

Test Report

No. CANEC2011951301

Date: 22 Jul 2020

Page 1 of 15

GUANGDONG LEARY NEW MATERIAL TECHNOLOGY CO.,LTD

BEISHUI INDUSTRIAL ZONE, XINGTAN TOWN, SHUNDE DISTRICT, FOSHAN CITY, GUANGDONG PROVINCE.

The following sample(s) was/were submitted and identified on behalf of the clients as : Blue Ink

SGS Job No. : CP20-035333 - GZ

Date of Sample Received : 16 Jul 2020

Testing Period : 16 Jul 2020 - 22 Jul 2020

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

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

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

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, 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-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Dongyu Xie

Dongyu Xie
Approved Signatory



Test Report

No. CANEC2011951301

Date: 22 Jul 2020

Page 2 of 15

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN20-119513.001	Blue liquid

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC2011951301

Date: 22 Jul 2020

Page 3 of 15

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. 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
- (2) 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.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : SGS In-house method (GZTC CHEM-TOP-065, With reference to EPA 3540C:1996 & EPA 8270E:2017), analysis was performed by GC-MS&LC-MS.



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Test Report

No. CANEC2011951301

Date: 22 Jul 2020

Page 4 of 15

Test Item(s)	Unit	MDL	001
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Dipentyl Phthalates (DPENP/DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND

Notes :

- (1) DBP, BBP, DEHP, DIBP Reference information: Entry 51 of Regulation (EU) 2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:
- Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
 - Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material. In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.
 - shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of



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DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material in the articles.

Please refer to Regulation (EU) 2018/2005 to get more detail information

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EU) 2015/326 amending Annex XVII of REACH Regulation (EC) No 1907/2006.

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EU) 2015/326 to get more detail information

Hexabromocyclododecane (HBCDD)

Test Method : SGS in house method (GZTC CHEM-TOP-073, with reference to EPA 3550C:2007 & EPA 8270E:2017), analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)	25637-99-4	mg/kg	10	ND
	3194-55-6			
	134237-50-6			
	134237-51-7			
	134237-52-8			

AfPS GS 2019:01 PAK - Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2019:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND



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Test Report

No. CANEC2011951301

Date: 22 Jul 2020

Page 6 of 15

Test Item(s)	CAS NO.	Unit	MDL	001
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 4 PAHs (Phenanthrene, Pyrene, Anthracene, Fluoranthene)	-	mg/kg	-	ND
Sum of 15 PAHs	-	mg/kg	-	ND

AfPS (German commission for Product Safety) : PAHs requirements

Parameter (mg/kg)	Category 1	Category 2		Category 3	
	Materials intended to be placed in the mouth, or materials coming into long-term contact with skin (more than 30s) during the intended use -in toys according to Directive 2009/48/EC or -for the use by children ^{a,b} up to 3 years of age.	Materials not covered by category 1, coming into long-term contact (more than 30s) or short-term repetitive contact ^c with skin during the intended or foreseeable use ^d .		Materials covered neither by category 1 nor by category 2, coming into short-term contact (up to 30s) with skin during the intended or foreseeable use.	
		a. use by children	b. other consumer products	a. use by children	b. other consumer products
Benzo(a)pyrene (BaP)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene (BeP)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene (BaA)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene (BbF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene (BjF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene (BkF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene (CHR) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene (DBA)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene (BPE)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene (IPY)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT)	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene (NAP)	< 1	< 2		< 10	
Sum of 15 PAHs	<1	< 5	< 10	< 20	< 50

Note:

- ^a A "Child" is legally defined as a person before reaching the age of 14 years.
- ^b Use by children includes both active and passive contact by children.
- ^c Definition "short-term repetitive contact" taken from REACH Annex XVII entry 50 amendment (Regulation (EC) No. 1272/2013)
- ^d According to the definition of the German Product Safety Act (ProdSG) (chapter 1 Article 2 No. 28) "foreseeable use" shall mean the use of a product in a manner that the person placing it on the market, has not intended, but which could be reasonably foreseeable.

Remark: The German committee on Product Safety (AfPS) published a new PAHs document (AfPS GS 2019:01 PAK) on April 10, 2020, which will be binding for the issue of GS mark certificate from July 1, 2020.



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Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS or LC-MS/MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctanoic acid (PFOA) and its salts+	-	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-Ethylperfluorooctane sulfonamide(EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND

Notes :

- (1) + PFOA and its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1);
- (2) ^ PFOS including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH4 (CAS No.: 29081-56-9), PFOS-NH(OH)2 (CAS No.: 70225-14-8), PFOS-N(C2H5)4 (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)

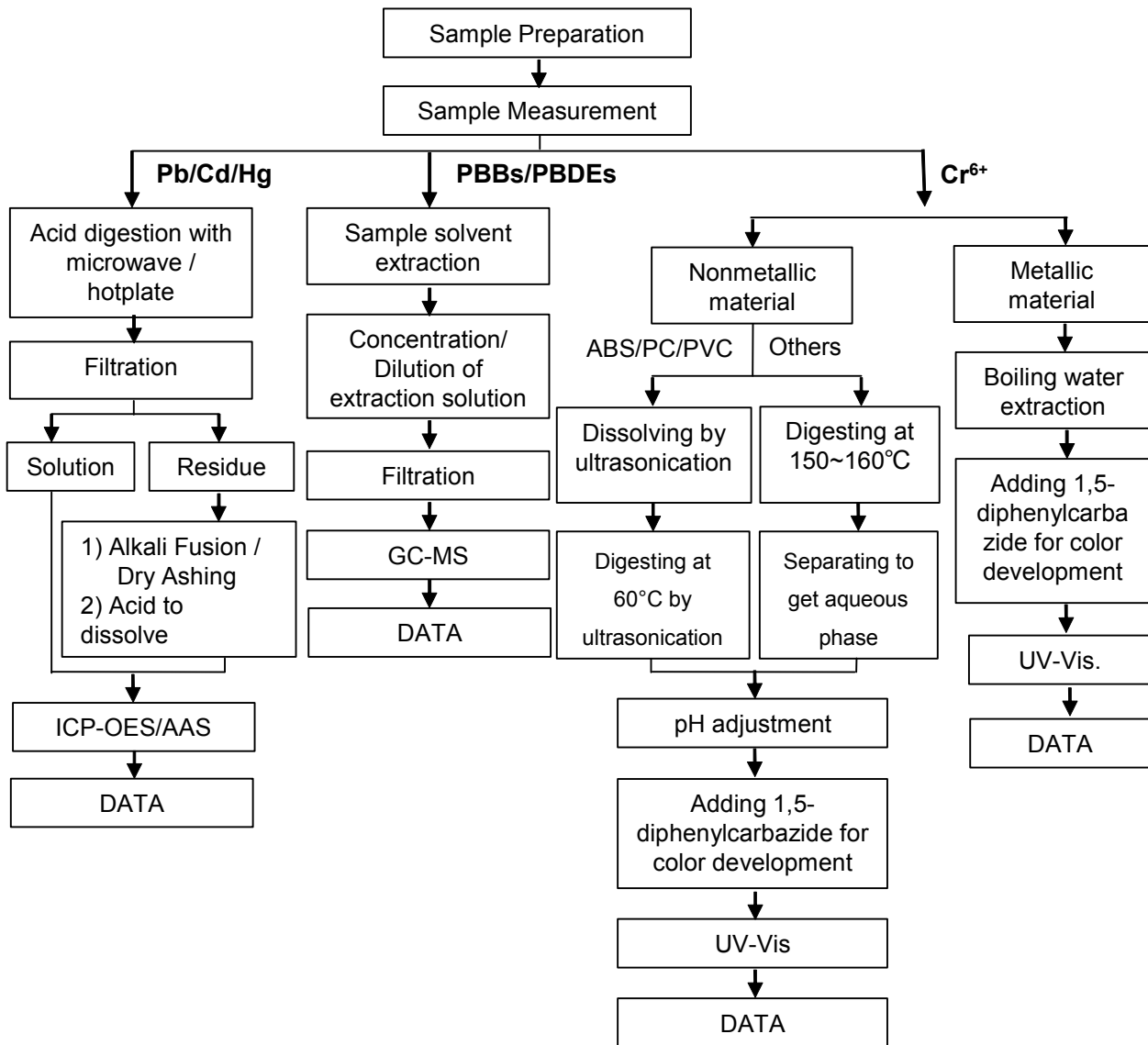
Remark : The result(s) shown is/are of the total weight of dried sample.



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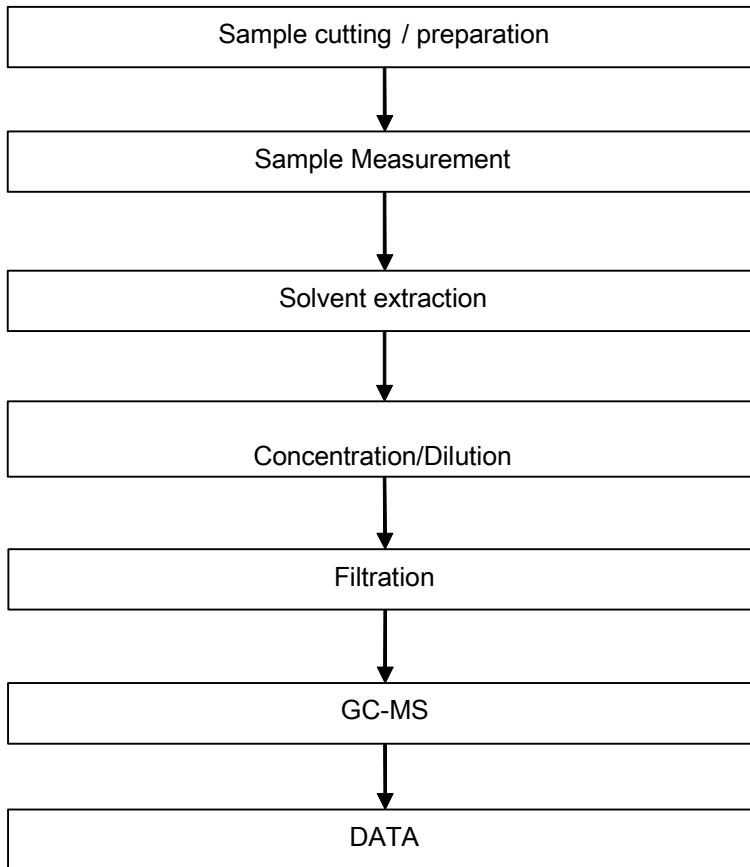
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded).



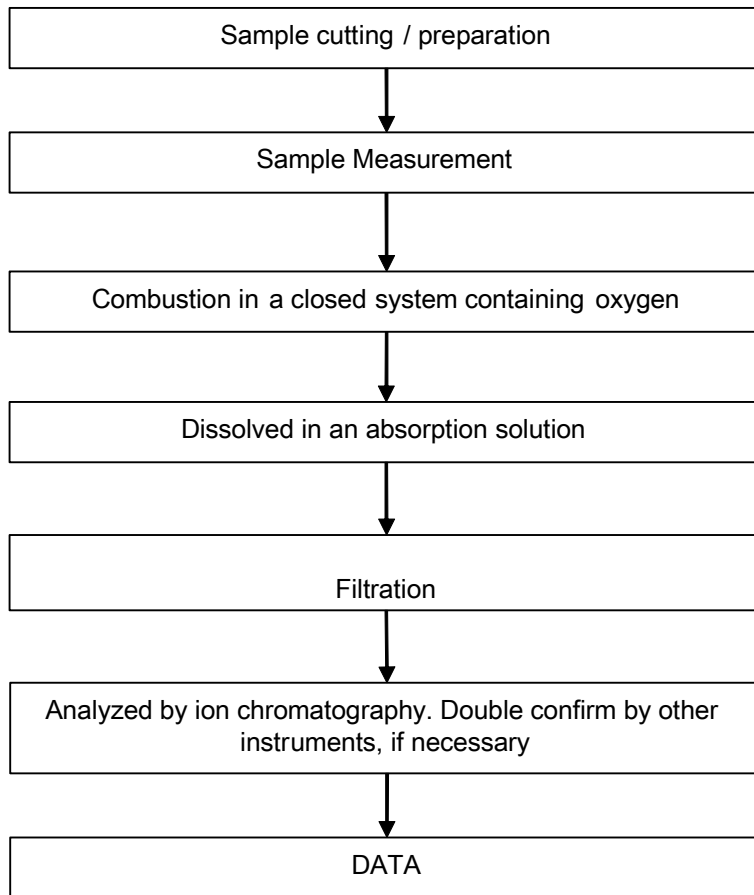
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Phthalates Testing Flow Chart



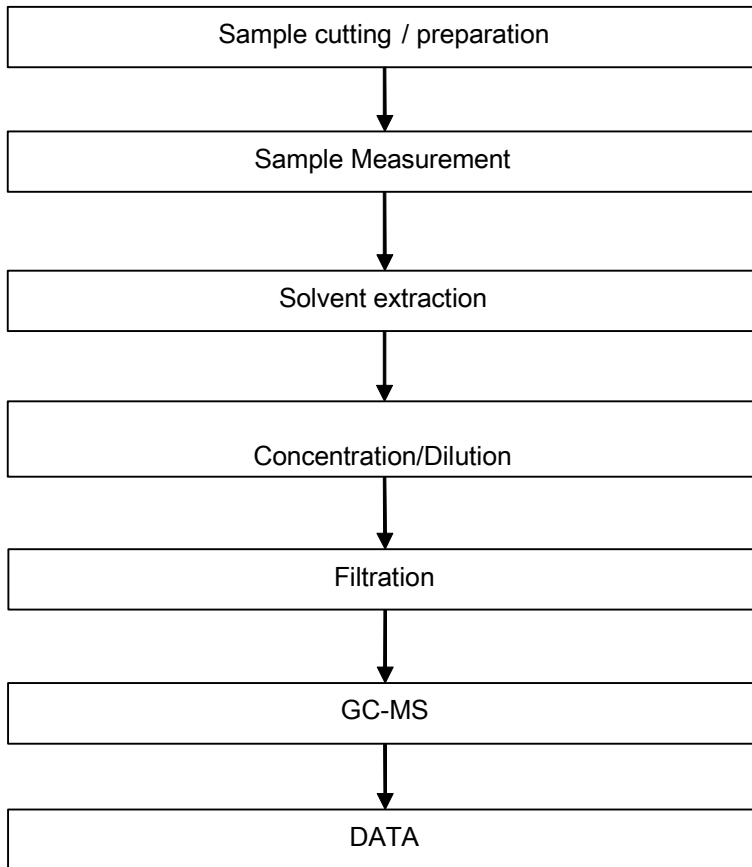
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Halogen Testing Flow Chart



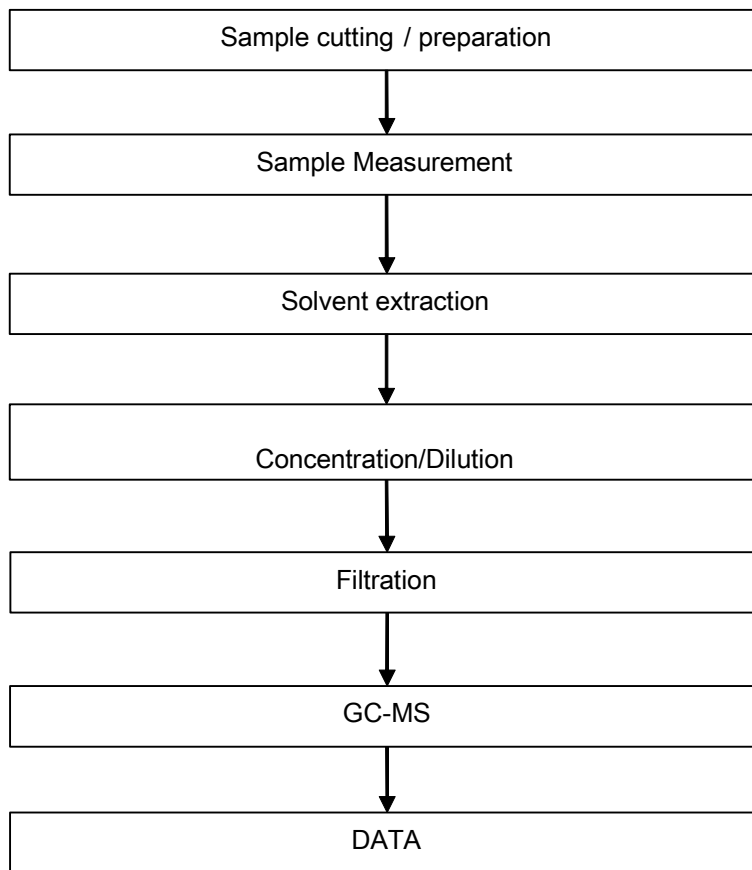
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HBCDD Testing Flow Chart



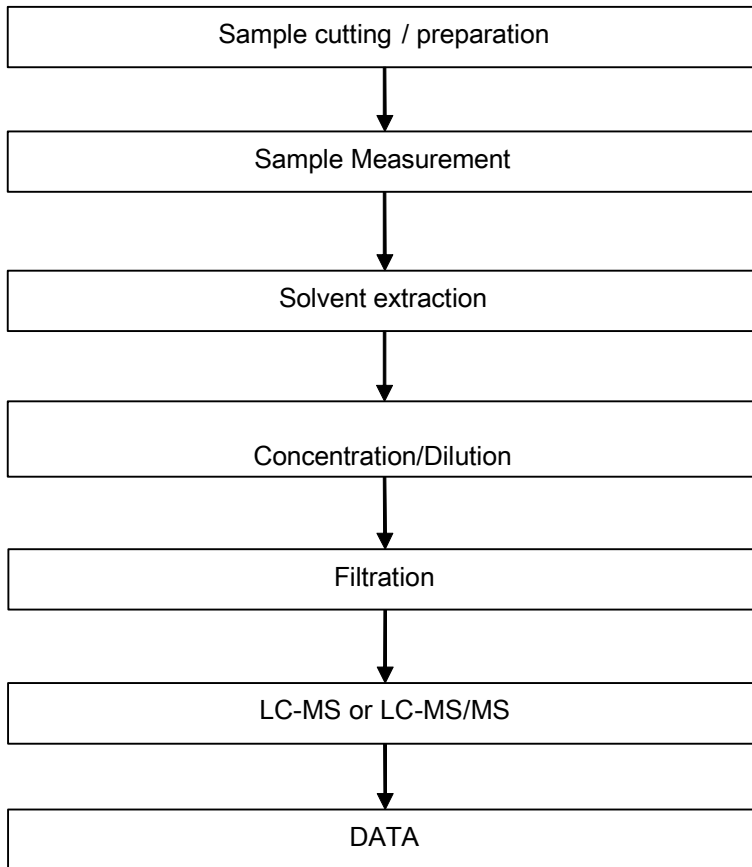
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PAHs Testing Flow Chart



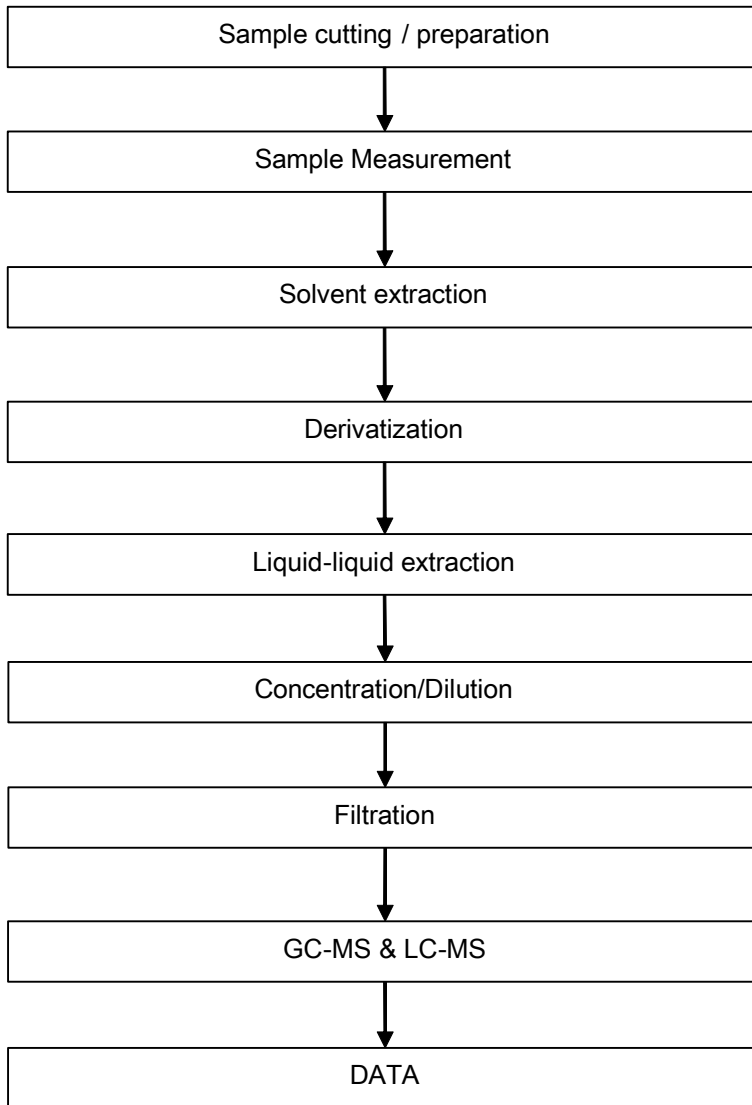
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PFOA / PFOS Testing Flow Chart



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TBBP-A Testing Flow Chart



Sample photo:



SGS authenticate the photo on original report only

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