



Test Report

No. JQL151012632-4R

Date: Oct.13, 2015

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Applicant:

Address:

Manufacturer:

Address:

The following samples were submitted and identified on behalf of the clients

Sample Name: Sport DV (or Action Camera)

Model: SDV-105

SDV-100, SDV-103, SDV-104, SDV-106, SDV-107

Brand Name: --

Sample Received Date: Oct. 12, 2015

Test Period: From Oct. 12, 2015 to Oct. 13, 2015

Test Requested: In accordance with The RoHS Directive 2011/65/EU Annex II
—Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content

Test Method: Please refer to next pages

Result Summary:

Item	Test parameter	Conclusion
1	Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content—RoHS Directive 2011/65/EU Annex II	PASS

Signed for and on behalf of

Shenzhen Jialian Testing Consulting Co., Ltd.



Lris Ma

Approved Signatory

Note: The device described in page 1 is tested by us with the listed standards and found that SDV-105, SDV-100, SDV-103, SDV-104, SDV-106, SDV-107 have the same electronic circuit and PCB layout with “SDV-105” except the model name. “SDV-105” has passed ROHS tests (Report NO. JQL150717579-4R has the detailed content). So, no tests are necessary. The test results are contained in this test report.

Prepared By:

Shenzhen Jialian Testing Consulting Co., Ltd.

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Sample Description:

No.	Sample Name	Part Name	Description
1-1	Camera Case	Black Case	Black Plastics
1-2	Camera Case	Silvery Case	Silvery Plastics
1-3	Camera Case	Transparent Film	Transparent Plastics Film
2-1	View Screen	Optical Component	Multilayer Transparent Parts
2-2	View Screen	Electrical Component	Electrical Component
3-1	Camera	Optical Component	Glass Lens
3-2	Camera	Encapsulate Part	Mixed All Black Plastics
3-3	Camera	Mechanical Part	Mechanical Metal Part
3-4	Camera	Electrical Control Part	Electrical Component
4-1	PCB	PCB	Mixed All Camera PCB
5-1	Communication Interface	Mixed All Metal Parts	Silvery Metal
5-2	Communication Interface	Mixed All Plastics Parts	Plastics
6-1	Button	Camera Plastics Button	Black Plastics
6-2	Button	DV Metal Button/Spring	Silvery Metal
6-3	Button	Electrical Connection	Carbon Graphite Film
7-1	DV Case	Black Case	Black Plastics
7-2	DV Case	Transparent Case	Transparent Plastics
7-3	DV Case	Seal Ring	Rubber Gasket
8-1	Stand Holder	Mixed All Plastics Parts	Black Plastics
8-2	Stand Holder	Mixed All Metal Parts	Metal
8-3	Stand Holder	Mixed All Rubber Parts	Black Rubber
9-1	Power Adapter	Outer Case	Black Plastics
9-2	Power Adapter	Mixed All Metal Part	Metal
9-3	Power Adapter	Mixed All Plastics Part	Plastics
9-4	Power Adapter	Electrical Component	Electrical Component
10-1	Data Line	Outer Shell	Black Plastics
10-2	Data Line	Inner Metal Wire	Metal Line
10-3	Data Line	Mixed Metal Part	Silvery Metal
10-4	Data Line	Mixed Plastics Part	White Plastics
11-1	Fasternerr	Mixed All Metal Screw/	Silvery Metal

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Test Methods: with reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES
- (2) Determination of Lead by ICP-OES
- (3) Determination of Mercury by ICP-OES
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis
- (5) Determination of PBBs/PBDEs content by GC-MS



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XRF Results:

No.	Sample Name	Part Name	Pb (ppm)	Cd (ppm)	Hg (ppm)	Cr (ppm)	Br (ppm)
1-1	Camera Case	Black Case	BL	BL	BL	BL	IN
1-2	Camera Case	Silvery Case	BL	BL	BL	BL	IN
1-3	Camera Case	Transparent Film	BL	BL	BL	BL	IN
2-1	View Screen	Optical Component	BL	BL	BL	BL	IN
2-2	View Screen	Electrical Component	BL	BL	BL	BL	BL
3-1	Camera	Optical Component	BL	BL	BL	BL	BL
3-2	Camera	Encapsulate Part	BL	BL	BL	BL	IN
3-3	Camera	Mechanical Part	BL	BL	BL	BL	BL
3-4	Camera	Electrical Control Part	BL	BL	BL	BL	BL
4-1	PCB	PCB	BL	BL	BL	BL	IN
5-1	Communication Interface	Mixed All Metal Parts	BL	BL	BL	BL	BL
5-2	Communication Interface	Mixed All Plastics Parts	BL	BL	BL	BL	IN
6-1	Button	Camera Plastics Button	BL	BL	BL	BL	IN
6-2	Button	DV Metal Button/Spring	BL	BL	BL	BL	BL
6-3	Button	Electrical Connection	BL	BL	BL	BL	BL
7-1	DV Case	Black Case	BL	BL	BL	BL	IN
7-2	DV Case	Transparent Case	BL	BL	BL	BL	IN
7-3	DV Case	Seal Ring	BL	BL	BL	BL	IN
8-1	Stand Holder	Mixed All Plastics Parts	BL	BL	BL	BL	IN
8-2	Stand Holder	Mixed All Metal Parts	BL	BL	BL	BL	BL
8-3	Stand Holder	Mixed All Rubber Parts	BL	BL	BL	BL	IN
9-1	Power Adapter	Outer Case	BL	BL	BL	BL	IN
9-2	Power Adapter	Mixed All Metal Part	BL	BL	BL	BL	BL
9-3	Power Adapter	Mixed All Plastics Part	BL	BL	BL	BL	IN
9-4	Power Adapter	Electrical Component	BL	BL	BL	BL	BL
10-1	Data Line	Outer Shell	BL	BL	BL	BL	IN
10-2	Data Line	Inner Metal Wire	BL	BL	BL	BL	BL
10-3	Data Line	Mixed Metal Part	BL	BL	BL	BL	BL
10-4	Data Line	Mixed Plastics Part	BL	BL	BL	BL	IN
11-1	Fastener	Mixed All Metal Screw/	BL	BL	BL	BL	BL

NOTE:

- ppm=mg/kg=parts per million -BL=Below Limit - N.A.=Not Analysis
- IN= Inconclusive, chemical analysis necessary

Testing results are only used for reference.

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Chemical Test Results:

Flame Retardants	MDL	Law Limit	Result(ppm)					
			1-1	1-2	1-3	2-1	3-2	4-1
Polybrominated Biphenyls (Mono- Deca)(PBBs)	---	---	---	---	---	---	---	---
Monobromobiphenyl	5ppm	1000 ppm	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Polybrominated Diphenylethers (Mono - Deca) (PBDEs)	---	---	---	---	---	---	---	---
Monobromobiphenyl ether	5ppm	1000 ppm	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

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Flame Retardants	MDL	Law Limit	Result(ppm)					
			5-2	6-1	7-1	7-2	7-3	8-1
Polybrominated Biphenyls (Mono- Deca)(PBBs)	---	---	---	---	---	---	---	---
Monobromobiphenyl	5ppm	1000 ppm	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Polybrominated Diphenylethers (Mono - Deca) (PBDEs)	---	---	---	---	---	---	---	---
Monobromobiphenyl ether	5ppm	1000 ppm	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

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Flame Retardants	MDL	Law Limit	Result(ppm)					
			8-3	9-1	9-3	10-1	10-4	
Polybrominated Biphenyls (Mono- Deca)(PBBs)	---	---	---	---	---	---	---	
Monobromobiphenyl	5ppm	1000 ppm	N.D.	N.D.	N.D.	N.D.	N.D.	
Dibromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Tribromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Pentabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Hexabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Heptabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Octabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Nonabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Decabromobiphenyl	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Polybrominated Diphenylethers (Mono - Deca) (PBDEs)	---	---	---	---	---	---	---	
Monobromobiphenyl ether	5ppm	1000 ppm	N.D.	N.D.	N.D.	N.D.	N.D.	
Dibromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Tribromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Pentabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Hexabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Heptabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Octabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Nonabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	
Decabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.	N.D.	N.D.	

Note:

1. ppm=mg/kg

2. N.D.=Not Detected (Not detected is reported when the reading is less than detection limit value.)

3. Negative=absence of Cr(VI) in the metallic sample

Positive= presence of Cr(VI) in the metallic sample

(The tested sample should further verify by boiling-water-extraction method if the spot test result cannot be confirmed)

Boiling-water-extraction:

Negative=absence of Cr(VI) in the metallic sample

Positive=presence of Cr(VI) in the metallic sample

Boiling-water-extraction solution is equal or greater than 0.02mg/kg with 50cm² sample surface area.

4. #=Positive indicates the presence of Cr(VI) on the tested areas and result the regarded as not

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comply with RoHS requirement.

Negative indicates the presence of Cr(VI) on the tested areas and result the regarded as comply with RoHS requirement

5. MDL=Method Detection Limit

Remark:

(1) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr⁶⁺.

(b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-VIS(for CrVI) and GCMSD (for PBBs, PBDEs) is recommended to be performed. If the concentration exceeds the below warning value according to IEC 62321 Ed.1 111/95/2nd CDV (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	---	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) OL=Over Limit, BL=Below Limit. LOD=limit of Detection, ---=not conducted.

(d) The XRF screening test for RoHS elements- The reading may be different to the actual content in the sample be of non-uniformity composition.

(2) (a)mg/kg=ppm=0.0001%, N.D.=not detected(<MDL),

(b)Unit and Method Detection Limit(MDL) in wet chemical test.

Test Items	Pb	Cd	Hg
Units	Mg/kg	Mg/kg	Mg/kg
MDL	2	2	2

The MDL for single compound of PBBs & PBDEs is 5mg/kg and MDL of Cr⁶⁺ for polymer & composite sample is 2mg/kg.

(c) According to IEC 62321 Ed.1 111/95/2nd CDV, result on Cr⁶⁺ for metal sample is shown as Positive/Negative.

Negative=Absence of Cr⁶⁺ coating, Positive= Persence of Cr⁶⁺ coating.



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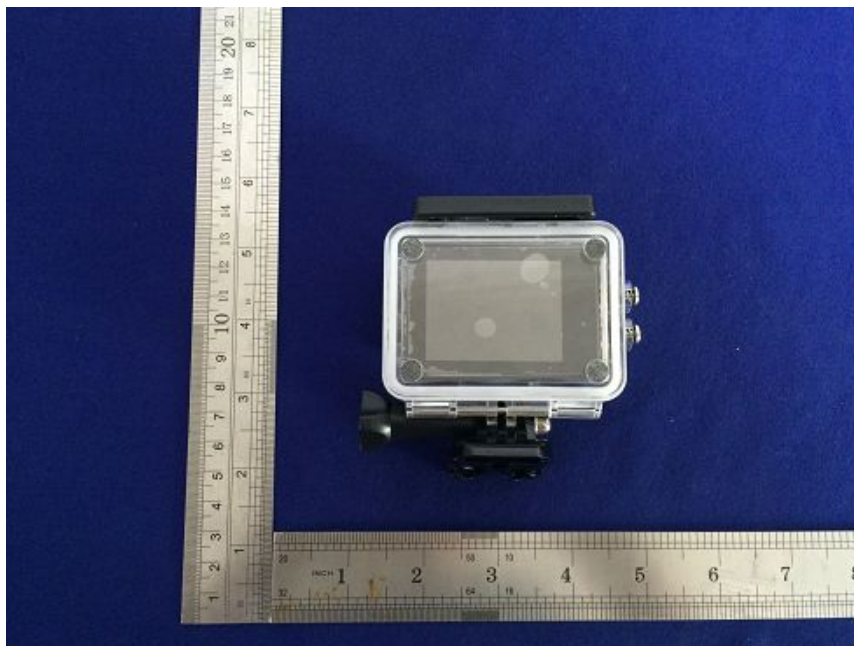
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Appendix 1:

Photo of Submitted Sample



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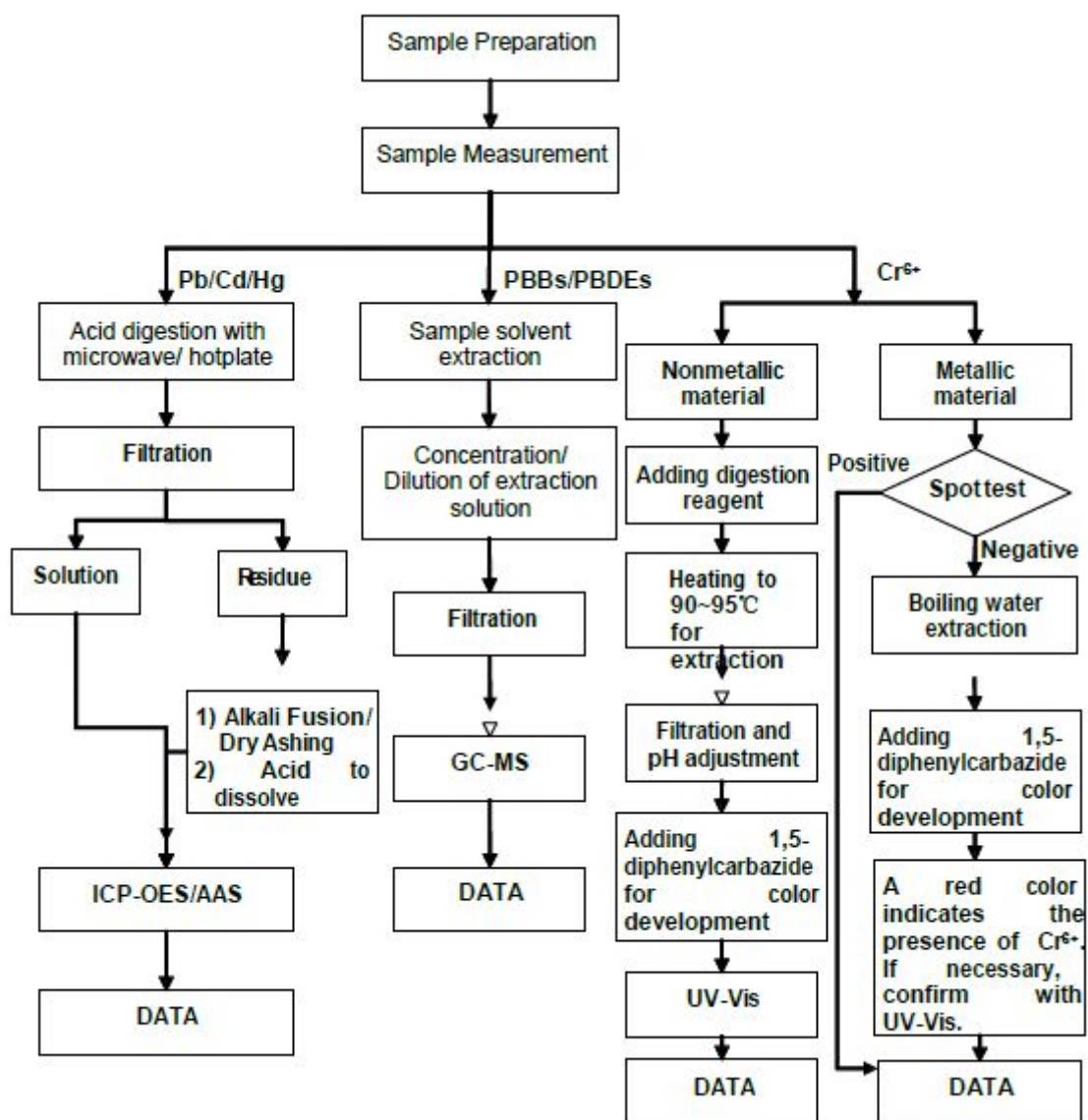
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Appendix 2:

RoHS Testing Flow Chart

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





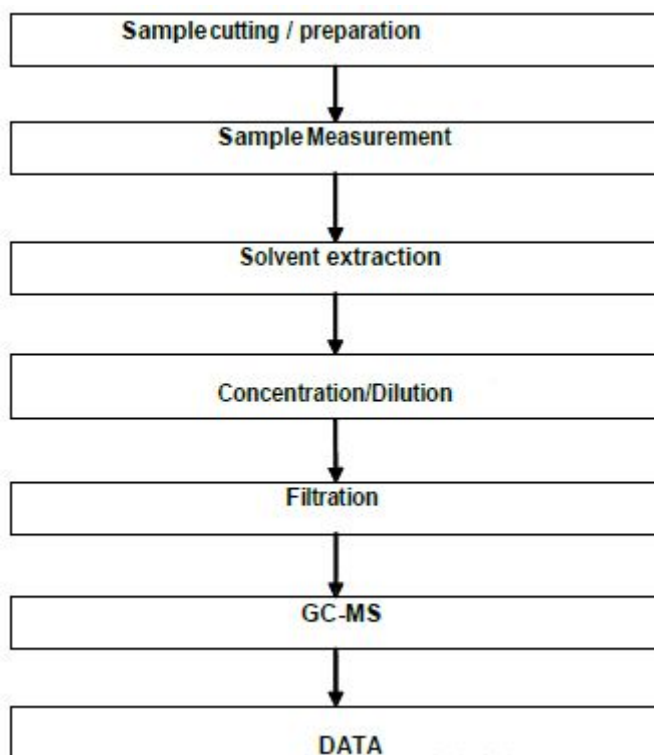
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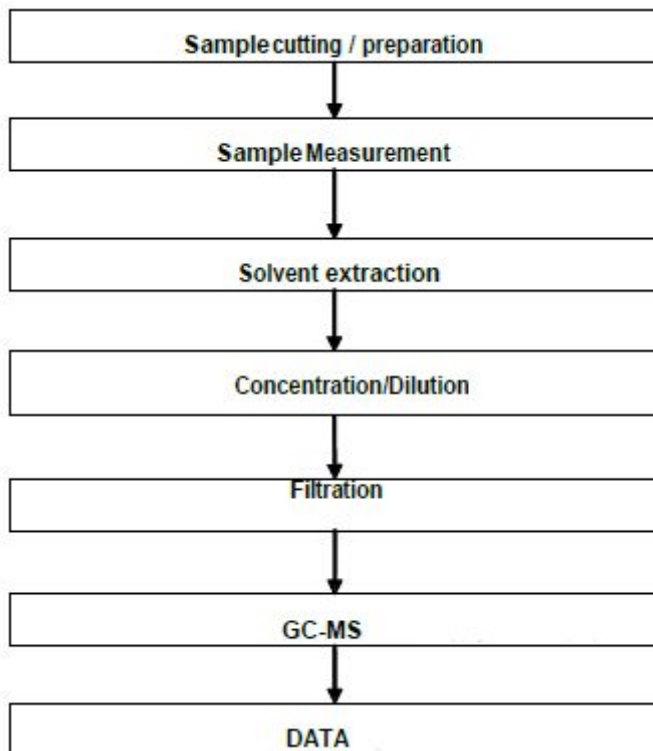
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HBCDD Testing Flow Chart





Phthalates Testing Flow Chart



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