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检测
TESTING
CNAS L7462

Verification Report

Report No.: SFT23081748078E

Date: August 24, 2023

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Applicant: SHENZHEN IREADER OPTOELECTRONICS CO.,LTD

Address: Room 503, Building A, Ganghongji High tech Intelligent industrial Park, NO.1008 of Songbai Road, Nanshan,District,Shenzhen, Guangdong, China

The following merchandise was (were) submitted and identified by client as:

Sample Name: 单相电测量模块

Model No.: IM1275 系列

County of Origin: China

Manufacturer: SHENZHEN IREADER OPTOELECTRONICS CO.,LTD

Address: Room 503, Building A, Ganghongji High tech Intelligent industrial Park, NO.1008 of Songbai Road, Nanshan,District,Shenzhen, Guangdong, China

Test Period: From August 17, 2023 to August 23, 2023

SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION
Heavy Metals , Flame Retardants and Phthalates Content - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments Commission Delegated Directive (EU) 2015/863	PASS

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

Signed for and on Behalf of SFT



Tom Yin / Technical Manager

Guangdong Safety Testing Co., Ltd.

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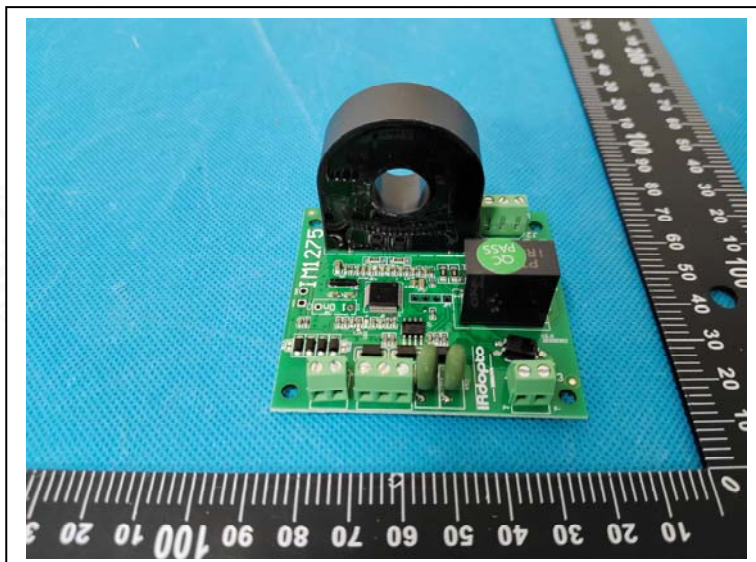
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Sample Photo



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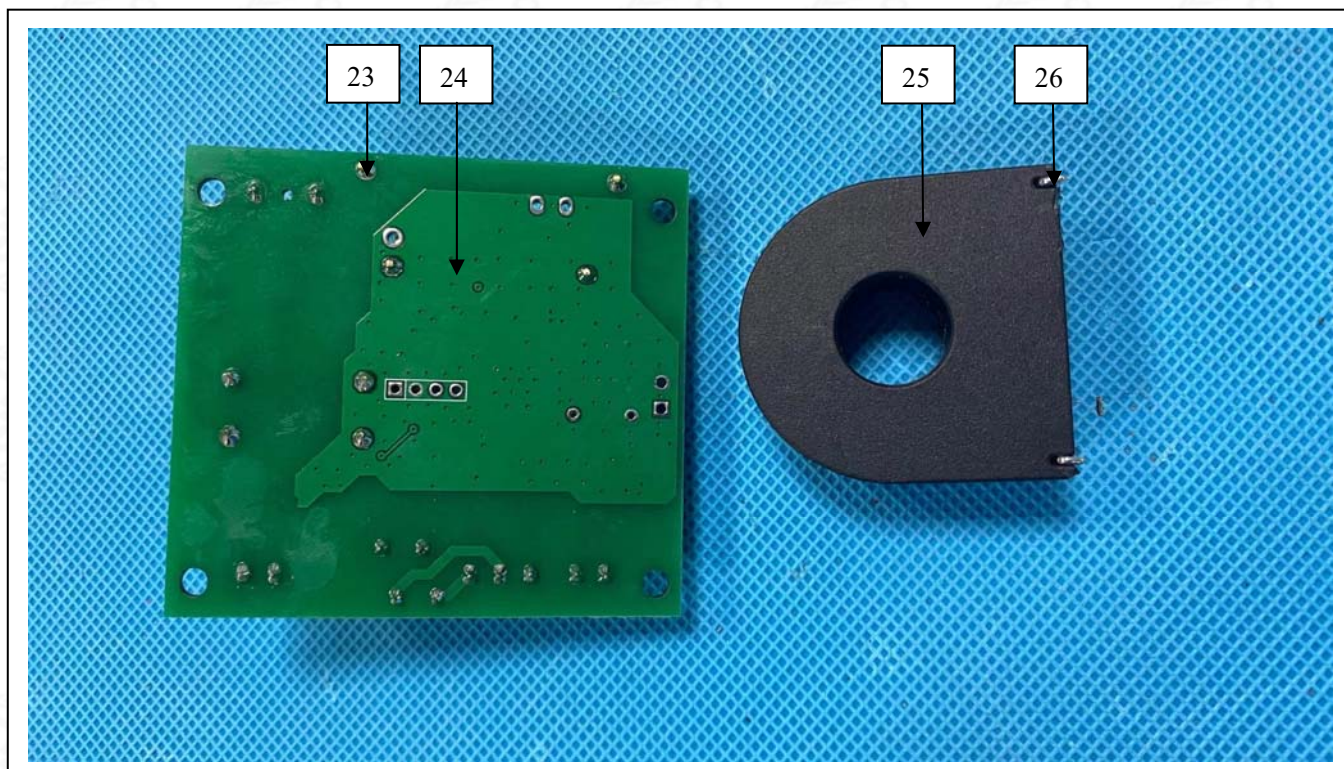
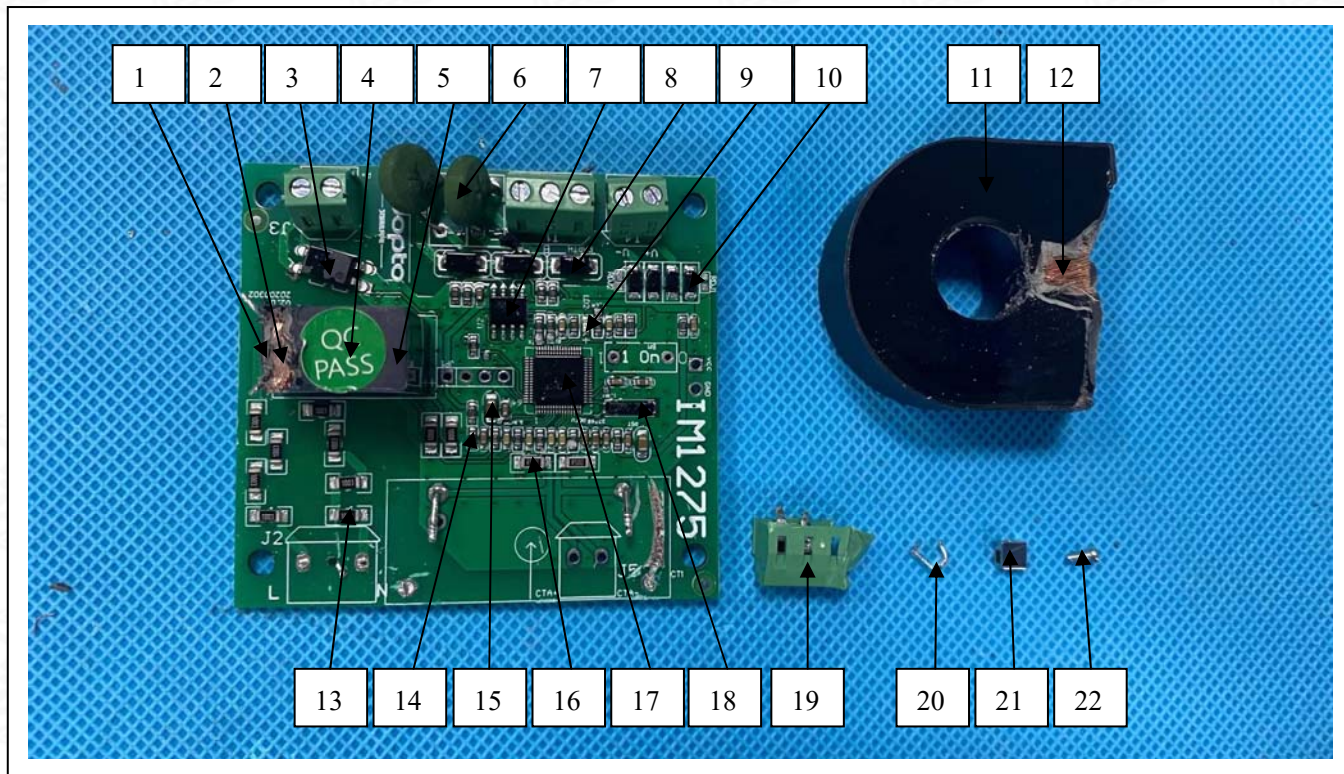
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Sample No.	Sample Description	Remark
1	Black glue	-
2	Copper colored metal wire	-
3	Optocoupler	-
4	Green sticker with white printing	-
5	Black plastic	-
6	Resistor	-
7	IC	-
8	Diode	-
9	LED	-
10	Diode	-
11	Black glue	-
12	Copper colored metal wire	-
13	Resistor	-
14	Capacitor	-
15	Capacitor	-
16	Resistor	-
17	IC	-
18	Rectifier bridge	-
19	Green plastic	-
20	Silver metal	-
21	Silver metal	-
22	Silver metal screw	-
23	Silver solder tin	-
24	PCB	-
25	Black plastic	-
26	Silver metal pin	-

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Test Result(s):

Heavy Metals , Flame Retardants Content - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments Commission Delegated Directive (EU) 2015/863

Sample No.	Test Item	XRF screening Result	Result of Wet Chemical Testing (mg/kg)	Conclusion
1	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	IN	ND	PASS
	PBDEs	IN	ND	PASS
2	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	NA	-	-
	PBDEs	NA	-	-
3	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
4	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
5	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
6	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	IN	ND	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
7	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS

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Sample No.	Test Item	XRF screening Result	Result of Wet Chemical Testing (mg/kg)	Conclusion
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
8	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
9	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
10	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
11	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
12	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	NA	-	-
	PBDEs	NA	-	-
13	Pb	OL	2806#	EXEMPTED
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	IN	ND	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
14	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
15	Pb	BL	-	PASS

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Sample No.	Test Item	XRF screening Result	Result of Wet Chemical Testing (mg/kg)	Conclusion
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
16	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
17	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
18	Pb	OL	20554#	EXEMPTED
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
19	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	BL	-	PASS
	PBDEs	BL	-	PASS
20	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	NA	-	-
	PBDEs	NA	-	-
21	Pb	OL	24989#	EXEMPTED
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	NA	-	-
	PBDEs	NA	-	-
22	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS

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Sample No.	Test Item	XRF screening Result	Result of Wet Chemical Testing (mg/kg)	Conclusion
	PBBs	NA	-	-
	PBDEs	NA	-	-
23	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	NA	-	-
	PBDEs	NA	-	-
24	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	IN	ND	PASS
	PBDEs	IN	ND	PASS
25	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	IN	ND	PASS
	PBDEs	IN	ND	PASS
26	Pb	BL	-	PASS
	Cd	BL	-	PASS
	Hg	BL	-	PASS
	Cr (VI)	BL	-	PASS
	PBBs	NA	-	-
	PBDEs	NA	-	-

Phthalates Content - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments Commission Delegated Directive (EU) 2015/863

Sample No.	Result (mg/kg)				Conclusion
	DBP	BBP	DEHP	DIBP	
5+19+25	ND	ND	ND	ND	PASS
9+24	ND	ND	ND	ND	PASS

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Remark:

- It is the result on total Br while test item is PBBs/PBDEs. It is the result on total Cr while test item is Cr (VI).
- Results are obtained by EDXRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-VIS (for Cr (VI)) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3:2013 (unit: mg/kg) .

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

- ND = Not Detected (<MDL)
- mg/kg = milligram(s) per kilogram = ppm = part(s) per million
- MDL = Method Detection Limit
- BL = Below Limit
- OL = Over Limit
- IN = Inconclusive
- NA= Not Applicable
- The XRF screening test for RoHS elements - The reading may be different to the actual content in the sample be of non-uniformity composition.
- For Metal sample:
 - a. The sample is positive for CrVI if the CrVI concentration is greater than $0.13\mu\text{g}/\text{cm}^2$. The sample coating is considered to contain CrVI.
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than $0.10\mu\text{g}/\text{cm}^2$). The coating is considered a non-CrVI based coating.
 - c. The result between $0.10\mu\text{g}/\text{cm}^2$ and $0.13\mu\text{g}/\text{cm}^2$ is considered to be inconclusive unavoidable coating variations may influence the determination
- Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.
- “#” According to the client's statement, Lead (Pb) in No.21 are exempted by EU ROHS Directive 2011/65/EU base on Annex III 6(c): Copper alloy containing up to 4% (40000 mg/kg) lead by weight.
- “#” According to the client's statement, Lead (Pb) in No.18 is exempted by EU ROHS Directive 2011/65/EU base on Annex III 7(a): Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead can be exempted).
- “#” According to the client's statement, Lead (Pb) in No.13 is exempted by EU ROHS Directive 2011/65/EU base on Annex III 7(c)-I: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

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Test Items and their Test Methods, Equipments, Method Detection Limit and Limit [for European Council Directive 2011/65/EU&(EU) 2015/863] :

Test Items	Test Method	Equipment(s)	Method Detection Limit	Limit
Screening Test	IEC 62321-3-1:2013	XRF	-	-
Pb	IEC 62321-5:2013	ICP-OES/AAS	10mg/kg	1000mg/kg
Cd	IEC 62321-5:2013	ICP-OES/AAS	10mg/kg	100mg/kg
Hg	IEC 62321-4:2013+AMD1:2017	ICP-OES	10mg/kg	1000mg/kg
Cr	IEC 62321-5:2013	ICP-OES	10mg/kg	-
Cr (VI)	IEC 62321-7-2:2017	UV-VIS	10mg/kg	1000mg/kg
	IEC 62321-7-1:2015	UV-VIS	0.10µg/cm ²	1000mg/kg
PBBs	IEC 62321-6:2015	GC-MS	50mg/kg	1000mg/kg
PBDEs	IEC 62321-6:2015	GC-MS	50mg/kg	1000mg/kg
DBP	IEC 62321-8:2017	GC-MS	100mg/kg	1000mg/kg
BBP	IEC 62321-8:2017	GC-MS	100mg/kg	1000mg/kg
DEHP	IEC 62321-8:2017	GC-MS	100mg/kg	1000mg/kg
DIBP	IEC 62321-8:2017	GC-MS	100mg/kg	1000mg/kg

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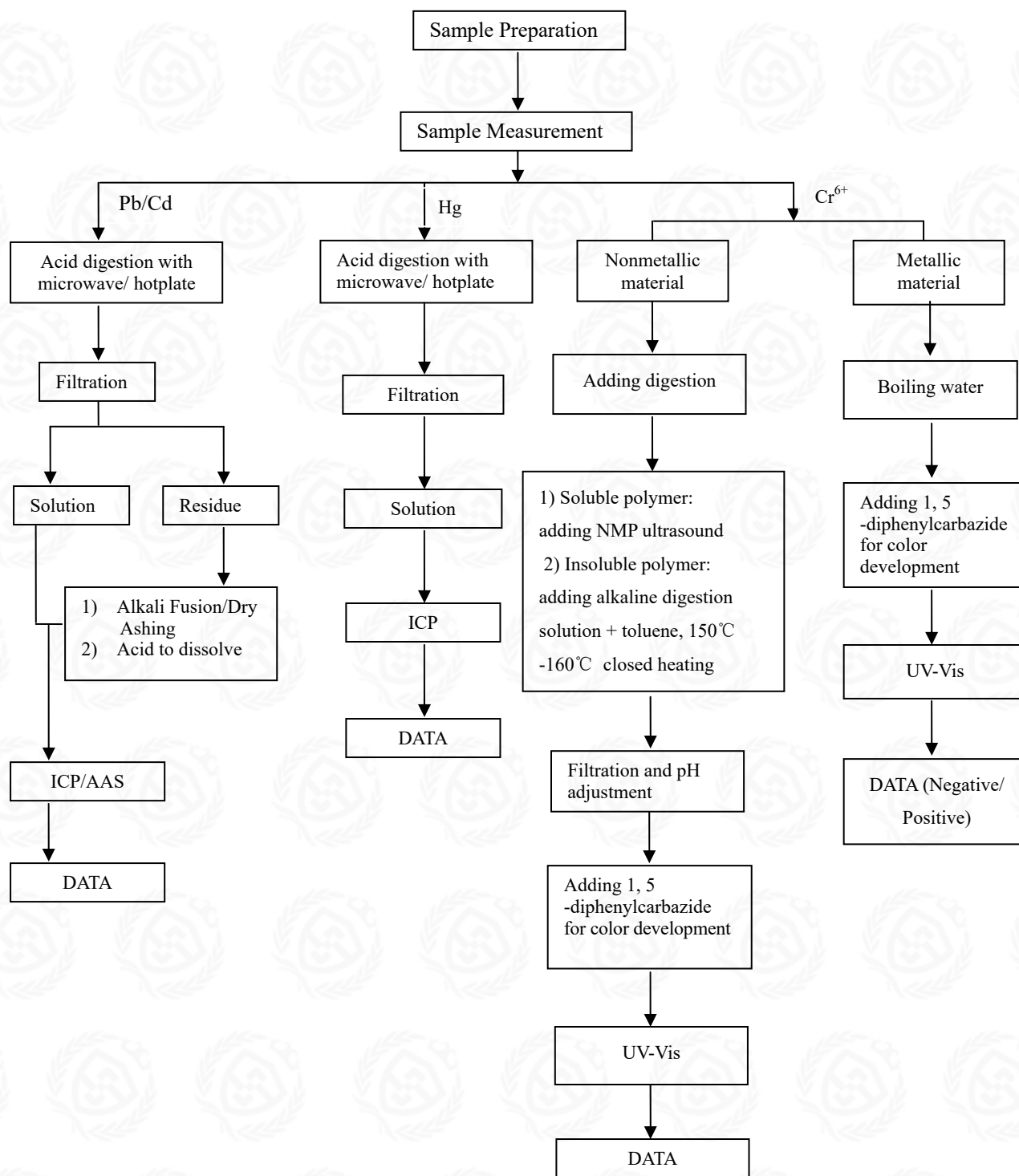
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Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart



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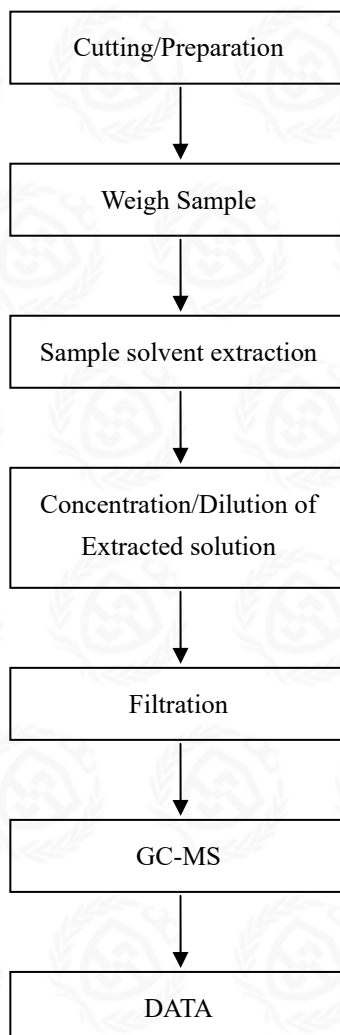
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PBBs/PBDEs Testing Flow Chart



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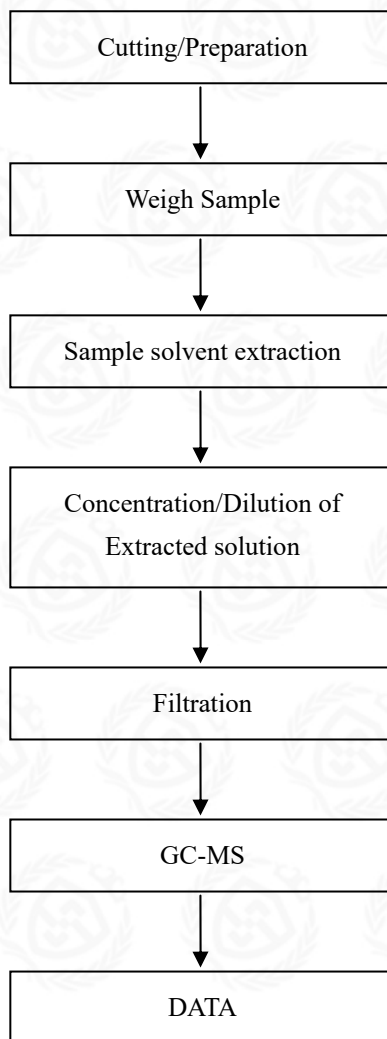
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Phthalates Testing Flow Chart



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