

Test Report

No. SHAEC2113293804

Date: 05 Jul 2021

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APPLIED POWER MICROELECTRONICS CO., LTD/Chipcore Microelectronics(Nanjing) CO.,LTD
#206, Building#5, 8 HuashanZhongLu, Xinbei District, Changzhou, Jiangsu/No 88 Jiang Miao Rd,Teng Fei Building,Room401、402, Jiang Bei District,Nanjing,Jiangsu Province

The following sample(s) was/were submitted and identified on behalf of the clients as :
Metal-Oxide-Semiconductor Field-Effect Transistor, (MOSFET)

SGS Job No. : SP21-019974 - SH
Model No. : CM3416
Client Ref. Information : SEE ATTACHMENT
Date of Sample Received : 28 Jun 2021
Testing Period : 28 Jun 2021 - 01 Jul 2021
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 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-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Sue Sheng

Sue Sheng
Approved Signatory

scan to see the report



SHAEC2113293804



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA21-132938.002	Black body with silvery metal

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+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	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	1000	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



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Pentabromodiphenyl ether	-	mg/kg	5	ND
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
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	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.

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>002</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



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DFW SERIES	TO SERIES	SOT SERIES	SOP SERIES			
CM2302B	CM2300	CM2302A	CM2312	CM3416E	CM3404B	CM2304A
CM3400	CMN2342	CMBSS138	2N7002K	CM2310	CM2324	CM2301C
CM2305B	CM2305A	CM2301B	CM2301A	CM2305	CM3415E	CM2303
CM3401	CM3407	CM2326	CM3401A			
CMN2006S8	CMN3018S8	CMN3012S8	CMP2033S8	CM4953	CMP3049S8	CM9435
CM4435	CM4407	CM7319S8	CMN6009S8	CM12N06GS8	CMN6086S8D	CMN6006S8
CMN4006S8						
CM1602	CM1602S	CM1601	CM1601S	CM1601A	CM1602A	
CM8205	CM2616E	CM2615E				
CM3134E	CM3139E					
CM3139EW						
CM3134T	CM3139T	CM3134BT	CM3139BT			
CMP3031F2						
CMN3010F3	CMN3006F3					
CM60N10AGF5	CM60N10GF5	CMN6009F5	CMN4004F5	CMN3003F5	CMN3004F5	
CMN2006F3	CM4407AF3	CMN4006F3	CMN3013F3D			
CMN3205P	CM04N65P	CM07N65P	CM10N65P	CM12N65P		
CM04N65F	CM07N65F	CM12N65F	CM07N80F			
CM05N50D	CM04N65D	CM07N65D				
CMN3004U	CMN4008LU	CM15N10U	CM40P03U	CM05N50U	CM04N65U	
CM07N65U	CM04N80U					
CMN3205B	CM100N15GB	CMN3003B	CM60N10AGB			



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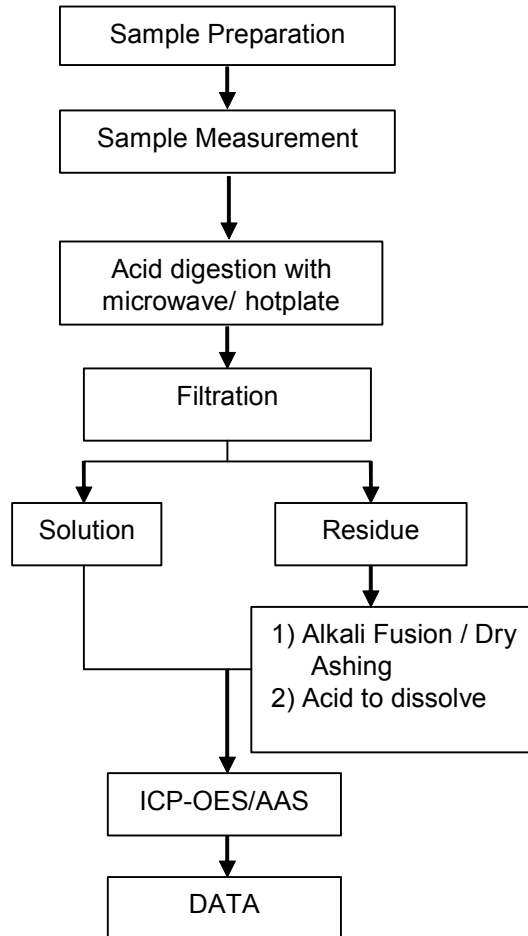
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.

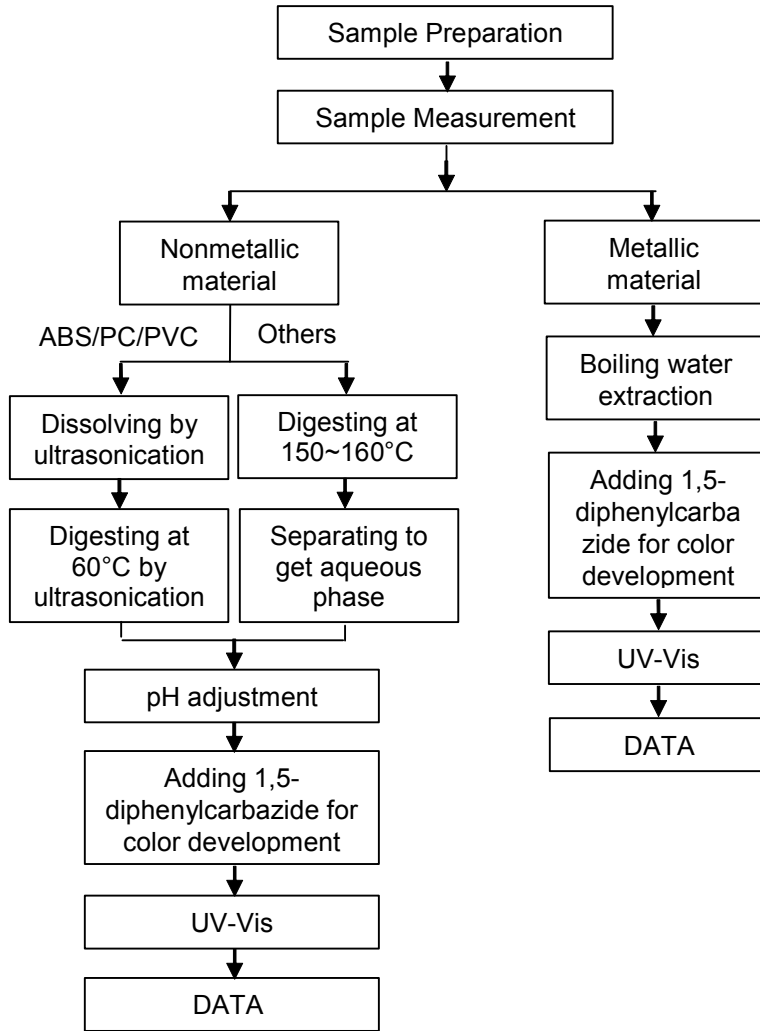


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Hexavalent Chromium (Cr(VI)) Testing Flow Chart

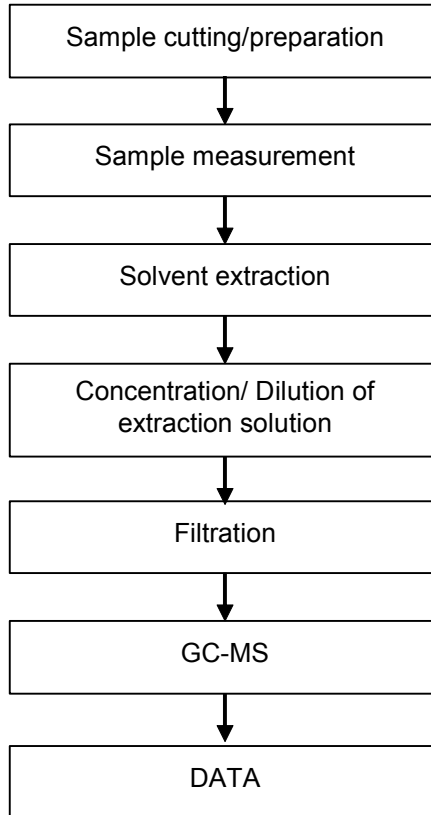


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PBBs/PBDEs Testing Flow Chart

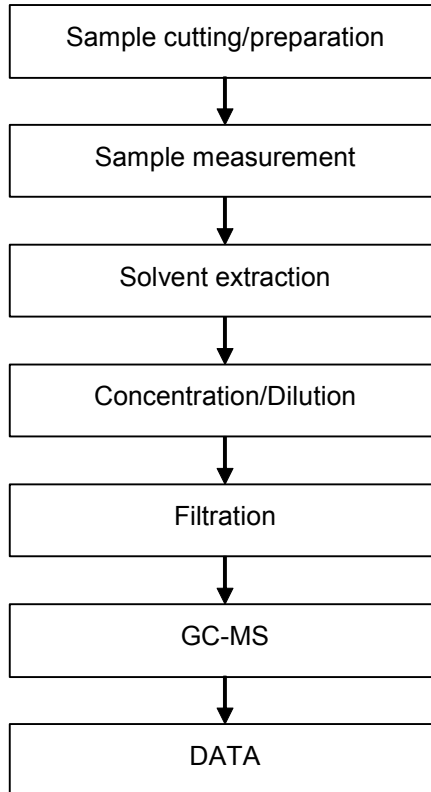


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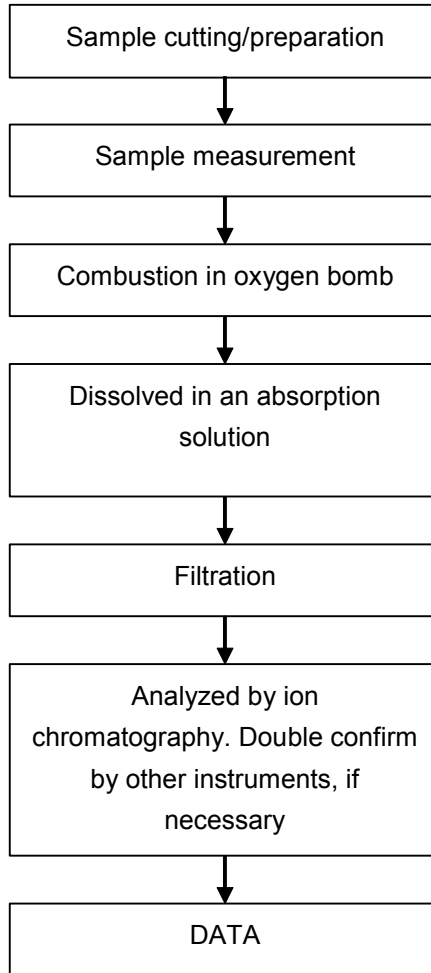
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Phthalates Testing Flow Chart



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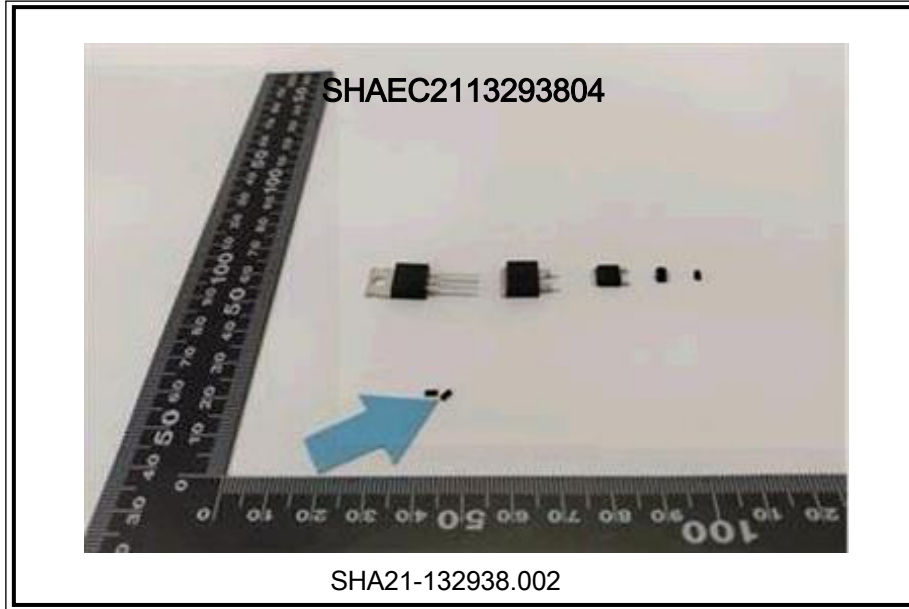
Halogen Testing (oxygen bomb) Flow Chart



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