

測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 1 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as) :

樣品名稱(Sample Description) : HIGH TEMPERATURE SOLDER PROCESSED PLASTIC MOLDED PRODUCTS (INCLUDED SURFACE MOUNT AND AXIAL PACKAGE PRODUCTS)/ 各項高溫焊錫製程塑封裝產品(包含貼片與軸式封裝產品)

樣品型號(Style/Item No.) : 請參考第5頁 (PLEASE REFER TO PAGE 5)

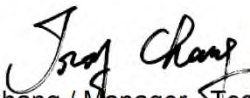
收件日期(Sample Receiving Date) : 2020/06/12

測試期間(Testing Period) : 2020/06/12 to 2020/06/19

測試需求(Test Requested) :

- (1) 依據客戶指定, 參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP. (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)
- (2) 其他測試項目請見下一頁 . (Please refer to next pages for the other item(s).)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages).


Troy Chang / Manager - Tech
Signed for and behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



PIN CODE: BE37EBC4

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://twap.sgs.com/Terms-and-Conditions.html> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://twap.sgs.com/Terms-and-Conditions.html>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 2 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

測試結果(Test Results)

測試部位(PART NAME)No. 1 : 各項高溫焊錫製程塑封裝產品(包含貼片與軸式封裝產品)(HIGH TEMPERATURE SOLDER PROCESSED PLASTIC MOLDED PRODUCTS (INCLUDED SURFACE MOUNT AND AXIAL PACKAGE PRODUCTS))

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)
				No. 1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013, 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-OES.	2	n. d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5: 2013, 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-OES.	2	29100 (▲)
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4:2013+ AMD1:2017, 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-OES.	2	n. d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321-7-2: 2017, 以UV-VIS 檢測. / With reference to IEC 62321-7-2: 2017 and performed by UV-VIS.	8	n. d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考CEN/TS 15968: 2010, 以液相層析 / 質譜儀檢測. / With reference to CEN/TS 15968: 2010. Analysis was performed by LC/MS.	0.01	n. d.
全氟辛酸及其鹽類 / PFOA and its salts (CAS No.: 335-67-1 and its salts)	mg/kg	參考CEN/TS 15968: 2010, 以液相層析 / 質譜儀檢測. / With reference to CEN/TS 15968: 2010. Analysis was performed by LC/MS.	0.01	n. d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://twap.sgs.com/Terms-and-Conditions.html> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://twap.sgs.com/Terms-and-Conditions.html>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 3 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)
				No. 1
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321-6: 2015, 以氣相層析/ 質譜儀檢測. / With reference to IEC 62321-6: 2015 and performed by GC/MS.	-	n. d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n. d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n. d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n. d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n. d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n. d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n. d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n. d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n. d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n. d.
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n. d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n. d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n. d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n. d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n. d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n. d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n. d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n. d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n. d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n. d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg	5	n. d.	
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg	5	n. d.	
六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD) (CAS No. : 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考IEC 62321: 2008, 以氣相層析/ 質譜儀檢測. / With reference to IEC 62321: 2008. Analysis was performed by GC/MS.	5	n. d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://twap.sgs.com/Terms-and-Conditions.html> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://twap.sgs.com/Terms-and-Conditions.html>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 4 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)
				No. 1
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg	參考IEC 62321-8: 2017, 以氣相層析/ 質譜儀檢測. / With reference to IEC 62321-8: 2017. Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n. d.
鄰苯二甲酸二異丁酯 / DIBP (Di- isobutyl phthalate) (CAS No.: 84-69- 5)	mg/kg		50	n. d.

備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n. d. = Not Detected (未檢出)
4. "-" = Not Regulated (無規格值)
5. 全氟辛酸及其鹽類包含CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.
(PFOA and its salts including CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.)
6. (▲) 依據申請公司聲明, 測試部位No. 1” 鉛” 之測試結果適用歐盟2011/65/EU Annex III - 7(c)-I “含鉛之玻璃或陶瓷的電器和電子元件, 介電陶瓷電容器除外” 及 “7(a) 高熔點鉛錫中的鉛 “之豁免條款. / The applicant claimed that the test result of lead in No. 1 was applied to 2011/65/EU Annex III - 7(c)-I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors and 7(a) Lead in high melting temperature type solders.

測試報告

Test Report

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 5 of 11

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

樣品型號(Style/Item No.):

1. ASM-10A / ASM-10A-L / ASM-10C/ DO-218/ MINI-SMA(SOD-123) / SOD-123H / SOD-123H1 / SOD-123HT / SOD-123HT1 / SOD-123T/ SOD-123S / SOD-123S1/ SOD-123S-1/ SOD-123S-2/ SOD-123S-3/ SOD-123S-4/ SOD-123S-5/ SOD-123S7 / SOD-123S8 / SOD-123SA1/ SOD-123SA3/ SOD-123ST / SOD-123ST-1/ SOD-123ST-2/ SOD-323ST1/ SOD-123ST2/ SOD-323 / SOD-323HE / SOD-323S / SOD-323ST2/ SOD-523 / MINI-MELF (DO-213AA/GL34) / SMA / MELF(DO-213AB)/ SMA-F / SMA-HS / SMA-HS1/ SMA-HS2/ SMA-HSFL / SMA-HSFL1/ SMA-HSFL2/ SMA-HST / SMA-L / SMA-W / SMA-S / SMB(DO-214AA) / SMB-F(DO-214AA) / SMB-FL/ SMB-HS / SMB-HSFL / SMB-S / SMC (DO-214AB) / SMC-F (DO-214AB) / SMC-T1 / SMC-T2 / SMC-T3 / SMC-T4 /

2. A-405/ DO-14/ DO-15/ DO-27/ DO-201AD/ DO-201AE/ DO-218/ DO-34/ DO-405/ DO-41/ P6/ R6/ P600/ HV/ HV03/ HV05/ HV07/ FH/ FHV/ FV5M/ FV5M-1/ FV5M-2/ FH10M/ GT/ GH/ BCT/ BJ/ BL/ BU/ W/ MD/ P0600M/

3. TO-126 / TO-220/ TO-220AB / TO-220AC / ITO-220AB / ITO-220AB-W / ITO-220AC / TO-3P (TO-247) / TO-251/ TO-251AA/ TO-251AB/ TO-251S/ DPAK(TO-252) / DPAK-1 (TO-252-1)/ DPAK-2 (TO-252-2)/ TO-252AA/ TO-252-4L/ TO-262 (I2PAK) / D2PAK(TO-263) / D2PAK-1 (TO-263-1)/ TO-92 (TO-226AA)/ TO-92S/ R-1/ R-3/ R-6/ TO-256/ TO-247AC/ TO-3PN/ TO-277/ TO-277A/ TO-277B /

4. 4GBJ / DB / DBF/ DBS / DF / DFS / GBL / GBJ / GBP / GBPC-W / GBPC-T / GBU / KBL / KBJ/ KBP / KBPC-3 / KBPC-6 / KBPC-8 / KBPC-MT / KBPC-MW / KBPC-PS / KBPC-PT / KBPC-PW / KBU / LDBS / LMBS / LMDS (TBS) / LMDS-1/ MBF / MBLs / MBLs-1/ MBLs-7 / MDB / MDLS / MDS (TO-269AA) / MDS-1 / MDS-6 / MP / MT-35/ QFNB/ RB-15 / RS/ WOB / UDLS/

測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 6 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

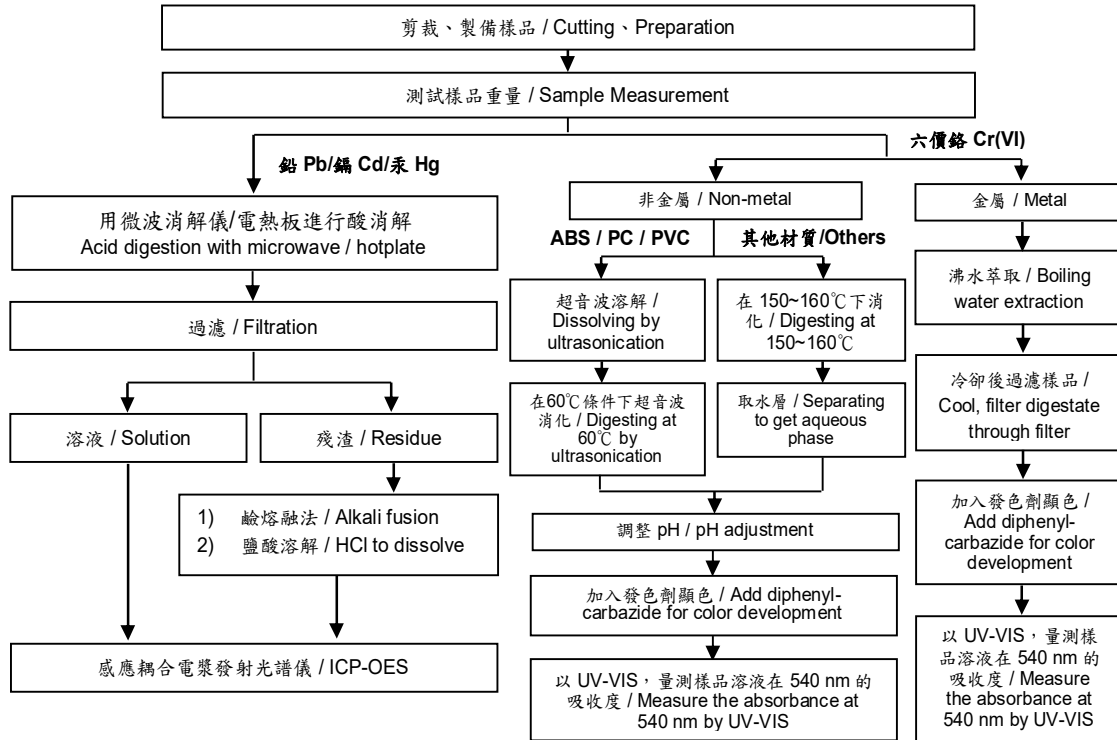
新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

重金屬流程圖 / Analytical flow chart of Heavy Metal

根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外)

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



測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 7 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

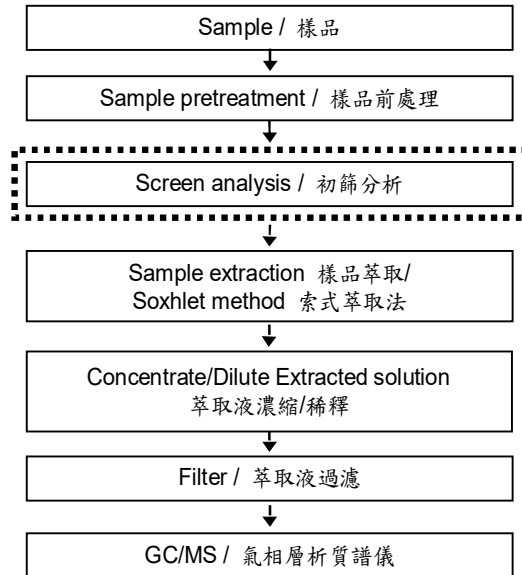
(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

初次測試程序 / First testing process ———→

選擇性篩檢程序 / Optional screen process→

確認程序 / Confirmation process - - - →



測試報告

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 8 of 11

Test Report

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

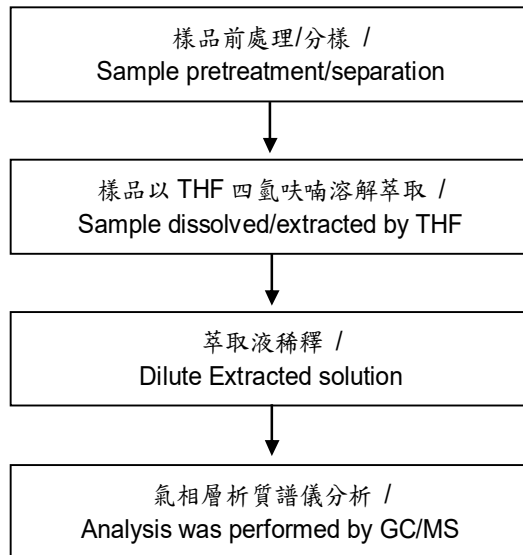
(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



測試報告

Test Report

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 9 of 11

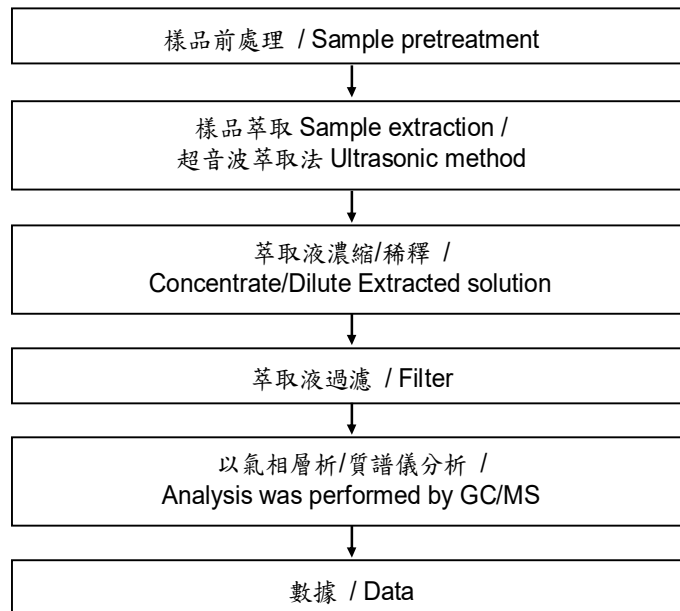
美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://twap.sgs.com/Terms-and-Conditions.html> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://twap.sgs.com/Terms-and-Conditions.html>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

Test Report

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 10 of 11

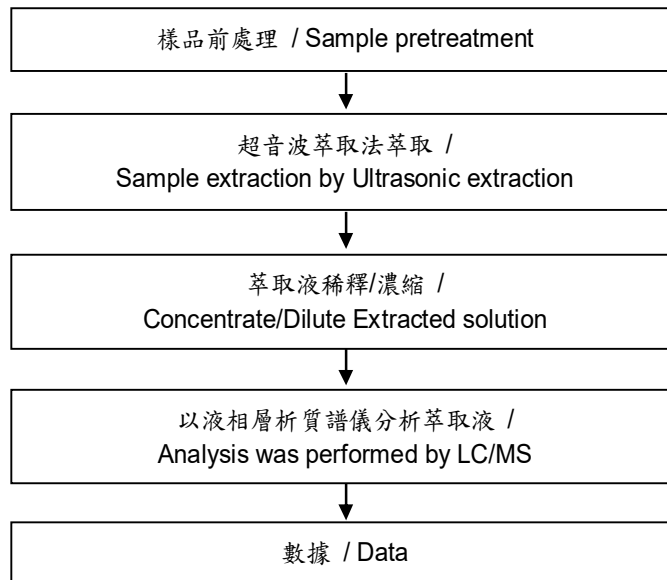
美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS



測試報告

Test Report

號碼(No.) : CE/2020/62382

日期(Date) : 2020/06/19

頁數(Page): 11 of 11

美麗微半導體股份有限公司 / FORMOSA MICROSEMI CO., LTD.

(杭州美麗微電子有限公司 / HANGZHOU FORMOSA MICRO-ELECTRONIC CO., LTD.)

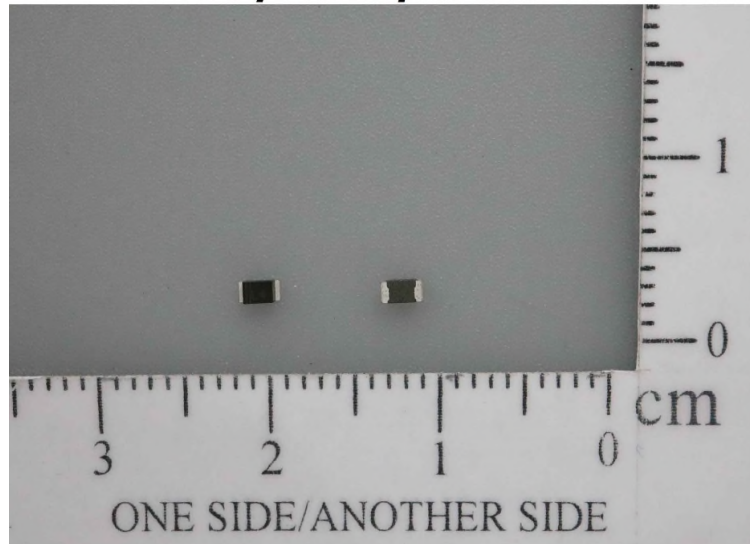
新北市土城區忠承路111號6樓 / 6F., NO. 111. ZHONGCHENG RD., TUCHENG DIST., NEW TAIPEI CITY, TAIWAN

(杭州市濱江區明德路6號1幢3層 / FLOOR 3, BLOCK 1. NO. 6, MINGDE RD., BINJIANG DIST., HANGZHOU, CHINA)

* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2020/62382



** 報告結尾 (End of Report) **