016. 02. 26
Test Period : 2016. 02. 26 to 2016. 03. 07
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 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 2 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Cadmium by ICP-OES)	0.5	N.D.
Lead (Pb)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Lead by ICP-OES)	5	N.D.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013 (Determination of Mercury by ICP-OES)	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	With reference to IEC 62321:2008 (Determination of Hexavalent Chromium by spot test/Colorimetric Method using UV-Vis)	1	N.D.

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Dibromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Tribromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Pentabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Hexabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Heptabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Octabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Nonabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Decabromobiphenyl	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015 (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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 3 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Flame Retardants-PBBs/PBDEs

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

Phthalates

Test Items	Unit	Test Method	MDL	Results
Dibutyl phthalate (DBP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Benzyl butyl phthalate (BBP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Diisodecyl phthalate (DIDP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Diisononyl phthalate (DINP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Di-n-octyl phthalate (DnOP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Diisobutyl Phthalate (DIBP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Dimethyl phthalate (DMP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Diethyl phthalate (DEP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Dinonyl phthalate (DNP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Diisooctyl phthalate (DIOP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Dipropyl phthalate (DPrP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Dicyclohexyl phthalate (DCHP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Diphenyl phthalate (DPhP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Di-n-hexyl Phthalate (DnHP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Di-n-pentyl phthalate (DPP, DnPP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 4 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Phthalates

Test Items	Unit	Test Method	MDL	Results
Dibenzyl phthalate (DBzP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
Di(2-methoxyethyl) phthalate (DMEP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.
[di(C6-C8 alkyl)phthalate] linear+branched (DIHP)	mg/kg	With reference to ISO 14389 : 2014, GC/MS	50	N.D.

Halogen Content

Test Items	Unit	Test Method	MDL	Results
Bromine(Br)	mg/kg	With reference to EN 14582, IC	30	N.D.
Chlorine(Cl)	mg/kg	With reference to EN 14582, IC	30	N.D.
Fluorine(F)	mg/kg	With reference to EN 14582, IC	30	N.D.
Iodine(I)	mg/kg	With reference to EN 14582, IC	50	N.D.

PFCs

Test Items	Unit	Test Method	MDL	Results
Perfluorooctanoic acid (PFOA)	mg/kg	CEN/TS 15968 : 2010, HPLC/MS	1	N.D.
PFOS [^]	mg/kg	CEN/TS 15968 : 2010, HPLC/MS	1	N.D.

[^] PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
1,1,1,2-Tetrachloroethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1,1-Trichloroethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1,2,2-Tetrachloroethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1,2-Trichloroethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1-Dichloroethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1-Dichloroethene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1-Dichloropropene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,2,3-Trichloropropane	mg/kg	US EPA 8260B , GC/MS	1	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 5 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
1,2-Dichloroethane	mg/g	US EPA 8260B , GC/MS	1	N.D.
1,2-Dichloropropane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,3-Dichloropropane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,4-Dihydrooctafluorobutane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
2,2-Dichloropropane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
2-Perfluoromethylpentane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Carbon tetrachloride	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Chloroethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Trichlorofluoromethane (CFC-11)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Pentachlorofluoroethane (CFC-111)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Tetrachlorodifluoroethane (CFC-112)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Dichlorotetrafluoroethane (CFC-114)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Chloropentafluoroethane (CFC-115)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Dichlorodifluoromethane (CFC-12)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Chlorotrifluoromethane (CFC-13)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Heptachlorofluoropropane (CFC-211)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hexachlorodifluoropropane (CFC-212)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Pentachlorotrifluoropropane (CFC-213)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Tetrachlorotetrafluoropropane (CFC-214)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Trichloropentafluoropropane (CFC-215)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Trichlorohexafluoropropane (CFC-216)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Chloroheptafluoropropane (CFC-217)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Chloroform	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Chloromethane	mg/kg	US EPA 8260B , GC/MS	1	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 6 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
cis-1,2-Dichloroethene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
cis-1,3-Dichloropropene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Decafluorobutane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Dichloromethane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Fluorocarbon 116	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Freon 14	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Freon 218	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Freon 318	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Methyl bromide (Halon 1001)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Bromochloromethane (Halon 1011)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Dibromodifluoromethane (Halon-1202)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Bromochlorodifluoromethane (Halon-1211)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Bromotrifluoromethane (Halon-1301)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Dibromotetrafluoroethane (Halon-2402)	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-121b4	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-122b3	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-123b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-123b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-124b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-131b3	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-132b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-141b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-142b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-151b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-21b2	mg/kg	US EPA 8260B , GC/MS	1	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 7 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
HBFC-221b6	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-222b5	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-223b4	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-224b3	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-225b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-226b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-22b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-231b5	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-232b4	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-233b3	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-234b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-235b5	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-241b3	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-241b4	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-243b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-244b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-251b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-252b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-253b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-261b2	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-262b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-271b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
HBFC-31b1	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hexachlorobutadiene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-121	mg/kg	US EPA 8260B , GC/MS	1	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 8 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
Hydrochlorofluorocarbon-122	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-123	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-124	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-131	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-132b	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-133a	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-141b	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-21	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-22	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-221	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-222	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-223	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-224	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-225ca	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-225cb	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-226	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-231	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-232	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-233	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-234	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-235	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-241	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-242	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-243	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-244	mg/kg	US EPA 8260B , GC/MS	1	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 9 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
Hydrochlorofluorocarbon-251	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-252	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-253	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-261	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-262	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-271	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrochlorofluorocarbon-31	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-125	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-134	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-134a	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-143	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-143a	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-152a	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-227ea	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-23	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-236ea	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-236fa	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-245ca	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-245fa	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-365mfc	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-41	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Hydrofluorocarbon-43-10mee	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Nonafuro-2-(trifluoromethyl)butane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Perfluoro-1-butane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Perfluorohexane	mg/kg	US EPA 8260B , GC/MS	1	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. 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-CTSAYGA16-00990

Issued Date : 2016. 03. 07

Page 10 of 14

Sample No. : AYGA16-00990.001
Sample Description : A 50HI NATURAL-J
Item No./Part No. : N/A
Materials : Plastic

Ozone Depleting Substances

Test Items	Unit	Test Method	MDL	Results
Perfluoroisobutene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Perfluoro-n-pentane	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Tetrachloroethene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
trans-1,2-Dichloroethene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
trans-1,3-Dichloropropene	mg/kg	US EPA 8260B , GC/MS	1	N.D.
Trichloroethylene	mg/kg	US EPA 8260B , GC/MS	1	N.D.

Flame Retardants

Test Items	Unit	Test Method	MDL	Results
Tris(2-chloroethyl) phosphate (TCEP)	mg/kg	In-House , GC/MS	2.5	N.D.
Hexabromocyclododecane (HBCDD)	mg/kg	USEPA 3540C, LC/MS	5	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 sample is positive for CrVI if the CrVI concentration is greater than 0.13 ug/cm2. The sample coating is considered to contain CrVI.
b. The sample is negative for CrVI if CrVI is n.d. (concentration less than 0.10 ug/cm2). The coating is considered a non-CrVI based coating.
c. The result between 0.10 ug/cm2 and 0.13 ug/cm2 is considered to be inconclusive - unavoidable coating variations may influence the determination.

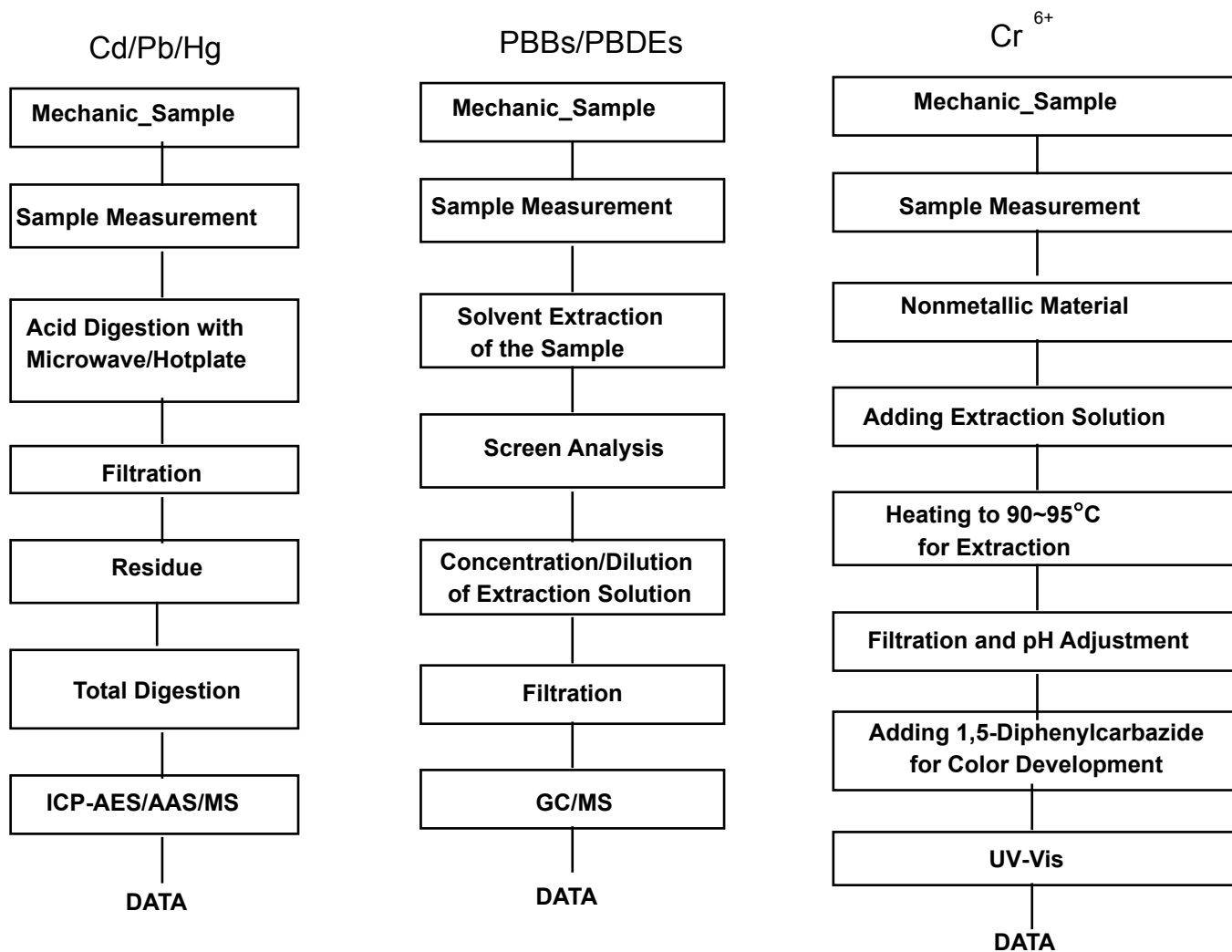
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm http://www.sgs.com/terms_e-document.htm. 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. 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).



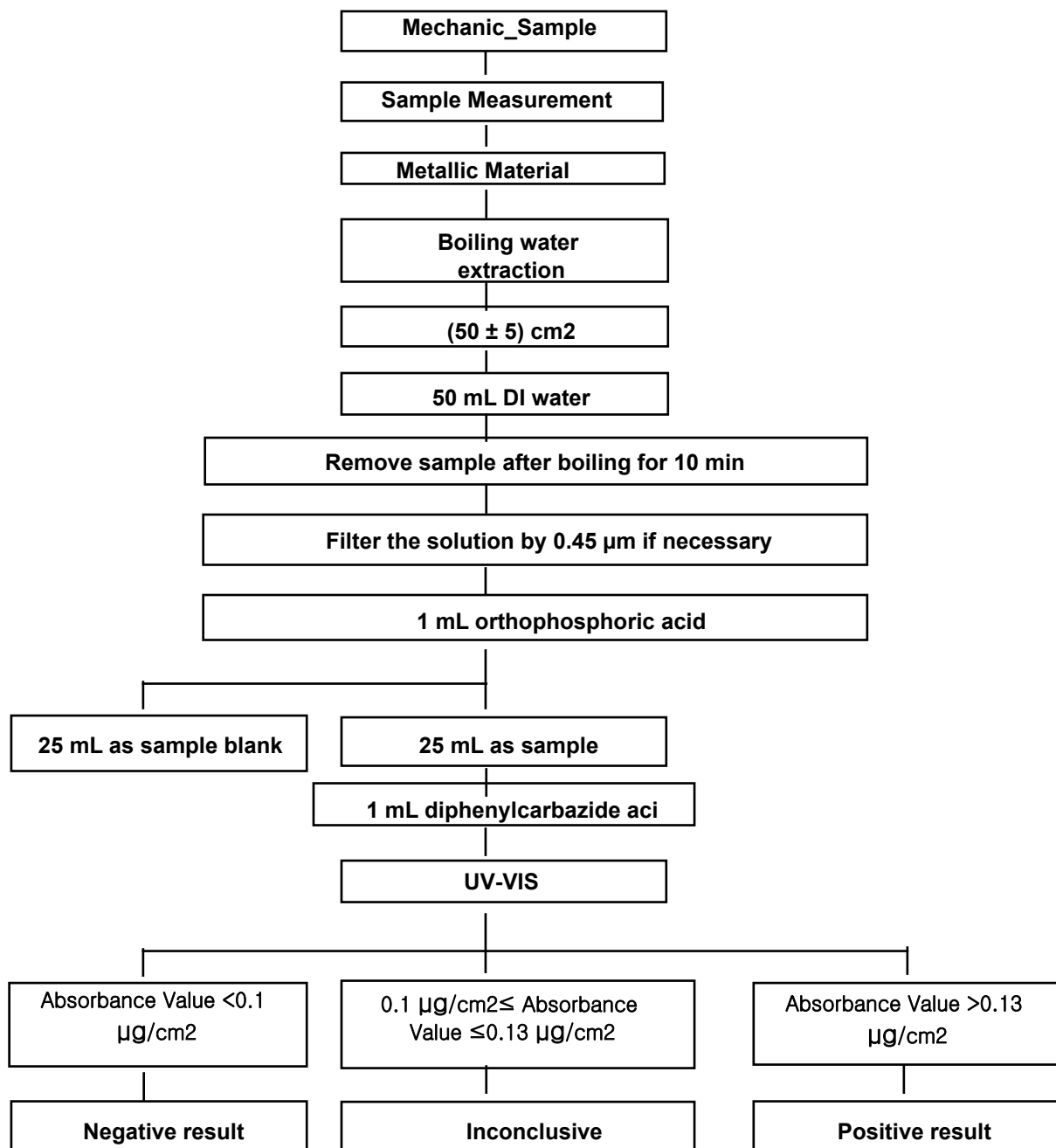
Testing Flow Chart for RoHS: Cd/Pb/Hg/Cr⁶⁺ /PBBs&PBDEs Testing



The samples were dissolved totally by pre-conditioning method according to above flow chart for Cd,Pb,Hg.
Section Chief : Gilsae Yi



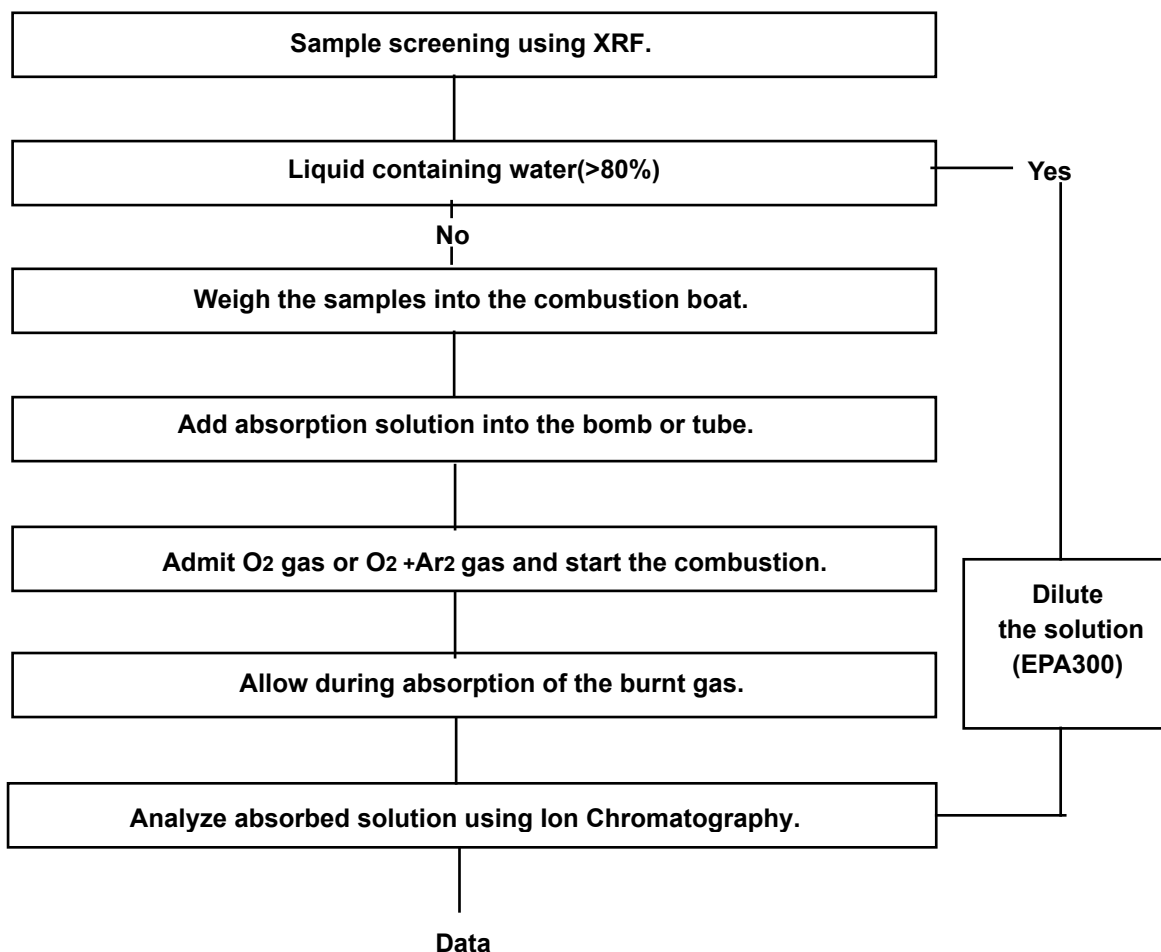
Cr⁶⁺



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>. 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).



Flow Chart for Halogen Test



*** End of Report ***