

## Test Report

No. CANEC1903514601

Date: 19 Mar 2019

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HANGZHOU SILAN INTEGRATED CIRCUIT CO.,LTD.  
NO.308,10TH ROAD,EAST HETZ,HANGZHOU  
CHINA

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

SGS Job No. : CP19-009787 - GZ  
Client Ref. Info. : Used for Silicon Substrate Device  
Date of Sample Received : 08 Mar 2019  
Testing Period : 08 Mar 2019 - 19 Mar 2019  
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).

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

*Violet Shi*

Violet,Shi  
Approved Signatory

*Zmguan*

Zm guan  
Approved Signatory



Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-035146.001	"DICE"

Remarks :

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

**SS-00259**

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	ND
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	mg/kg	8	ND
Sum of PBBs	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	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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<u>Test Item(s)</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)	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	mg/kg	50	ND

### Notes :

(1) IEC 62321 series is equivalent to EN 62321 series

[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

### PFOA & PFOA Related Substances

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

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	0.025	ND
PFOA related substances+	-	mg/kg	1	ND

### Notes :

(1)+ PFOA related substances refer to the sum of Perfluoro-1-iodooctane (PFOI) and 1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH).

### Lead and its compounds

Test Method : SGS In-house method (GZTC CHEM-TOP-004-01, with reference to US EPA Method 3052:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Lead (Pb)	mg/kg	2	ND



**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>
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND

**Elementary Analysis**

Test Method : With reference to US EPA Method 3052:1996, analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Beryllium (Be)	mg/kg	5	ND
Beryllium oxide (BeO)	mg/kg	15	ND
Diarsenic trioxide (As <sub>2</sub> O <sub>3</sub> )	mg/kg	13	1224
Diarsenic pentaoxide (As <sub>2</sub> O <sub>5</sub> )	mg/kg	15	1422

Notes :

- (1) As<sub>2</sub>O<sub>3</sub> : Calculated from Arsenic content
- (2) As<sub>2</sub>O<sub>5</sub> : Calculated from Arsenic content
- (3) BeO: Calculate from Beryllium content

**CoCl<sub>2</sub> (Cobalt dichloride)**

Test Method : With reference to SGS in house method(GZTC CHEM-TOP-099-02), analysis was performed by IC and ICP-OES

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cobalt Dichloride (CoCl <sub>2</sub> )	mg/kg	100	ND

Notes :

- (1)CoCl<sub>2</sub>: Result is calculated based on the results of Cobalt and Chloride contents.

**Polychlorinated Naphthalenes (PCNs)**



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Test Method : With reference to US EPA 8081B: 2007, analysis was performed by GC-MS

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
1-Chlorinated Naphthalene	mg/kg	5	ND
2-Chlorinated Naphthalene	mg/kg	5	ND
1,4-Dichlorinated Naphthalene	mg/kg	5	ND
1,5-Dichlorinated Naphthalene	mg/kg	5	ND
1,2-Dichlorinated Naphthalene	mg/kg	5	ND
1,8-Dichlorinated Naphthalene	mg/kg	5	ND
1,2,3-Trichlorinated Naphthalene	mg/kg	5	ND
1,2,3,4-Tetrachlorinated Naphthalene	mg/kg	5	ND
1,2,3,4,6-Pentachlorinated Naphthalene	mg/kg	5	ND
Octa-chlorinated Naphthalene	mg/kg	5	ND

## Ozone Depleting Substances (ODS)

Test Method : With reference to US EPA 5021A:2014, Analysis was performed by HS-GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
<b>CFC</b>				
CFC-11	75-69-4	µg/g	0.1	ND
CFC-12	75-71-8	µg/g	0.1	ND
CFC-13	75-72-9	µg/g	0.1	ND
CFC-111	354-56-3	µg/g	0.1	ND
CFC-112	76-12-0	µg/g	0.1	ND
CFC-113	76-13-1	µg/g	0.1	ND
CFC-114	76-14-2	µg/g	0.1	ND
CFC-115	76-15-3	µg/g	0.1	ND
CFC-211	422-78-6	µg/g	0.1	ND
CFC-212	661-96-1	µg/g	0.1	ND
CFC-213	1652-89-7	µg/g	0.1	ND
CFC-214	677-68-9	µg/g	0.1	ND
CFC-215	1599-41-3	µg/g	0.1	ND
CFC-216	661-97-2	µg/g	0.1	ND
CFC-217	422-86-6	µg/g	0.1	ND
<b>Halon</b>				
Halon 1211	353-59-3	µg/g	0.1	ND
Halon 1301	75-63-8	µg/g	0.1	ND
Halon 2402	124-73-2	µg/g	0.1	ND



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
<b>CHC</b>				
Carbon tetrachloride	56-23-5	µg/g	0.1	ND
1,1,1-trichloroethane	71-55-6	µg/g	0.1	ND
<b>HCFC</b>				
HCFC-21	75-43-4	mg/kg	0.1	ND
HCFC-22	75-45-6	mg/kg	0.1	ND
HCFC-31	593-70-4	mg/kg	0.1	ND
HCFC-121	354-14-3	mg/kg	0.1	ND
HCFC-122	354-21-2	mg/kg	0.1	ND
HCFC-123	306-83-2	mg/kg	0.1	ND
HCFC-123a	354-23-4	mg/kg	0.1	ND
HCFC-124	2837-89-0	mg/kg	0.1	ND
HCFC-124a	354-25-6	mg/kg	0.1	ND
HCFC-131	359-28-4	mg/kg	0.1	ND
HCFC-131a	811-95-0	mg/kg	0.1	ND
HCFC-132a	471-43-2	mg/kg	0.1	ND
HCFC-132b	1649-08-7	mg/kg	0.1	ND
HCFC-133a	75-88-7	mg/kg	0.1	ND
HCFC-141b	1717-00-6	mg/kg	0.1	ND
HCFC-142b	75-68-3	mg/kg	0.1	ND
HCFC-221	422-26-4	mg/kg	0.1	ND
HCFC-222	422-30-0	mg/kg	0.1	ND
HCFC-223	422-52-6	mg/kg	0.1	ND
HCFC-224	422-54-8	mg/kg	0.1	ND
HCFC-225ca	422-56-0	mg/kg	0.1	ND
HCFC-225cb	507-55-1	mg/kg	0.1	ND
HCFC-226	431-87-8	mg/kg	0.1	ND
HCFC-231	421-94-3	mg/kg	0.1	ND
HCFC-232	460-89-9	mg/kg	0.1	ND
HCFC-233	7125-84-0	mg/kg	0.1	ND
HCFC-234	425-94-5	mg/kg	0.1	ND
HCFC-235	460-92-4	mg/kg	0.1	ND
HCFC-241	666-27-3	mg/kg	0.1	ND
HCFC-242	460-63-9	mg/kg	0.1	ND
HCFC-243	338-75-0	mg/kg	0.1	ND
HCFC-244	679-85-6	mg/kg	0.1	ND
HCFC-251	421-41-0	mg/kg	0.1	ND
HCFC-252	819-00-1	mg/kg	0.1	ND
HCFC-253	460-35-5	mg/kg	0.1	ND
HCFC-261	7799-56-6	mg/kg	0.1	ND



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
HCFC-261	420-97-3	mg/kg	0.1	ND
HCFC-271	430-55-7	mg/kg	0.1	ND
HCFC-262	102738-79-4	mg/kg	0.1	ND
HCFC-262	420-99-5	mg/kg	0.1	ND
<b>HFC</b>				
HFC-23	75-46-7	µg/g	0.1	ND
HFC-32	75-10-5	µg/g	0.1	ND
HFC-41	593-53-3	µg/g	0.1	ND
HFC-43-10mee	-	µg/g	0.1	ND
HFC-125	354-33-6	µg/g	0.1	ND
HFC-134	359-35-3	µg/g	0.1	ND
HFC-134a	811-97-2	µg/g	0.1	ND
HFC-152a	75-37-6	µg/g	0.1	ND
HFC-143	420-46-2	µg/g	0.1	ND
HFC-143a	430-66-0	µg/g	0.1	ND
HFC-227ea	-	µg/g	0.1	ND
HFC-236cb	-	µg/g	0.1	ND
HFC-236ea	431-63-0	µg/g	0.1	ND
HFC-236fa	690-39-1	µg/g	0.1	ND
HFC-245ca	679-86-7	µg/g	0.1	ND
HFC-245fa	-	µg/g	0.1	ND
HFC-365mfc	-	µg/g	0.1	ND
HFC-161	353-36-6	mg/kg	0.1	ND
HFC-152	-	mg/kg	0.1	ND
<b>PFC</b>				
Perfluoromethane	75-73-0	µg/g	0.1	ND
Perfluoroethane	76-16-4	µg/g	0.1	ND
Perfluoropropane	76-19-7	µg/g	0.1	ND
Perfluorobutane	355-25-9	µg/g	0.1	ND
Perfluoropentane	678-26-2	µg/g	0.1	ND
Perfluorohexane	355-42-0	µg/g	0.1	ND
Perfluorocyclobutane	115-25-3	µg/g	0.1	ND
<b>Others</b>				
Sulphur Hexafluoride - SF <sub>6</sub>	2551-62-4	µg/g	0.1	ND

## Perchlorate

Test Method : With reference to SGS In-house method (GZTC CHEM-TOP-224-01), analysis was performed by LC-MSMS.



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<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perchlorate	µg/kg	5	ND

## Asbestos

Test Method : With reference to NIOSH 9002:1994 / NIOSH 9000:2015, Analysis was performed by PLM / XRD.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Chrysotile	12001-29-5/ 132207-32-0	% (m/m)	0.1	Negative
Amosite	12172-73-5	% (m/m)	0.1	Negative
Crocidolite	12001-28-4	% (m/m)	0.1	Negative
Anthophyllite	77536-67-5	% (m/m)	0.1	Negative
Tremolite	77536-68-6	% (m/m)	0.1	Negative
Actinolite	77536-66-4	% (m/m)	0.1	Negative

Notes :

(1) Negative means the absence of asbestos, Positive means the presence of asbestos.

## Formaldehyde

Test Method : In-house method (GZTC-CHEM-TOP-059-03), analysis was performed by UV-Vis.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Formaldehyde	g/kg	0.02	ND

## Commission Decision 2011/135/EU (previously restricted under 2010/153/EU and 2009/251/EC) – Dimethyl fumarate(DMF)

Test Method : SGS Inhouse method (GZTC CHEM-TOP-095), analysis was performed by GC-MS.





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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dimethyl fumarate(DMF)	0.1	mg/kg	0.1	ND
<b>Comment</b>				<b>PASS</b>

Notes :

(1) The maximum permissible limit is quoted from the document EU Directive 2011/135/EU (previously restricted under 2010/153/EU and 2009/251/EC)

### Polyvinyl chloride (PVC)

Test Method : SGS in house method (GZTC CHEM-TOP-066), analysis was performed by FTIR.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
PVC	9002-86-2	-	-	Negative

Notes :

(1) Negative=Undetectable,Positive=Detectable

### Polychlorinated Terphenyls (PCTs)

Test Method : With reference to US EPA 8082A: 2007, analysis was performed by GC-MS

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Aroclor 5432	mg/kg	5	ND
Aroclor 5442	mg/kg	5	ND
Aroclor 5460	mg/kg	5	ND

### Hexabromocyclododecane (HBCDD)

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

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD)	mg/kg	10	ND

### Polychlorinated Biphenyls (PCBs)

Test Method : With reference to US EPA 8082A: 2007, analysis was performed by GC-MS

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
2,4,4'-Trichlorobiphenyl (PCB 28)	7012-37-5	mg/kg	0.5	ND



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
2,2',5,5'-Tetrachloro-biphenyl (PCB 52)	35693-99-3	mg/kg	0.5	ND
2,2',4,5,5'-Pentachloro-biphenyl (PCB 101)	37680-73-2	mg/kg	0.5	ND
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	31508-00-6	mg/kg	0.5	ND
2,2'3,4,4',5'-Hexachloro-biphenyl (PCB 138)	35065-28-2	mg/kg	0.5	ND
2,2',4,4',5,5'-Hexachloro-biphenyl (PCB 153)	35065-27-1	mg/kg	0.5	ND
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	35065-29-3	mg/kg	0.5	ND

### Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS / GC-ECD.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	mg/kg	50	ND

### Organic-Tin compounds

Test Method : With reference to ISO 17353: 2004 , analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Tributyl tin (TBT) by weight of Tin	%(w/w)	0.01	ND
Triphenyl tin (TPHT) by weight of Tin	%(w/w)	0.01	ND
Tricyclohexyltin (TCyT) by weight of Tin	%(w/w)	0.01	ND
Trioctyltin (TOT) by weight of Tin	%(w/w)	0.01	ND
Tripropyltin (TPT) by weight of Tin	%(w/w)	0.01	ND
Trimethyltin(TMT) by weight of Tin	%(w/w)	0.01	ND
Dibutyl tin (DBT) by weight of Tin	%(w/w)	0.01	ND
Diocetyl tin (DOT) by weight of Tin	%(w/w)	0.01	ND
Σ of Tri substituted organotin compounds calculated as tin	%(w/w)	-	ND

### PFOS (Perfluorooctane sulfonates)

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

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :



(1)^ 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.

**Phthalates Content**

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
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND

**Polycyclic Aromatic Hydrocarbons (PAHs)**

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
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
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND

**Flame retardant(s)**

Test Method : SGS In-house method (GZTC CHEM-TOP-149-04, with reference to US EPA 3550C:2007), analysis was performed by GC-MS and HPLC-DAD/MS.



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Tris(1,3-dichloro-2-propyl) Phosphate(TDCPP)	13674-87-8	mg/kg	5	ND
Tris(1-chloro-2-propyl) Phosphate (TCPP)	13674-84-5	mg/kg	5	ND
Tris(2-chloroethyl) Phosphate(TCEP)	115-96-8	mg/kg	5	ND

### Substances in the Candidate List of SVHC

Test Method : SGS In House method-GZTC CHEM-TOP-092-01, SGS In House method-GZTC CHEM-TOP-092-02, Analyzed by ICP-OES&GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	%(w/w)	0.005	ND
Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	%(w/w)	0.005	ND
Boric acid*	10043-35-3, 11113-50-1	%(w/w)	0.005	ND
Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	%(w/w)	0.005	ND
Diboron trioxide*	1303-86-2	%(w/w)	0.005	ND
2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	%(w/w)	0.050	ND
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	%(w/w)	0.050	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	%(w/w)	0.050	ND
4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	%(w/w)	0.050	ND
Bis(2-methoxyethyl) phthalate	117-82-8	%(w/w)	0.050	ND
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	%(w/w)	0.050	ND
Diisopentylphthalate	605-50-5	%(w/w)	0.050	ND
N-Pentyl-isopentylphthalate	776297-69-9	%(w/w)	0.050	ND
Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	%(w/w)	0.050	ND
Trixylyl phosphate	25155-23-1	%(w/w)	0.050	ND
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	%(w/w)	0.050	ND





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Test Item(s)	CAS NO.	Unit	MDL	001
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters;	68515-51-5,	%(w/w)	0.050	ND
1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68648-93-1			
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	%(w/w)	0.050	ND
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	%(w/w)	0.050	ND
Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	%(w/w)	0.050	ND
Dipentyl phthalate (DPP)	131-18-0	%(w/w)	0.050	ND
1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	%(w/w)	0.050	ND
Benz[a]anthracene	56-55-3, 1718-53-2	%(w/w)	0.050	ND
Chrysene	218-01-9, 1719-03-5	%(w/w)	0.050	ND
Bis(2-methoxyethyl) ether	111-96-6	%(w/w)	0.050	ND
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	%(w/w)	0.050	ND
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	%(w/w)	0.050	ND
1,2-Diethoxyethane	629-14-1	%(w/w)	0.050	ND
N,N-dimethylformamide	68-12-2	%(w/w)	0.050	ND
2-Ethylhexyl	15571-58-1	%(w/w)	0.050	ND
10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE				
Reaction mass of 2-ethylhexyl	-	%(w/w)	0.050	ND
10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)				
4-Aminoazobenzene	60-09-3	%(w/w)	0.050	ND
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	%(w/w)	0.050	ND
Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	%(w/w)	0.050	ND
Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	%(w/w)	0.050	ND



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
1,3-propanesultone	1120-71-4	%(w/w)	0.050	ND
Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-3 9-8,4149-60-4	%(w/w)	0.050	ND
4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	%(w/w)	0.050	ND
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76 -2,3830-45-3	%(w/w)	0.050	ND
Perfluorohexane-1-sulphonic acid and its salts	-	%(w/w)	0.050	ND

### Notes :

1. Calculated concentration of boric acid, disodium tetraborate, anhydrous and tetraboron disodium heptaoxide, hydrate are based on the total/water extractive boron and sodium by ICP OES.
2. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
3. \* The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario.

### Benzotriazole UV Absorbant

Test Method : SGS In-house method( GZTC CHEM-TOP-102, with reference to US EPA Method 3550C:2007), analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
2-(3,5-Di-tert-butyl-2-hydroxyphenyl) benzotriazole (UV-320)	3846-71-7	mg/kg	5	ND

### Azo Dyes

Test Method : With reference to EN 14362-1 :2012 - Analysis was conducted with GC-MS/HPLC-DAD. Determination of 4-aminoazobenzene (CAS No.:60-09-3) – EN 14362-3:2012; with the use of Gas Chromatography – Mass Spectrometry (GC-MS)

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>
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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
4-Aminobiphenyl	92-67-1	mg/kg	5	ND
Benzidine	92-87-5	mg/kg	5	ND
4-chloro-o-toluidine	95-69-2	mg/kg	5	ND
2-naphthylamine	91-59-8	mg/kg	5	ND
o-aminoazotoluene	97-56-3	mg/kg	5	ND
5-nitro-o-toluidine / 2-Amino-4-nitrotoluene	99-55-8	mg/kg	5	ND
4-chloroaniline	106-47-8	mg/kg	5	ND
4-methoxy-m-phenylenediamine / 2,4-Diaminoanisole	615-05-4	mg/kg	5	ND
4,4'-diaminodiphenylmethane	101-77-9	mg/kg	5	ND
3,3'-dichlorobenzidine	91-94-1	mg/kg	5	ND
3,3'-dimethoxybenzidine	119-90-4	mg/kg	5	ND
3,3'-dimethylbenzidine	119-93-7	mg/kg	5	ND
3,3'-Dimethyl-4,4'-diaminodiphe nylmethane /	838-88-0	mg/kg	5	ND
4,4'-methylenedi-o-toluidine				
p-cresidine	120-71-8	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
4,4'-methylene-bis-(2-chloroaniline)	101-14-4	mg/kg	5	ND
4,4'-oxydianiline	101-80-4	mg/kg	5	ND
4,4'-thiodianiline	139-65-1	mg/kg	5	ND
o-toluidine	95-53-4	mg/kg	5	ND
4-methyl-m-phenylenediamine / 2,4-Toluyldiamine	95-80-7	mg/kg	5	ND
2,4,5-trimethylaniline	137-17-7	mg/kg	5	ND
4-aminoazobenzene	60-09-3	mg/kg	5	ND
O-Anisidine	90-04-0	mg/kg	5	ND
2,4-Xylidine	95-68-1	mg/kg	5	ND
2,6-Xylidine	87-62-7	mg/kg	5	ND

### Notes :

- (1) The BS EN 14362-1:2012 methods will enable further cleavage of 4 aminoazobenzene to non forbidden amines: aniline and 1,4 phenylenediamine, therefore, the test method of EN14362-3:2012 ; was employed to verify the presence of 4 aminoazobenzene.
- (2) Whenever 4-aminodiphenyl (CAS number 92-67-1), 2-naphylamine (CAS number 91-59-8) and 4-methoxy-m-phenylene-diamine (CAS number 615-05-4) is found, the use of banned azo colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorants used.
- (3) In case polyurethane materials are used, e.g. PU foams and coatings and in prints, it cannot be ruled out that certain amines, e.g. 4,4'-methylene-dianiline (MDA, CAS number 101-77-9) and 2,4-toluylen-diamine (TDA, CAS number 95-80-7) are released from the PU component and not from a





banned azo colorant.

(4) In case of pigment prints care has to be taken that 4,4'-methylene-dianiline (MDA, CAS number 101-77-9) is not released from a source of banned azo colorants but from e.g. a chemical fixing agent.

**Benzenamine,N-phenyl-,Reaction Products with Styrene and 2,4,4-Trimethylpentene**

Test Method : SGS In-house method (GZTC CHEM-TOP-244-01, with reference to EPA Method 3550C:2007), analysis was performed by GC-MS.

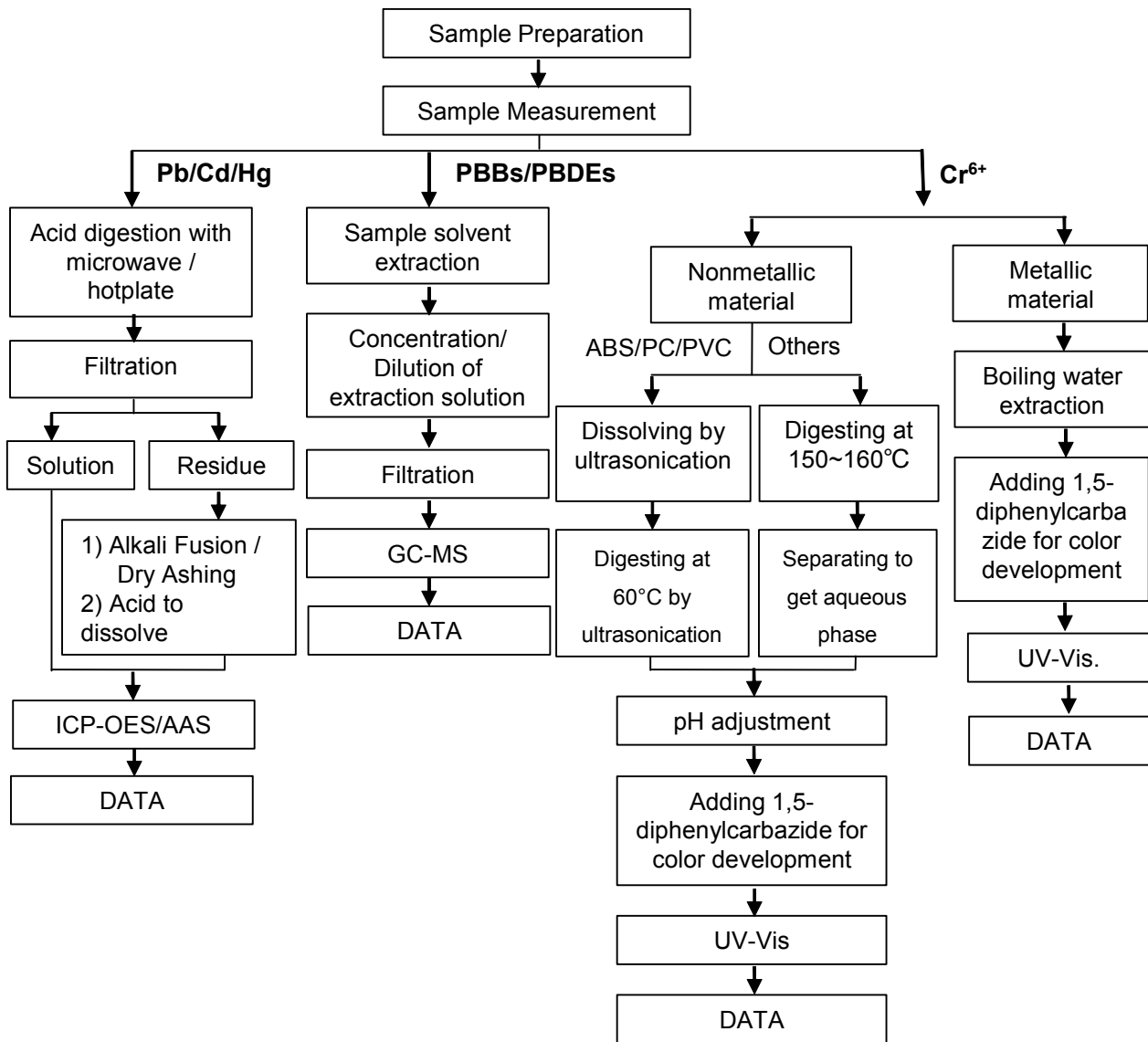
<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Benzenamine,N-phenyl-,Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)	68921-45-9	mg/kg	10	ND



ATTACHMENTS

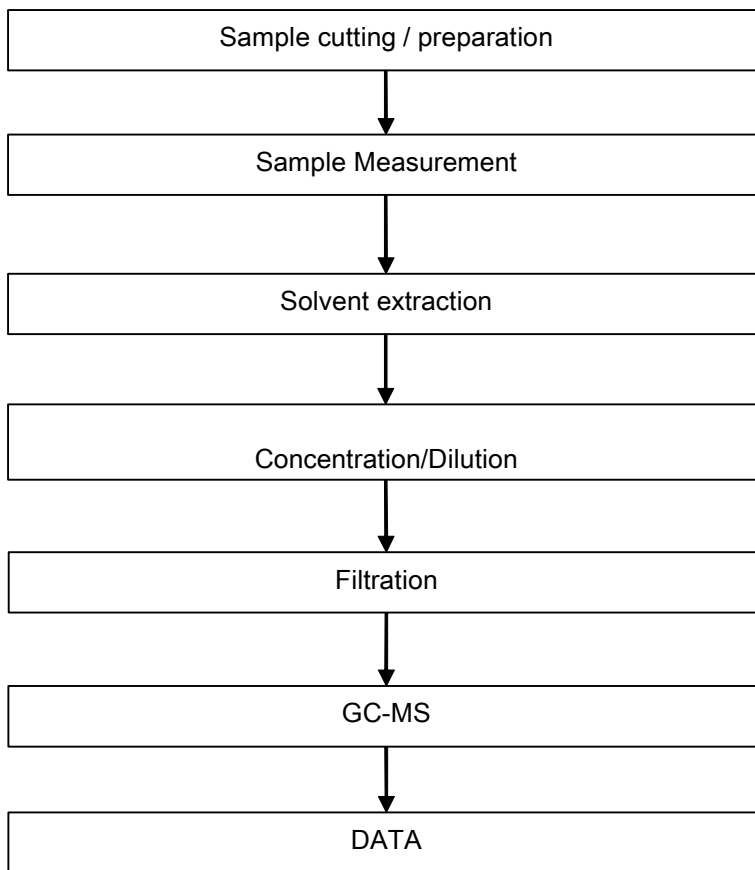
**Pb/Cd/Hg/Cr<sup>6+</sup>/PBBs/PBDEs Testing Flow Chart**

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



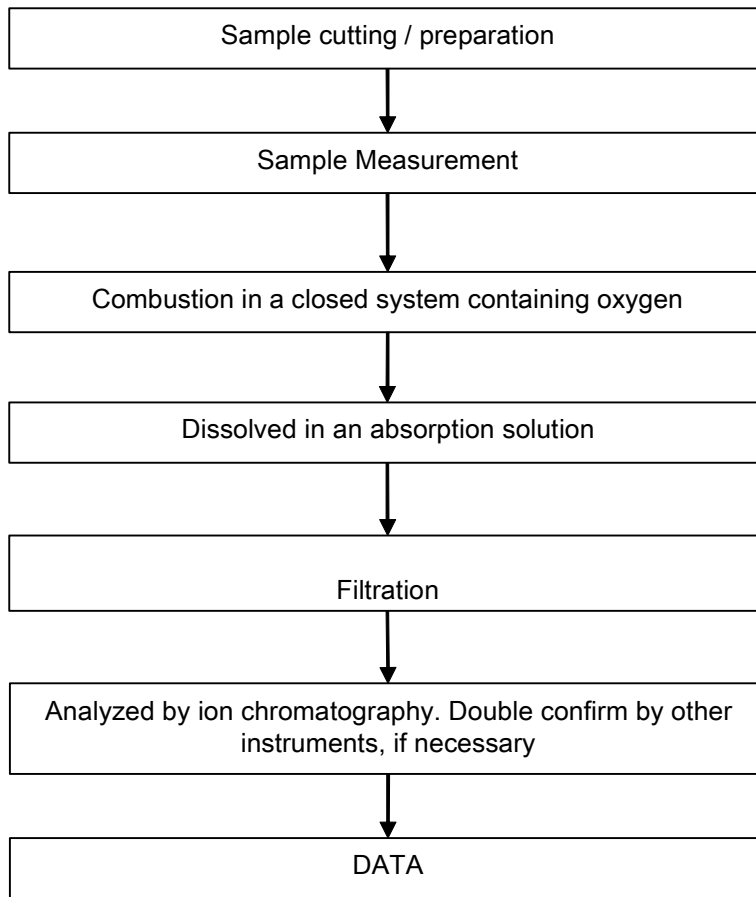
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Phthalates Testing Flow Chart



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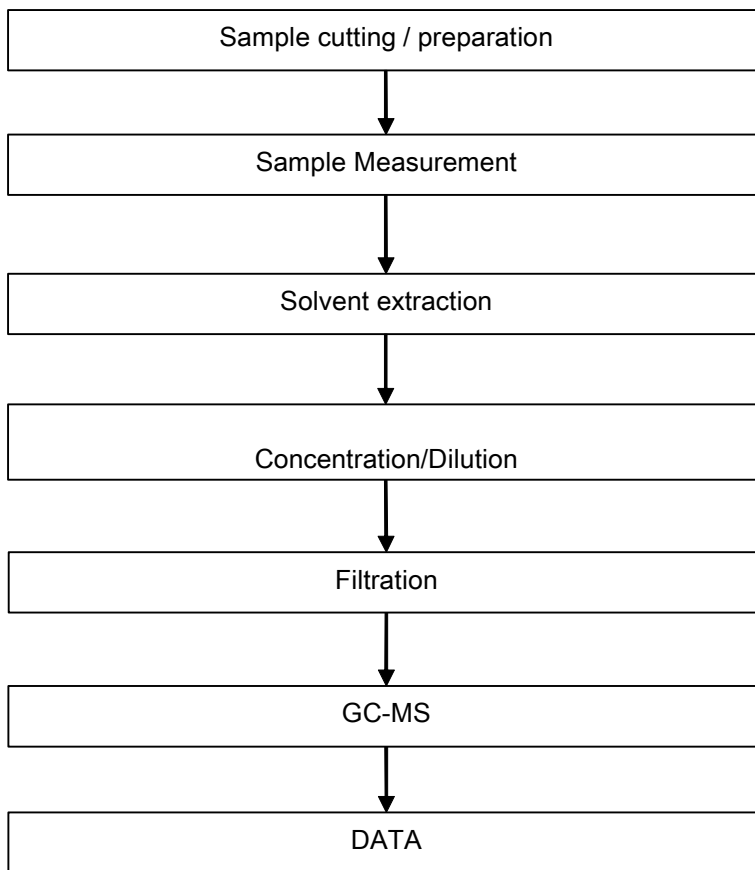
Halogen Testing Flow Chart





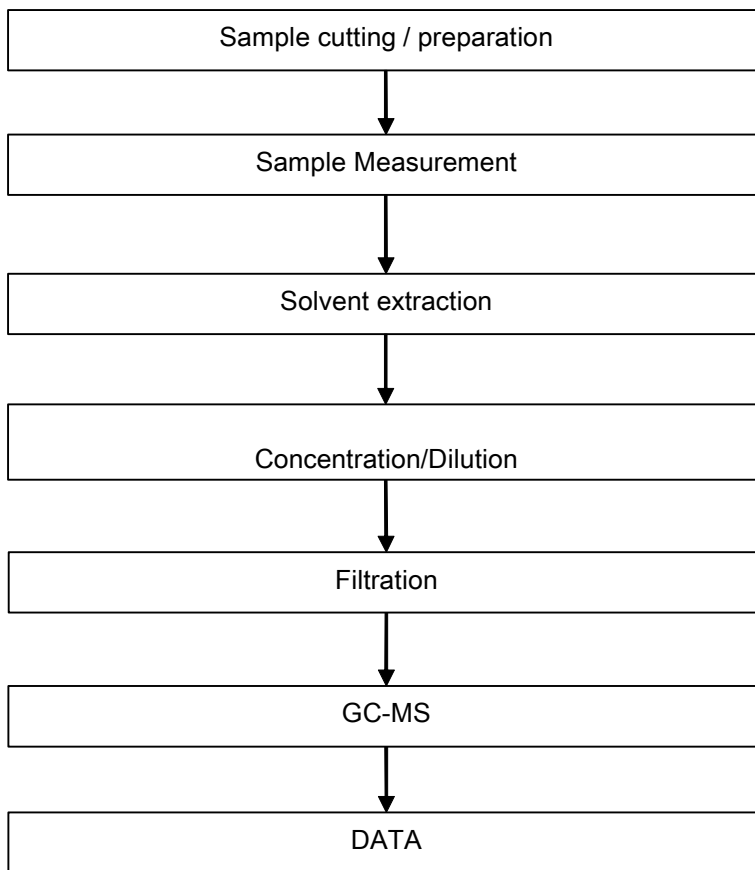
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HBCDD Testing Flow Chart



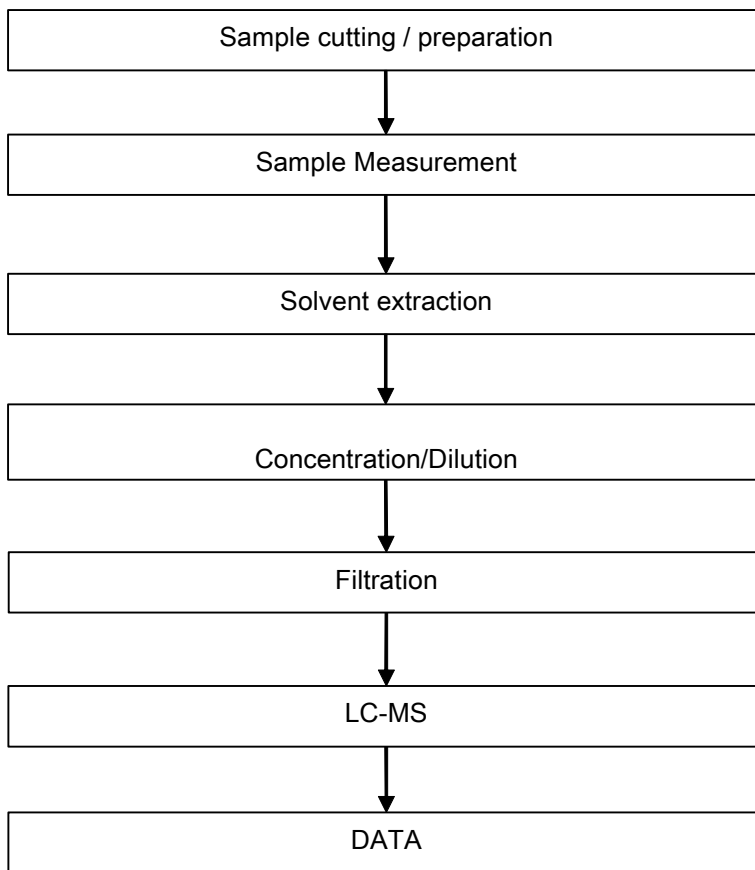
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PAHs Testing Flow Chart



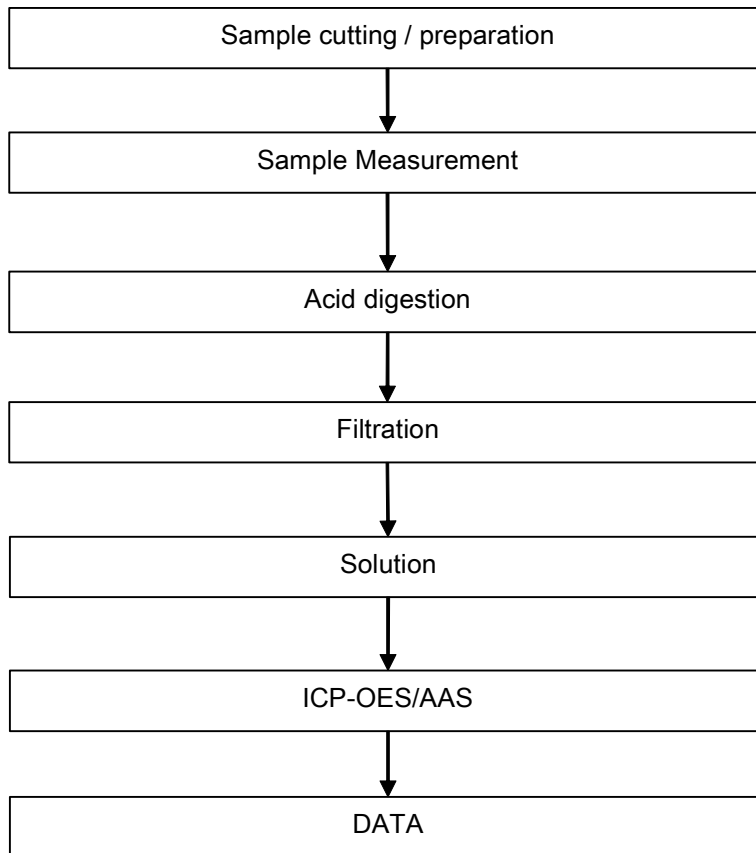
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PFOA / PFOS Testing Flow Chart



## ATTACHMENTS

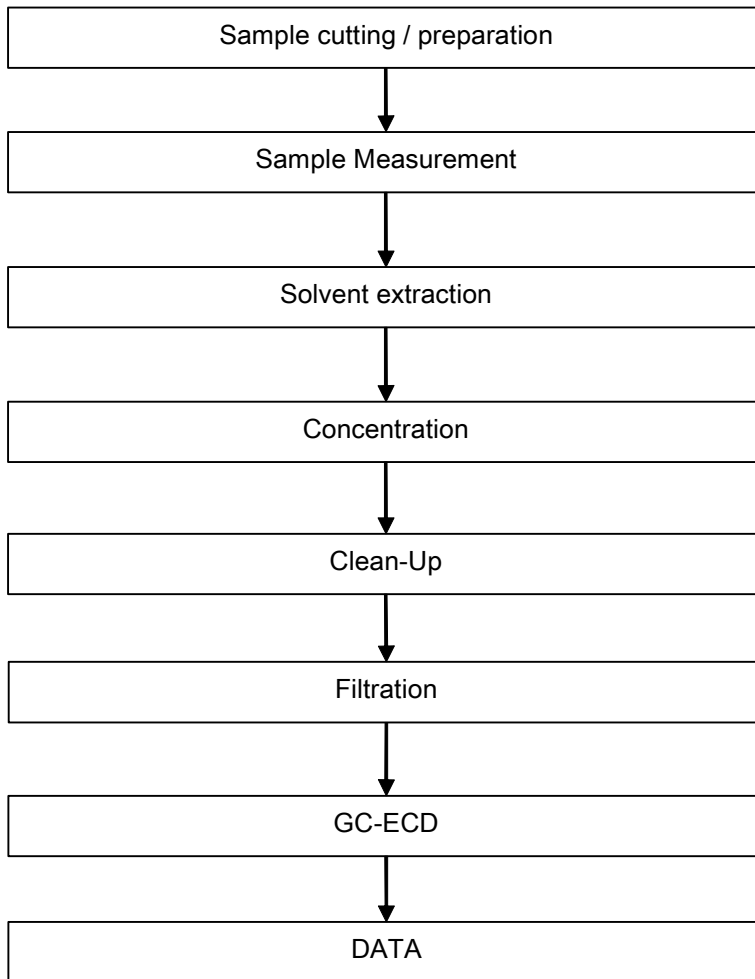
### Elementary Testing Flow Chart





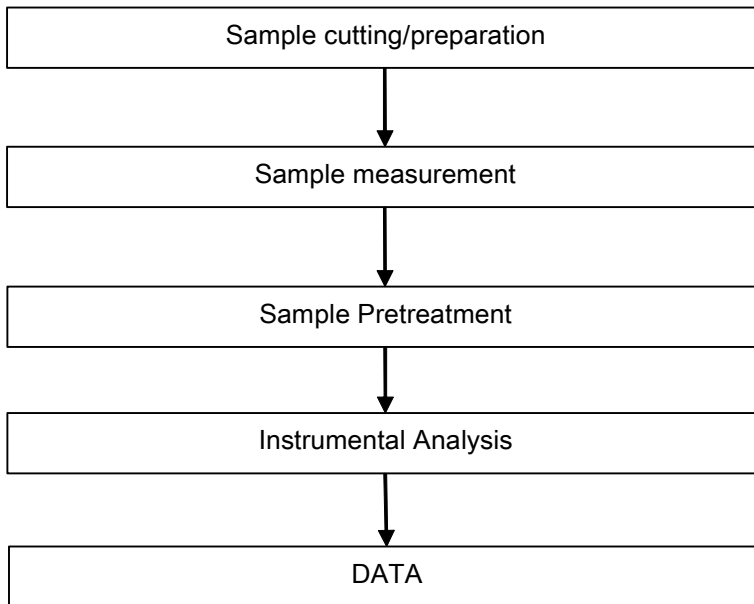
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SCCP/MCCP/LCCP Testing Flow Chart



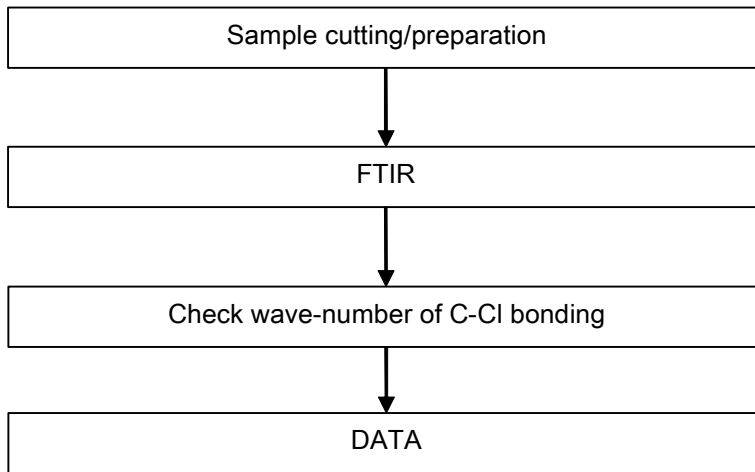
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### SVHC Testing Flow Chart



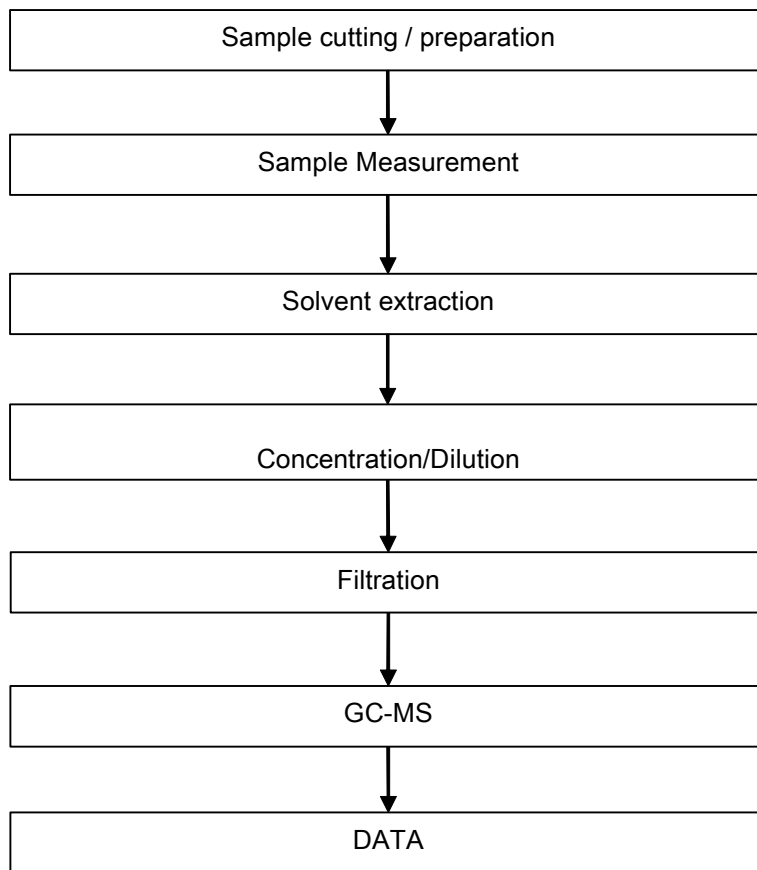
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### PVC Testing Flow Chart



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Dimethyl Fumarate Testing Flow Chart



Sample photo:



SGS authenticate the photo on original report only

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

