Test Report

Mizuguchi Chemical Co., Ltd
12-1 Yanagida Himi, Toyama 935-0031, Japan

Sample Name : Polyethylene film

The above sample(s) and information were provided by the client.

Sample Receiving Date : 17-Jan-2024
Testing Period : 17-Jan-2024 to 24-Jan-2024

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s)

Test Result(s) : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, 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.

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd

Y.C. Tham
Technical Manager, Multi-Lab

Test Result(s):

Sample Description : Plastic Film（White/Black）

Test Item(s):	Unit	Method	Results	MDL	RoHS Limit
Cadmium(Cd)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	1000
Mercury (Hg)	mg/kg	With reference to IEC62321-4 :2013+A1:2017. Analysis was performed by ICP/OES	n.d.	2	1000
Hexavalent Chromium (Cr(VI))	mg/kg	With reference to IEC62321-7-2 :2017. Analysis was performed by UV/Vis Spectrometry	n.d.	8	1000
Sum of PBBs	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	**n.d.**	-	1000
Monobromobiphenyl	mg/kg		n.d.	5	-
Dibromobiphenyl	mg/kg		n.d.	5	-
Tribromobiphenyl	mg/kg		n.d.	5	-
Tetrabromobiphenyl	mg/kg		n.d.	5	-
Hexabromobiphenyl	mg/kg		n.d.	5	-
Pentabromobiphenyl	mg/kg		n.d.	5	-
Heptabromobiphenyl	mg/kg		n.d.	5	-
Octabromobiphenyl	mg/kg		n.d.	5	-
Nonabromobiphenyl	mg/kg		n.d.	5	-
Decabromobiphenyl	mg/kg		n.d.	5	-
Sum of PBDEs	mg/kg		**n.d.**	-	1000
Monobromodiphenyl ether	mg/kg		n.d.	5	-
Dibromodiphenyl ether	mg/kg		n.d.	5	-
Tribromodiphenyl ether	mg/kg		n.d.	5	-
Tetrabromodiphenyl ether	mg/kg		n.d.	5	-
Pentabromodiphenyl ether	mg/kg		n.d.	5	-
Hexabromodiphenyl ether	mg/kg		n.d.	5	-
Heptabromodiphenyl ether	mg/kg		n.d.	5	-
Octabromodiphenyl ether	mg/kg		n.d.	5	-
Nonabromodiphenyl ether	mg/kg		n.d.	5	-
Decabromodiphenyl ether	mg/kg		n.d.	5	-

Test Result(s):

Sample Description : Plastic Film（White/Black）

Test Item(s):	Unit	Method	Results	MDL	Limit
BBP (Benzyl butyl phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000
DBP (Di-butyl phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000
DEHP (Di-(2-ethylhexyl) phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000
DIBP (Di-isobutyl Phthalate)	mg/kg	With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS	n.d.	50	1000

Note: (1) mg/kg = ppm ; 0.1wt% = 1000ppm
(2) n.d.= Not Detected
(3) MDL = Method Detection Limit
(4) "-" = Not regulated
(5) * : Exceeds limit
(6) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
(7) 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

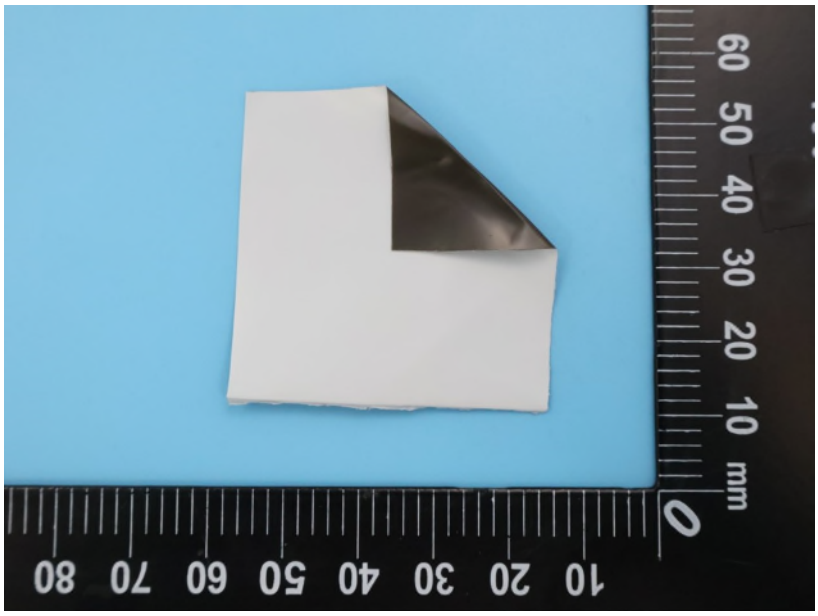
Remarks: Sample received was totally dissolved by preconditioning method.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

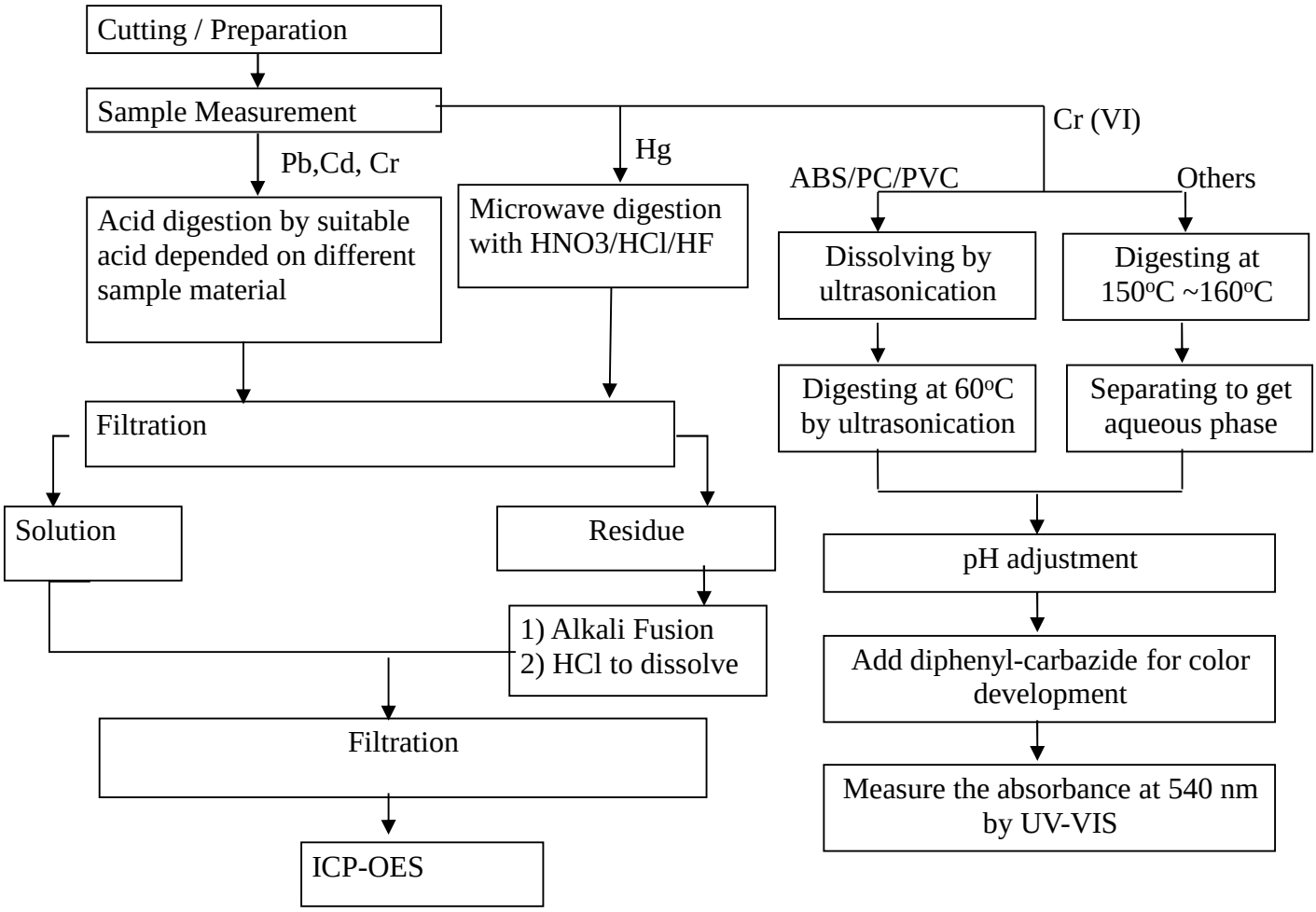
Sample photo:

Sample Description : Plastic Film（White/Black）

SGS authenticate the photo on original report only



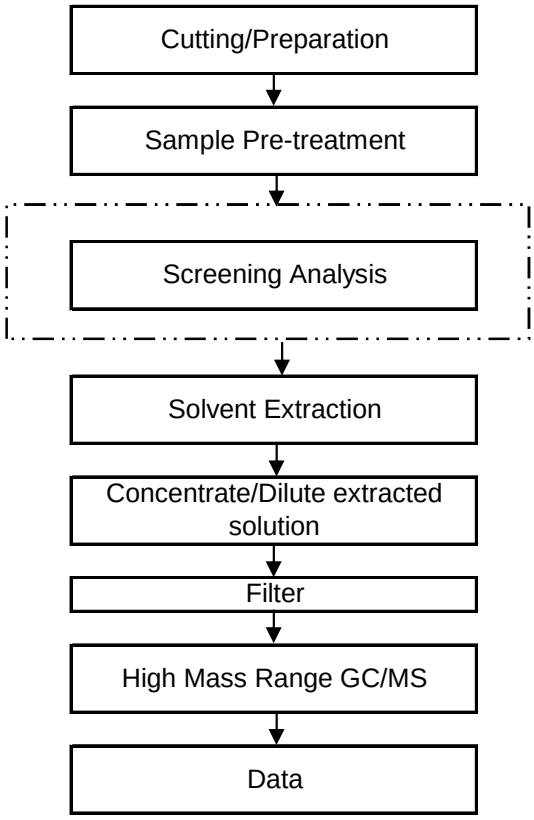
Process Flow of IEC 62321 (Pb, Cd, Hg, Cr & Cr(VI))



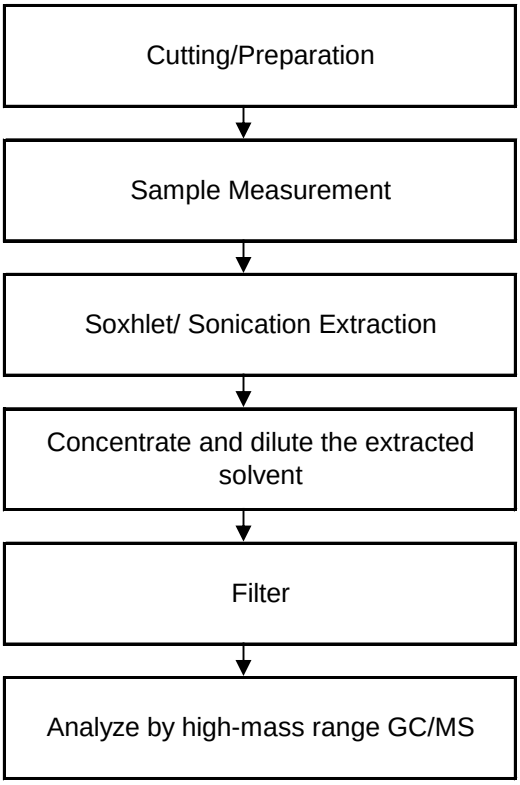
Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

Process Flow of PBBs and PBDEs by GC/MS (IEC 62321)

First Testing Process → Optional screen process …… Confirmation process ...→



Process Flow of Phthalate by GC/MS (IEC 62321)



End of Report