

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 1 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

送樣廠商(Sample Submitted By) : 台灣興勝半導體材料股份有限公司 (SH ELECTRONICS TAIWAN CO., LTD.)
樣品名稱(Sample Description) : LEAD FRAME
樣品型號(Style/Item No.) : C7025
收件日期(Sample Receiving Date) : 2019/07/11
測試期間(Testing Period) : 2019/07/11 to 2019/07/18

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)

: 請見下一頁 (Please refer to next pages).

結論(Conclusion)

:

- (1) 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚，DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。(Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)


報告簽署人/張伯睿/博士/技術經理
Ray Chang, Ph.D./Manager -Tech
Signed for and on behalf of
SGS Taiwan Limited
化學實驗室-高雄/Chemical Laboratory-Kaohsiung



試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 2 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試結果(Test Results)

測試部位(PART NAME) NO.1 : 銅色/銀色金屬片 (COPPER/SILVER COLORED METAL SHEET)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n. d.	100
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5: 2013，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n. d.	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4:2013+AMD1:2017，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4:2013+AMD1:2017 and performed by ICP-AES.	2	n. d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)(#2)	µg/cm ²	參考IEC 62321-7-1:2015，以UV-VIS檢測. / With reference to IEC 62321-7-1:2015 and performed by by UV-VIS.	0.10	n. d.	-
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.	1000
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.	-	

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 3 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) NO. 1	法規 限值 (Limit)
多溴聯苯醚總和 / Sum of PBDEs	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.	1000
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.	-
鹵素 / Halogen					
鹵素（氟） / Halogen-Fluorine (F) (CAS No. : 14762-94-8)	mg/kg	參考BS EN 14582:2016，以離子層析儀檢測. / With reference to BS EN 14582:2016. Analysis was performed by IC.	50	n. d.	-
鹵素（氯） / Halogen-Chlorine (Cl) (CAS No. : 22537-15-1)	mg/kg		50	n. d.	-
鹵素（溴） / Halogen-Bromine (Br) (CAS No. : 10097-32-2)	mg/kg		50	n. d.	-
鹵素（碘） / Halogen-Iodine (I) (CAS No. : 14362-44-8)	mg/kg		50	n. d.	-
全氟辛酸 / PFOA (CAS No. : 335-67-1)	mg/kg	參考CEN/TS 15968 (2010)，以液相層析/串聯質譜儀檢測. / With reference to CEN/TS 15968 (2010). Analysis was performed by LC/MSMS.	0.01	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/串聯質譜儀檢測. / With reference to CEN/TS 15968 (2010). Analysis was performed by LC/MSMS.	0.01	n. d.	-
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	-	Negative	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 4 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO.1	
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	參考IEC 62321-8:2017, 以氣相層析儀/質譜儀檢測。 / With reference to IEC 62321-8:2017. Analysis was performed by GC/MS.	50	n. d.	1000
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n. d.	1000
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n. d.	1000
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n. d.	1000
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg		50	n. d.	-
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0, 68515-48-0)	mg/kg		50	n. d.	-
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0, 68515-49-1)	mg/kg		50	n. d.	-
鄰苯二甲酸二(C7-11支鏈與直鏈)烷基酯 / DHNUP (1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters) (CAS No.: 68515-42-4)	mg/kg		50	n. d.	-
鄰苯二甲酸二庚酯 / DHPP (Diheptyl Phthalate) (CAS No.: 3648-21-3)	mg/kg		50	n. d.	-
鄰苯二甲酸二(C6-8支鏈與直鏈)烷基酯, 富C7 / DIHP (1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich) (CAS No.: 71888-89-6)	mg/kg		50	n. d.	-
鄰苯二甲酸二(2-甲氧基乙基)酯 / DMEP (Bis (2-methoxyethyl) phthalate) (CAS No.: 117-82-8)	mg/kg		50	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 5 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO.1	
鄰苯二甲酸二己酯 / DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	mg/kg	參考IEC 62321-8:2017, 以氣相層析儀/質譜儀檢測. / With reference to IEC	50	n. d.	-
鄰苯二甲酸二正戊酯/ DNPP(Di-n-pentyl phthalate) (CAS No.: 131-18-0)	mg/kg	62321-8:2017. Analysis was performed by GC/MS.	50	n. d.	-
銻 / Antimony (Sb)	mg/kg	參考US EPA 3052: 1996, 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052: 1996. Analysis was performed by ICP-AES.	2	n. d.	-
三氧化二銻 / Antimony trioxide (Sb ₂ O ₃) (CAS No.: 1309-64-4)	mg/kg	由銻結果計算得之. / Calculated from the result of Antimony.	2 (▲)	n. d.	-
多氯聯苯 / Polychlorinated Biphenyls (PCBs)	mg/kg	參考US EPA 3550C: 2007, 以氣相層析質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by GC/MS.	0.5	n. d.	-
多氯奈 / Polychlorinated Naphthalene (PCNs)	mg/kg	參考US EPA 3550C: 2007, 以氣相層析質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by GC/MS.	5	n. d.	-
多氯三聯苯 / Polychlorinated Terphenyls (PCTs)	mg/kg	參考US EPA 3550C: 2007, 以氣相層析質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by GC/MS.	0.5	n. d.	-
短鏈氯化石蠟 / Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.:85535-84-8))	mg/kg	參考US EPA 3550C: 2007, 以氣相層析儀/電子捕獲偵測器檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by GC/ECD.	100	n. d.	-
有機錫 / Organic-tin compounds					
三丁基錫 / Tributyl Tin (TBT)	mg/kg	參考ISO 17353: 2004, 以氣相層析儀/火焰光度偵測器檢測. / With reference to ISO 17353: 2004. Analysis was performed by GC/FPD.	0.03	n. d.	-
三苯基錫 / Triphenyl Tin (TphT)	mg/kg		0.03	n. d.	-
二丁基錫 / Dibutyl Tin (DBT)	mg/kg		0.03	n. d.	-
二辛基錫 / Dioctyl Tin (DOT)	mg/kg		0.03	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 6 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
氧化雙三丁基錫 / Bis(tributyltin)oxide (TBTO) (CAS No. : 56-35-9)	mg/kg	參考ISO 17353: 2004, 以氣相層析儀/火焰 光度偵測器檢測; 由三丁基錫測試結果計算 得之. / With reference to ISO 17353: 2004. Analysis was performed by GC/FPD. Calculated from the result of Tributyl Tin (TBT).	0.03 (▲)	n. d.	-
石綿 / Asbestos					
溫石綿(白石綿) / Chrysotile (CAS No. : 12001-29-5)	%	參考EPA 600/R-93/116 (1993) / 立體顯微 鏡 (SM), 分散染色式偏光顯微鏡 (DS-PLM) 及X光繞射光譜分析法 (XRD) / With reference to EPA 600/R-93/116 (1993). Analysis was performed by Stereo Microscope (SM), Dispersion Staining Polarized Light Microscope (DS-PLM) and X-ray Diffraction Spectrometer (XRD).	-	Negative	-
鐵石綿(褐石綿) / Amosite (CAS No. : 12172-73-5)	%		-	Negative	-
青石綿 / Crocidolite (CAS No. : 12001-28-4)	%		-	Negative	-
斜方角閃石綿 / Anthophyllite (CAS No. : 77536-67-5)	%		-	Negative	-
透閃石綿 / Tremolite (CAS No. : 77536-68-6)	%		-	Negative	-
陽起石綿 / Actinolite (CAS No. : 77536-66-4)	%		-	Negative	-
偶氮 (AZO)					
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No. : 92-67-1)	mg/kg	參考LFGB BVL B 82.02-2, 以氣相層析質譜 儀/高效液相層析儀二極體陣列偵測器檢測. / With reference to LFGB BVL B 82.02- 2. Analysis was performed by GC-MS/LC- DAD.	3	n. d.	-
2): 聯苯胺 / BENZIDINE (CAS No. : 92-87-5)	mg/kg		3	n. d.	-
3): 4-氯鄰甲苯胺 / 4-CHLORO-O- TOLUIDINE (CAS No. : 95-69-2)	mg/kg		3	n. d.	-
4): 2-萘胺 / 2-NAPHTHYLAMINE (CAS No. : 91-59-8)	mg/kg		3	n. d.	-
5): 鄰氨基二甲基偶氮 / O- AMINOAZOTOLUENE (CAS No. : 97-56-3)	mg/kg		3	n. d.	-
6): 對硝基鄰甲苯胺 / 2-AMINO-4- NITROTOLUENE (CAS No. : 99-55-8)	mg/kg		3	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 7 of 36

Test Report

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO.1	
7): 對氯苯胺 / P-CHLOROANILINE (CAS No. : 106-47-8)	mg/kg	參考LFGB BVL B 82.02-2, 以氣相層析質譜儀/高效液相層析儀二極體陣列偵測器檢測。 / With reference to LFGB BVL B 82.02-2. Analysis was performed by GC-MS/LC-DAD.	3	n. d.	-
8): 4-甲氧基-間苯二胺 / 2,4-DIAMINOANISOLE (CAS No. : 615-05-4)	mg/kg		3	n. d.	-
9): 4,4'-二氨基二苯甲烷 / 4,4'-DIAMINODIPHENYLMETHANE (CAS No. : 101-77-9)	mg/kg		3	n. d.	-
10): 3,3'-二氯聯苯胺 / 3,3'-DICHLOROBENZIDINE (CAS No. : 91-94-1)	mg/kg		3	n. d.	-
11): 3,3'-二甲氧基聯苯胺 / 3,3'-DIMETHOXYBENZIDINE (CAS No. : 119-90-4)	mg/kg		3	n. d.	-
12): 3,3'-二甲基聯苯胺 / 3,3'-DIMETHYLBENZIDINE (CAS No. : 119-93-7)	mg/kg		3	n. d.	-
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No. : 838-88-0)	mg/kg		3	n. d.	-
14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No. : 120-71-8)	mg/kg		3	n. d.	-
15): 4,4'-亞甲基雙(氯苯胺) / 4,4'-METHYLENE-BIS-(2-CHLOROANILINE) (CAS No. : 101-14-4)	mg/kg		3	n. d.	-
16): 4,4'-氧化雙苯胺 / 4,4'-OXYDIANILINE (CAS No. : 101-80-4)	mg/kg		3	n. d.	-
17): 4,4'-硫代雙苯胺 / 4,4'-THIODIANILINE (CAS No. : 139-65-1)	mg/kg		3	n. d.	-
18): 鄰甲苯胺 / O-TOLUIDINE (CAS No. : 95-53-4)	mg/kg		3	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 8 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO.1	
19): 2,4-二氨基甲苯 / 2,4-TOLUYLENEDIAMINE (CAS No. : 95-80-7)	mg/kg	參考LFGB BVL B 82.02-2, 以氣相層析質譜儀/高效液相層析儀二極體陣列偵測器檢測. / With reference to LFGB BVL B 82.02-2. Analysis was performed by GC-MS/LC-DAD.	3	n. d.	-
20): 2,4,5-三甲基苯胺 / 2,4,5-TRIMETHYLANILINE (CAS No. : 137-17-7)	mg/kg		3	n. d.	-
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No. : 90-04-0)	mg/kg		3	n. d.	-
22): 對氨基偶氮苯 / P-AMINOAZOBENZENE (CAS No. : 60-09-3)	mg/kg		3	n. d.	-
23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No. : 95-68-1)	mg/kg		3	n. d.	-
24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No. : 87-62-7)	mg/kg		3	n. d.	-
鉍 / Beryllium (Be)	mg/kg	參考US EPA 3052: 1996, 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052: 1996. Analysis was performed by ICP-AES.	2	n. d.	-
氧化鉍 / Beryllium oxide (BeO)	mg/kg	由鉍結果計算得之. / Calculated from the result of Beryllium.	2 (▲)	n. d.	-
氟氯碳化物 / CFCs (Chlorofluorocarbons)					
Group I					
氟氯碳化物(Chlorofluorocarbon)-11 (CAS No. : 75-69-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-12 (CAS No. : 75-71-8)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-113 (CAS No. : 76-13-1)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-114 (CAS No. : 76-14-2)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-115 (CAS No. : 76-15-3)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 9 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) NO. 1	法規 限值 (Limit)
Group III					
氟氯碳化物(Chlorofluorocarbon)-13 (CAS No. : 75-72-9)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-111 (CAS No. : 354-56-3)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-112 (CAS No. : 76-12-0)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-211 (CAS No. : 422-78-6)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-212 (CAS No. : 3182-26-1)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-213 (CAS No. : 2354-06-5)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-214 (CAS No. : 29255-31-0)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-215 (CAS No. : 4259-43-2)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-216 (CAS No. : 661-97-2)	mg/kg		1	n. d.	-
氟氯碳化物(Chlorofluorocarbon)-217 (CAS No. : 422-86-6)	mg/kg		1	n. d.	-
海龍 (Halons)					
海龍(Halon)-1211 (CAS No. : 353-59-3)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
海龍(Halon)-1301 (CAS No. : 75-63-8)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
海龍(Halon)-2402 (CAS No. : 124-73-2)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 10 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
氟氯氫碳化合物 / HCFCs (Hydrochlorofluorocarbons)					
氟氯氫碳化合物(HCFC)-21 (CAS No. : 75-43-4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化合物(HCFC)-22 (CAS No. : 75-45-6)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-31 (CAS No. : 593-70-4)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-121 (CAS No. : 354-14-3)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-122 (CAS No. : 354-21-2)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-123 (CAS No. : 306-83-2)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-124 (CAS No. : 2837-89-0)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-131 (CAS No. : 359-28-4)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-132b (CAS No. : 1649-08-7)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-133a (CAS No. : 75-88-7)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-141b (CAS No. : 1717-00-6)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-142b (CAS No. : 75-68-3)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-221 (CAS No. : 422-26-4)	mg/kg		1	n. d.	-
氟氯氫碳化合物(HCFC)-222 (CAS No. : 422-49-1)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 11 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
氟氯氫碳化物(HCFC)-223 (CAS No. : 422-52-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化物(HCFC)-224 (CAS No. : 422-54-8)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-225ca (CAS No. : 422-56-0)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-225cb (CAS No. : 507-55-1)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-226 (CAS No. : 431-87-8)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-231 (CAS No. : 421-94-3)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-232 (CAS No. : 460-89-9)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-233 (CAS No. : 7125-84-0)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-234 (CAS No. : 425-94-5)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-235 (CAS No. : 460-92-4)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-241(CAS No. : 666-27-3)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-242 (CAS No. : 460-63-9)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-243 (CAS No. : 460-69-5)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-244	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-251 (CAS No. : 421-41-0)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 12 of 36

Test Report

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
氟氯氫碳化物(HCFC)-252 (CAS No. : 819-00-1)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氟氯氫碳化物(HCFC)-253 (CAS No. : 460-35-5)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-261 (CAS No. : 420-97-3)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-262 (CAS No. : 421-02-03)	mg/kg		1	n. d.	-
氟氯氫碳化物(HCFC)-271 (CAS No. : 430-55-7)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物 / HBFCs (Hydrobromofluorocarbons)					
不完全鹵化氟溴化物(HBFC)-21B2 (CHFBr2) (CAS No. : 1868-53-7)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
不完全鹵化氟溴化物(HBFC)-22B1 (CHF2Br) (CAS No. : 1511-62-2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-31B1 (CH2FBr) (CAS No. : 373-52-4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-121B4 (C2HFBr4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-122B3 (C2HF2Br3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-123B2 (C2HF3Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-124B1 (C2HF4Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-131B3 (C2H2FBr3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-132B2 (C2H2F2Br2)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 13 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
不完全鹵化氟溴化物(HBFC)-133B1 (C2H2F3Br)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
不完全鹵化氟溴化物(HBFC)-141B2 (C2H3FBr2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-142B1 (C2H3F2Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-151B1 (C2H4FBr)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-221B6 (C3HFBr6)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-222B5 (C3HF2Br5)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-223B4 (C3HF3Br4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-224B3 (C3HF4Br3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-225B2 (C3HF5Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-226B1 (C3HF6Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-231B5 (C3H2FBr5)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-232B4 (C3H2F2Br4)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-233B3 (C3H2F3Br3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-234B2 (C3H2F4Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-235B1 (C3H2F5Br)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 14 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
不完全鹵化氟溴化物(HBFC)-241B4 (C3H3FBr4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
不完全鹵化氟溴化物(HBFC)-242B3 (C3H3F2Br3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-243B2 (C3H3F3Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-244B1 (C3H3F4Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-251B3 (C3H4FBr3)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-252B2 (C3H4F2Br2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-253B1 (C3H4F3Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-261B2 (C3H5FBr2)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-262B1 (C3H5F2Br)	mg/kg		1	n. d.	-
不完全鹵化氟溴化物(HBFC)-271B1 (C3H6FBr)	mg/kg		1	n. d.	-
氫氟碳化物 / HFCs (Hydrofluorocarbon)					
氫氟碳化物(HFC)-23 (CHF3)(CAS No. : 75-46-7)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氫氟碳化物(HFC)-32 (CH2F2)(CAS No. : 75-10-5)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-41 (CH3F)(CAS No. : 593-53-3)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-43-10mee (C5H2F10)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-125 (C2HF5)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 15 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
氫氟碳化物(HFC)-134 (C2H2F4)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
氫氟碳化物(HFC)-134a (CH2FCF3)(CAS No. : 811-97-2)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-143 (CH3F3)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-143a (CH3F3)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-152a (C2H4F2)(CAS No. : 75-37-6)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-227ea (C3HF7)(CAS No. : 431-89-0)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-236ea (C3H2F6)(CAS No. : 431-63-0)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-236fa (C3H2F6)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-245ca (C3H3F5)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-245fa (C3H3F5)	mg/kg		1	n. d.	-
氫氟碳化物(HFC)-365mfc (C4H5F5)	mg/kg		1	n. d.	-
全氟碳化物 / PFCs (Perfluorocarbon)					
四氟甲烷 / F14 (CAS No. : 75-73-0)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測。 / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
六氟乙烷 / Fluorocarbon 116 (CAS No. : 76-16-4)	mg/kg		1	n. d.	-
八氟丙烷 / Freon 218 (CAS No. : 76-19-7)	mg/kg		1	n. d.	-
十氟丁烷 / Decafluorobutane (CAS No. : 355-25-9)	mg/kg		1	n. d.	-
八氟環丁烷 / Freon C318 (CAS No. : 115-25-3)	mg/kg		1	n. d.	-
全氟-1-丁烯 / Perfluor-1-butene (CAS No. : 357-26-6)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 16 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
全氟異丁烯 / perfluorisobutene (CAS No. : 382-21-8)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1,4-二氫八氟丁烷 / 1,4-dihydrooctafluorobutane (CAS No. : 377-36-6)	mg/kg		1	n. d.	-
2-全氟甲基丁烷 / nonafluor-2-(trifluoromethyl)butane (CAS No. : 594-91-2)	mg/kg		1	n. d.	-
全氟戊烷 / perfluoro-n-pentane (CAS No. : 678-26-2)	mg/kg		1	n. d.	-
2-全氟甲基戊烷 / 2-perfluoromethylpentane (CAS No. : 355-04-4)	mg/kg		1	n. d.	-
全氟己烷 / perfluorohexane (CAS No. : 355-42-0)	mg/kg		1	n. d.	-
氯化碳氫化物 / CHCs (Chlorinate hydrocarbon)					
1,1,1,2-四氯乙烷 / 1,1,1,2-Tetrachloroethane (CAS No. : 630-20-6)	mg/kg	參考US EPA 5021A (2014)，以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1,1,1-三氯乙烷 / 1,1,1-Trichloroethane (CAS No. : 71-55-6)	mg/kg		1	n. d.	-
1,1,2,2-四氯乙烷 / 1,1,2,2-Tetrachloroethane (CAS No. : 79-34-5)	mg/kg		1	n. d.	-
1,1,2-三氯乙烷 / 1,1,2-Trichloroethane (CAS No. : 79-00-5)	mg/kg		1	n. d.	-
1,1-二氯乙烷 / 1,1-Dichloroethane (CAS No. : 75-34-3)	mg/kg		1	n. d.	-
1,1-二氯乙烯 / 1,1-Dichloroethene (CAS No. : 75-35-4)	mg/kg		1	n. d.	-
1,1-二氯丙烯 / 1,1-Dichloropropene (CAS No. : 563-58-6)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 17 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO. 1	
1, 2, 3-三氯丙烷 / 1, 2, 3-Trichloropropane (CAS No. : 96-18-4)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
1, 2-二氯乙烷 / 1, 2-Dichloroethane (CAS No. : 107-06-2)	mg/kg		1	n. d.	-
1, 2-二氯丙烷 / 1, 2-Dichloropropane (CAS No. : 78-87-5)	mg/kg		1	n. d.	-
1, 3-二氯丙烷 / 1, 3-Dichloropropane (CAS No. : 142-28-9)	mg/kg		1	n. d.	-
2, 2-二氯丙烷 / 2, 2-Dichloropropane (CAS No. : 594-20-7)	mg/kg		1	n. d.	-
四氯甲烷(四氯化碳) / Carbon tetrachloride (CAS No. : 56-23-5)	mg/kg		1	n. d.	-
氯乙烷 / Chloroethane (CAS No. : 75-00-3)	mg/kg		1	n. d.	-
氯仿 / Chloroform (CAS No. : 67-66-3)	mg/kg		1	n. d.	-
氯甲烷 / Chloromethane (CAS No. : 74-87-3)	mg/kg		1	n. d.	-
順-1, 2-二氯乙烯 / cis-1, 2-Dichloroethene (CAS No. : 156-59-2)	mg/kg		1	n. d.	-
順-1, 3-二氯丙烯 / cis-1, 3-Dichloropropene (CAS No. : 10061-01-5)	mg/kg		1	n. d.	-
六氯丁二烯 / Hexachlorobutadiene (CAS No. : 87-68-3)	mg/kg		1	n. d.	-
二氯甲烷 / Dichloromethane (CAS No. : 75-09-2)	mg/kg		1	n. d.	-
四氯乙烯 / Tetrachloroethene (CAS No. : 127-18-4)	mg/kg		1	n. d.	-
反-1, 2-二氯乙烯 / trans-1, 2-Dichloroethene (CAS No. : 156-60-5)	mg/kg		1	n. d.	-
反-1, 3-二氯丙烯 / trans-1, 3-Dichloropropene (CAS No. : 10061-02-6)	mg/kg		1	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 18 of 36

台灣興勝半導體材料股份有限公司
SH ELECTRONICS TAIWAN CO., LTD.
高雄市楠梓加工區東七街16號
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO.1	
三氯乙烯 / Trichloroethylene (CAS No.: 79-01-6)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
溴甲烷 / Bromomethane (CAS No.: 74-83-9)	mg/kg	參考US EPA 5021A (2014), 以氣相層析質譜儀檢測. / With reference to US EPA 5021A (2014). Analysis was performed by GC/MS.	1	n. d.	-
2-(3', 5'-二叔丁基-2'-羟基苯基)苯並三氮唑 / 2-(3,5-di-tert-butyl-2-hydroxyphenyl)-2H-benzotriazole (CAS No.: 3846-71-7)	mg/kg	參考US EPA 3550C: 2007, 以氣相層析質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by GC/MS.	5	n. d.	-
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	參考RSTS-E&E-121, 以液相層析/質譜儀檢測. / With reference to RSTS-E&E-121. Analysis was performed by LC/MS.	10	n. d.	-
富馬酸二甲酯 / Dimethyl Fumarate (CAS No.: 624-49-7)	mg/kg	參考US EPA 3550C: 2007, 以氣相層析質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by GC/MS.	0.1	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.	-
福馬林 (甲醛) / Formaldehyde (CAS No.: 50-00-0)	mg/kg	參考ISO 17226-1, 以高效液相層析儀/二極體陣列偵測器檢測. / With reference to ISO 17226-1. Analysis was performed by HPLC/DAD.	3	n. d.	-
砷 / Arsenic (As)	mg/kg	參考US EPA 3052: 1996, 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052: 1996. Analysis was performed by ICP-AES.	2	n. d.	-

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 19 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				NO.1	
磷 / Phosphorus (P)	mg/kg	參考US EPA 3052: 1996, 以感應耦合電漿原子發射光譜儀檢測。 / With reference to US EPA 3052: 1996. Analysis was performed by ICP-AES.	2	n.d.	-
紅磷 / Red phosphorus	**	以熱裂解-氣相層析/質譜儀檢測。 / Analysis was performed by Pyrolyzer-GC/MS.	-	Negative	-

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. (#2) =
 - a. 當六價鉻結果大於0.13 $\mu\text{g}/\text{cm}^2$, 表示樣品表層含有六價鉻。 / The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 $\mu\text{g}/\text{cm}^2$. The sample coating is considered to contain Cr(VI).
 - b. 當六價鉻結果為n.d. (濃度小於0.10 $\mu\text{g}/\text{cm}^2$), 表示表層不含六價鉻。 / The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 $\mu\text{g}/\text{cm}^2$). The coating is considered a non-Cr(VI) based coating
 - c. 當六價鉻結果介於 0.10 及 0.13 $\mu\text{g}/\text{cm}^2$ 時, 無法確定塗層是否含有六價鉻。 / 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.
6. **= Qualitative analysis (No Unit) 定性分析(無單位)
7. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
8. 石綿定性分析試驗範圍: <0.1%~100%, 石綿鑑定的判定基準是以檢出含有石綿纖維為『Positive』, 未檢出石綿纖維為『Negative』。 / Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 20 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

9. (▲) : MDL是針對元素/測試化合物之評估. / The MDL was evaluated for element / tested substance.

換算公式 (Conversion Formula) : $AX = A \times F$

AX	A	F
氧化鉍 / Beryllium oxide (BeO)	鉍 / Beryllium	2.7753
三氧化二銻 / Antimony trioxide (Sb ₂ O ₃)	銻 / Antimony	1.1971
氧化雙三丁基錫 / Bis(tributyltin)oxide (TBTO)	三丁基錫 / Tributyl Tin (TBT)	1.0276

PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 2019/1021

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1µg/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m².)

全氟辛烷磺酸指全氟辛烷磺酸和它的衍生物包括全氟辛烷磺酸, 全氟辛基磺醯胺, N-甲基全氟辛烷磺醯胺, N-乙基全氟辛烷磺醯胺, N-甲基全氟辛基磺醯基氨基乙醇, N-乙基全氟辛基磺醯基氨基乙醇。(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.)

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 21 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

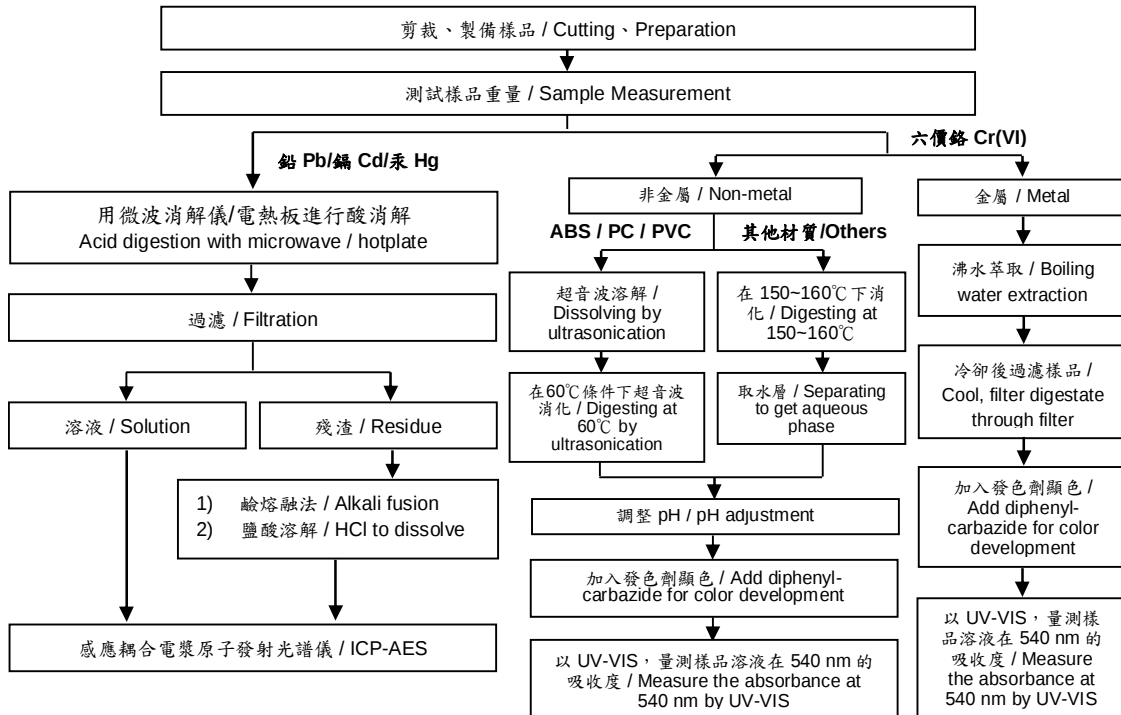
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

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)

- 測試人員：劉俊宏 / Technician : Jony Liu
- 測試負責人：張伯睿 / Supervisor: Ray Chang



試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 22 of 36

台灣興勝半導體材料股份有限公司

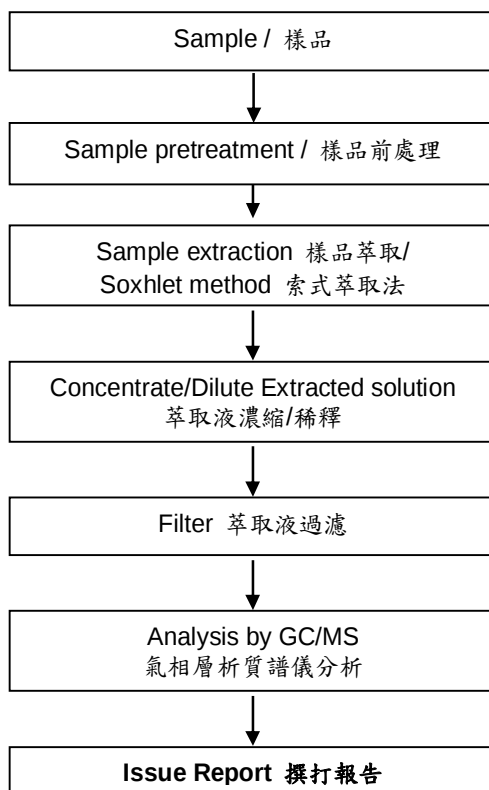
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員：陳威錚 / Technician : Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 23 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

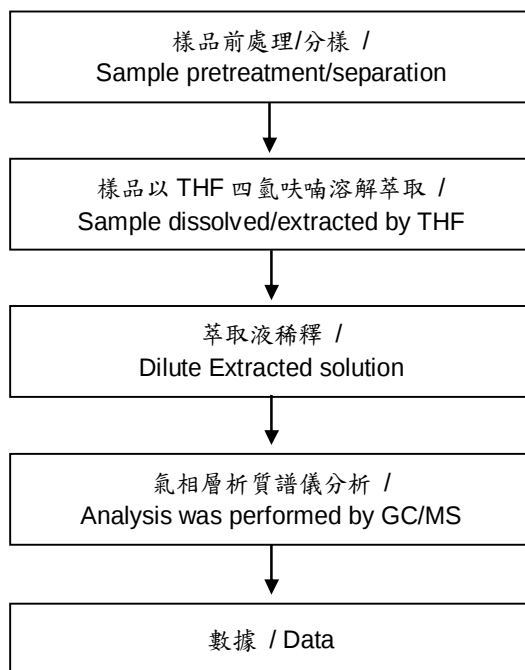
高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員：陳威錚 / Technician : Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang

【測試方法/Test method: IEC 62321-8】



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 24 of 36

台灣興勝半導體材料股份有限公司

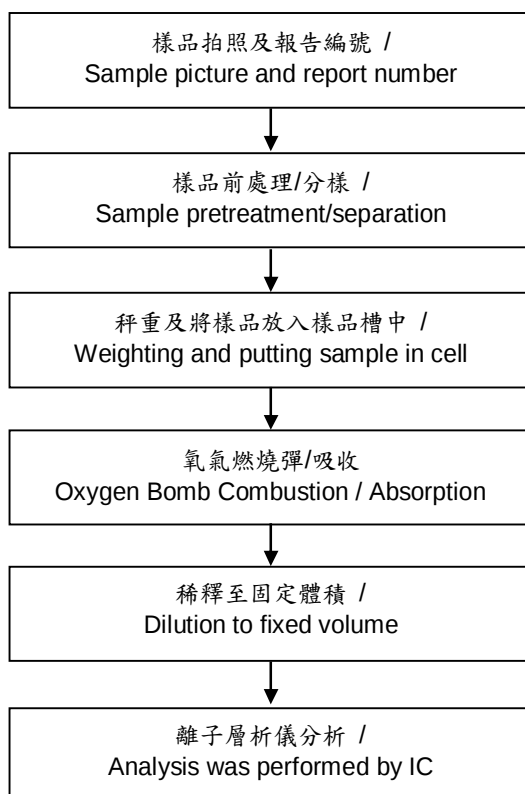
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員：洪秀真 / Technician : Jean Hung
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 25 of 36

台灣興勝半導體材料股份有限公司

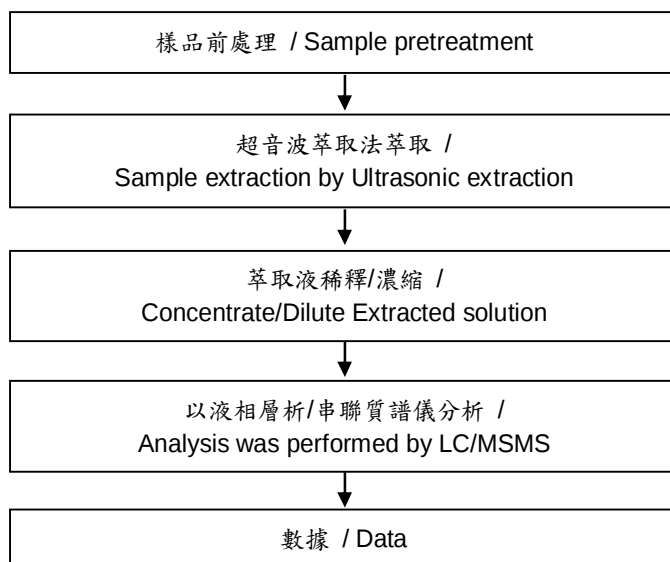
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

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

- 測試人員：黃璟璵 / Technician: Ginny Huang
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 26 of 36

台灣興勝半導體材料股份有限公司

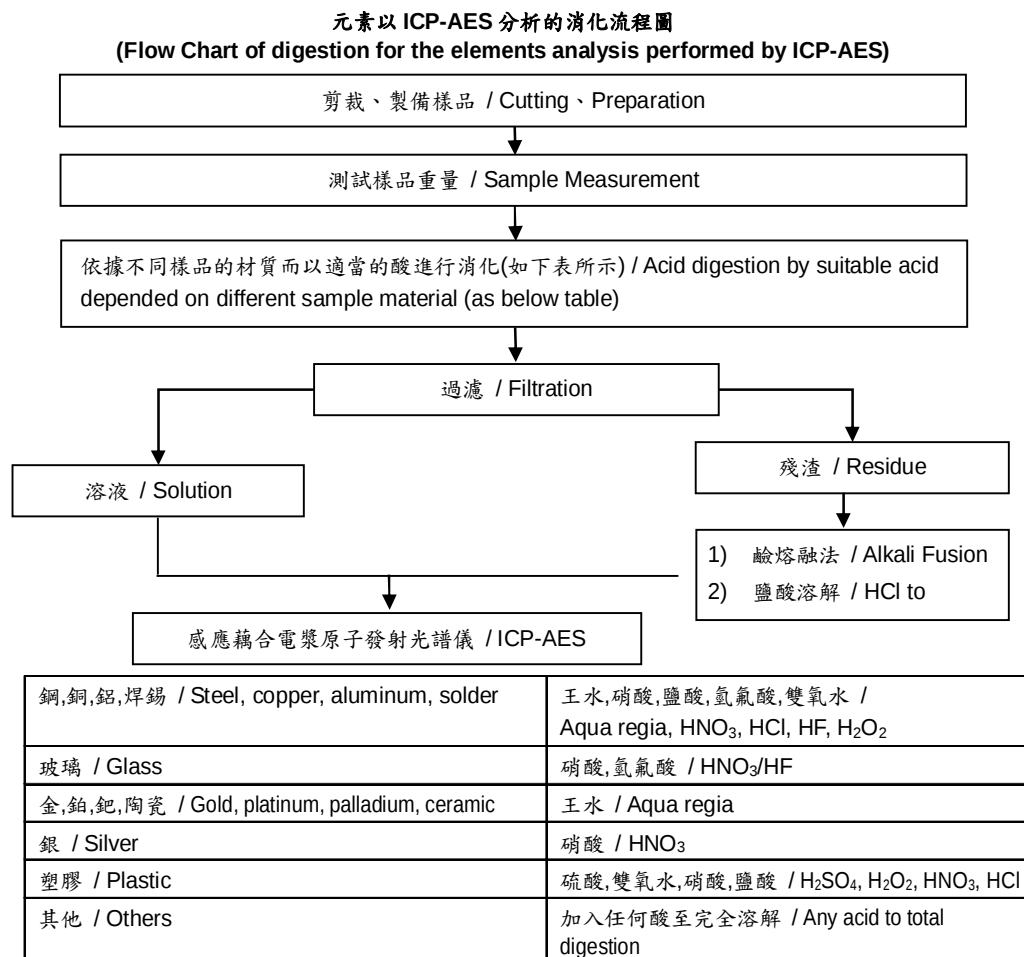
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

- 測試人員：劉俊宏 / Technician : Jony Liu
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 27 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

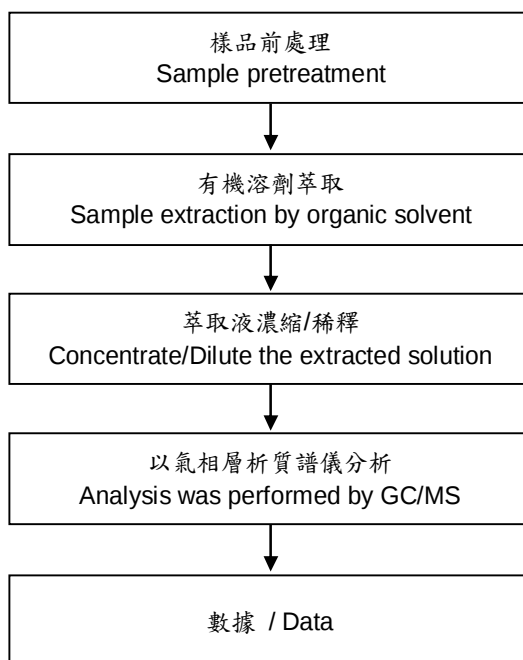
NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

含氯阻燃劑分析流程 / Chlorinated Flame retardant analytical flow chart

- 測試人員：陳威錚 / Technician : Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang

【參考方法(Reference method): US EPA 3550C】

【測試項目:多氯聯苯、多氯奈、多氯三聯苯 / Test Items: PCBs, PCNs, PCTs】



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 28 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

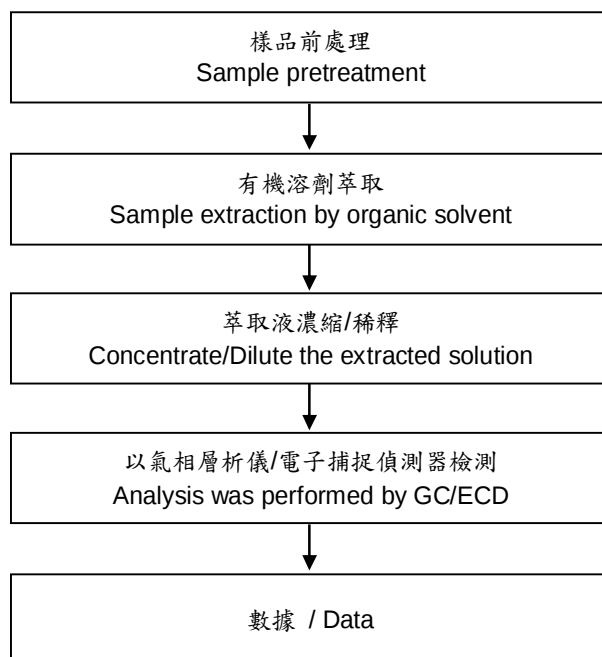
高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

氯化石蠟分析流程圖 / Analytical flow chart - Chlorinated Paraffins

- 測試人員：陳威錚 / Technician : Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang

【參考方法(Reference method): US EPA 3550C】



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 29 of 36

台灣興勝半導體材料股份有限公司

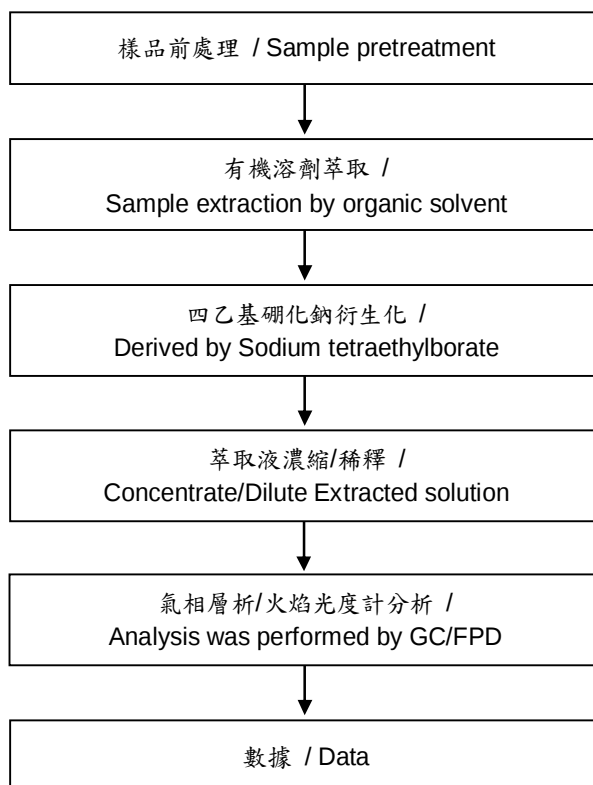
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

有機錫分析流程圖 / Analytical flow chart of Organic-Tin content

- 測試人員：陳威錚 / Technician : Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 30 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

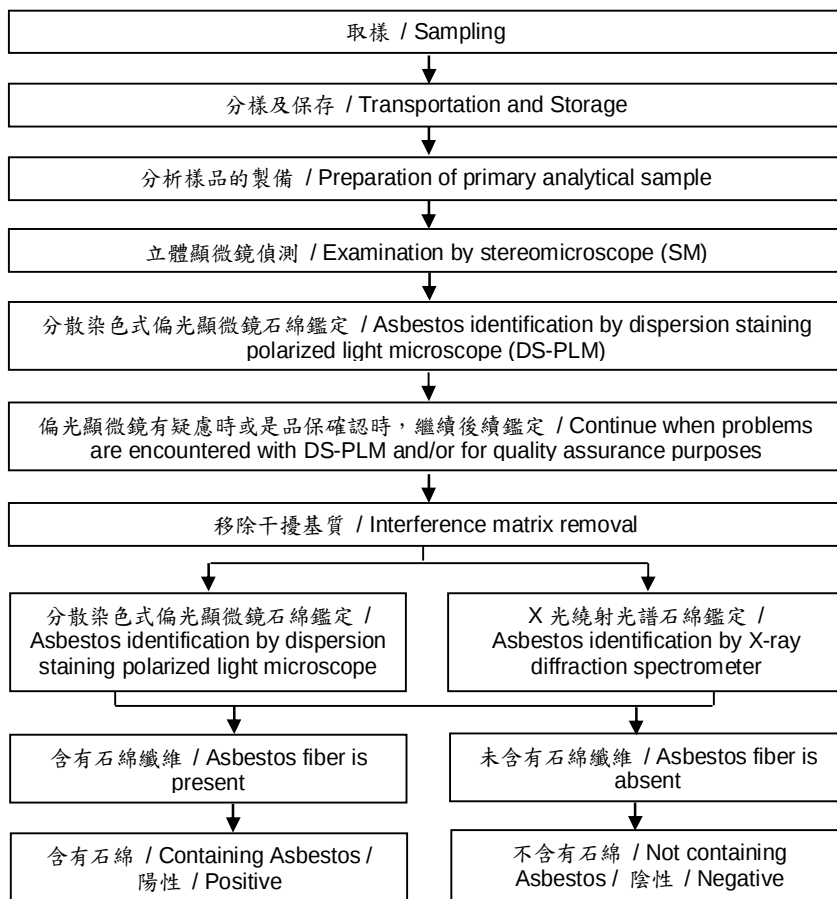
高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

石綿鑑定分析流程圖 / Analysis flow chart for determination of Asbestos

- 測試人員：高鍵忠 / Technician: Victor Kao
- 測試負責人：魏明芬 / Supervisor: Wendy Wei

【參考方法(Reference method): EPA 600/R-93/116】



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 31 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

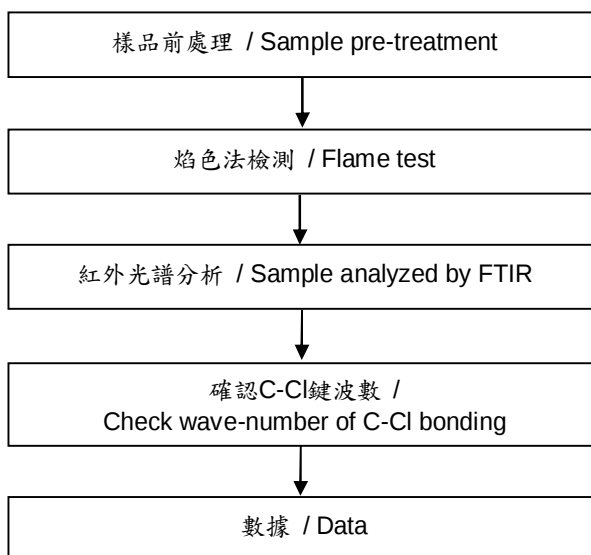
高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

聚氯烯物質判定分析流程圖 /

Analysis flow chart for determination of PVC in material

- 測試人員：戴秀純 / Technician : Hannah Tai
- 測試負責人：林立翔 / Supervisor: Roger Lin



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 32 of 36

台灣興勝半導體材料股份有限公司

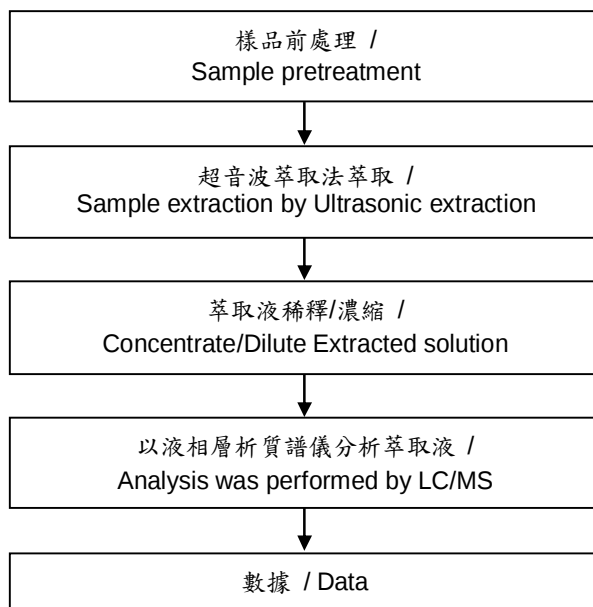
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

四溴雙酚-A分析流程圖 / TBBP-A analytical flow chart

- 測試人員：黃璟瓊 / Technician: Ginny Huang
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 33 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

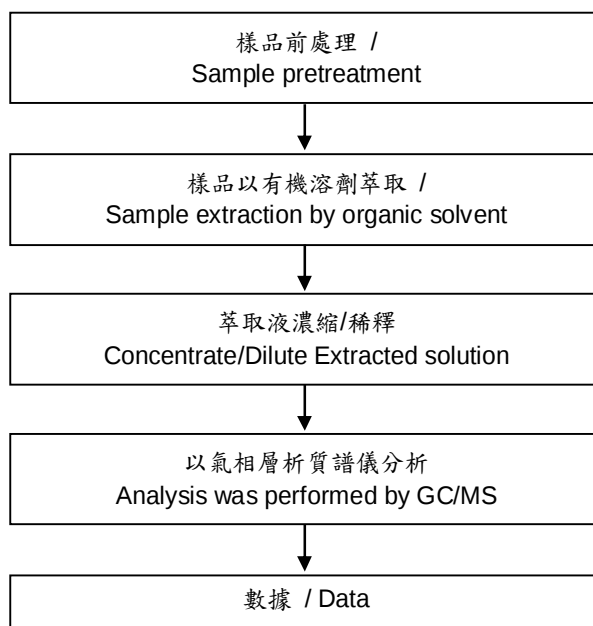
高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

富馬酸二甲酯分析流程圖 /

Analytical flow chart of Dimethyl Fumarate content

- 測試人員：陳威錚 / Technician: Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 34 of 36

台灣興勝半導體材料股份有限公司

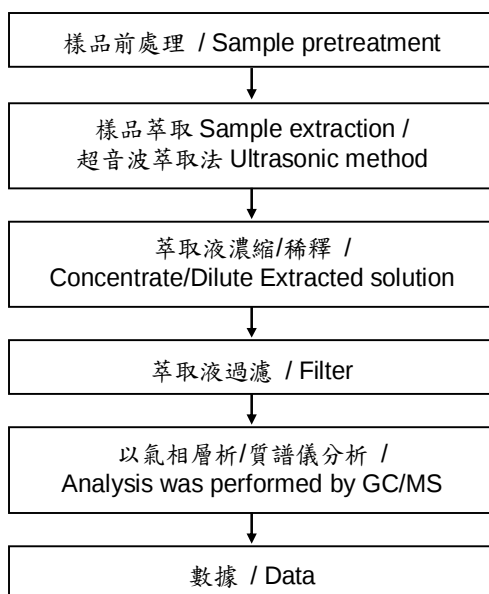
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

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

- 測試人員：陳威錚 / Technician : Dorothy Chen
- 測試負責人：張伯睿 / Supervisor: Ray Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 35 of 36

台灣興勝半導體材料股份有限公司

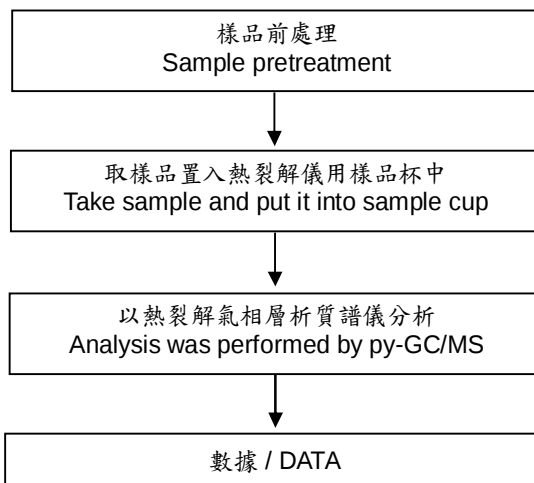
SH ELECTRONICS TAIWAN CO., LTD.

高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

紅磷分析流程 / Analytical flow chart of Red phosphorus

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.

試驗報告

Test Report

號碼(No.) : KA/2019/70970 日期(Date) : 2019/07/18

頁數(Page): 36 of 36

台灣興勝半導體材料股份有限公司

SH ELECTRONICS TAIWAN CO., LTD.

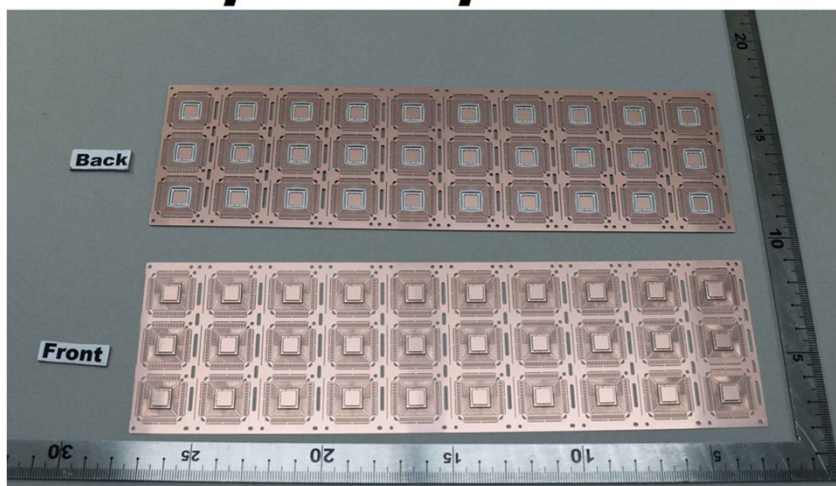
高雄市楠梓加工區東七街16號

NO. 16, EAST 7TH ST., N.E.P.Z KAOHSIUNG, TAIWAN, R.O.C.

* 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.)

KA/2019/70970



** 報告結尾(End of Report) **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. 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.