

Test Report

號碼(No.): EKR25800939 日期(Date): 17-Sep-2025

頁數(Page): 1 of 18

台灣麥德美股份有限公司 (MACDERMID PERFORMANCE SOLUTIONS TAIWAN LTD.)

新竹縣湖口鄉光復址路77號 (77 KUANG FU N. RD, HSIN-CHU ENLARGED INDUSTRIAL PARK, HSIN-CHU TAIWAN)

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 the applicant as):

送樣廠商(Sample Submitted By) : 阿爾發金屬化工股份有限公司 (ALPHA ASSEMBLY SOLUTIONS (TAIWAN)

LIMITED)

樣品名稱(Sample Name) : MICROFAB CU MSA 100 MU, MICROFAB CU MSA 100 R, MICROFAB CU MSA

200 MU, MICROFAB CU MSA 200 R, MICROFAB NF ACID, MICROFAB SC

COPPER SULFATE

收件日(Sample Receiving Date) : 21-Aug-2025

測試期間(Testing Period) : 21-Aug-2025 to 17-Sep-2025

測試需求(Test Requested) : 依據客戶要求進行測試,測試項目請參閱測試結果表格。 (Testing item(s) is/are

specified by client. Please refer to result table for testing item(s).)

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

報告簽署人/張伯睿 博士/部 坚理**SGS**Ray Chang, Ph.D./ Department Manager
Signed for and on behali SGS TAIWAN LTD.

化學實驗室-高雄/Chemical Laboratory-Kaohsiung

CHECK REPORT TO

PIN CODE: 60264473



Test Report

號碼(No.): EKR25800939 日期(Date): 17-Sep-2025 頁數(Page): 2 of 18

台灣麥德美股份有限公司 (MACDERMID PERFORMANCE SOLUTIONS TAIWAN LTD.) 新竹縣湖口鄉光復北路77號 (77 KUANG FU N. RD, HSIN-CHU ENLARGED INDUSTRIAL PARK, HSIN-CHU TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 藍色液體(客戶自行調配之樣品) (BLUE LIQUID (SAMPLE IS BLENDED BY CLIENT))

測試結果 (Test Results)

測試項目	測試方法	單位	MDL	結果
(Test Items)	(Method)	(Unit)		(Result)
A= (0 b) (0 b)				No.1
鎘 (Cd) (Cadmium (Cd))	參考IEC 62321-5: 2013 · 以感應耦合電漿發	mg/kg	2	n.d.
	射光譜儀分析。(With reference to IEC			
	62321-5: 2013, analysis was performed by			
	ICP-OES.)			
鉛 (Pb) (Lead (Pb))	參考IEC 62321-5: 2013 · 以感應耦合電漿發	mg/kg	2	n.d.
	射光譜儀分析。(With reference to IEC			
	62321-5: 2013, analysis was performed by			
	ICP-OES.)			
汞 (Hg) (Mercury (Hg))	參考IEC 62321-4: 2013+ AMD1: 2017 · 以	mg/kg	2	n.d.
	感應耦合電漿發射光譜儀分析。(With			
	reference to IEC 62321-4: 2013+ AMD1:			
	2017, analysis was performed by ICP-OES.)			
六價鉻 Cr(VI) (Hexavalent Chromium	參考IEC 62321-7-2: 2017·以紫外光-可見光	mg/kg	8	n.d.
Cr(VI))	分光光度計分析。(With reference to IEC			
	62321-7-2: 2017, analysis was performed			
	by UV-VIS.)			
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)	參考IEC 62321-6: 2015,以氣相層析儀/質譜	mg/kg	5	n.d.
六溴聯苯 (Hexabromobiphenyl)	儀分析。(With reference to IEC 62321-6:	mg/kg	5	n.d.
七溴聯苯 (Heptabromobiphenyl)	2015, analysis was performed by GC/MS.)	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.
多溴聯苯總和 (Sum of PBBs)		mg/kg	=	n.d.



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台灣麥德美股份有限公司 (MACDERMID PERFORMANCE SOLUTIONS TAIWAN LTD.) 新竹縣湖口鄉光復北路77號 (77 KUANG FU N. RD, HSIN-CHU ENLARGED INDUSTRIAL PARK, HSIN-CHU TAIWAN)

郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl 参考IEC 62321-8: 2017 以氣相層析儀/質譜 mg/kg 50 n.d. phthalate (DNOP)) (CAS No.: 117-84-0) 儀分析。(With reference to IEC 62321-8:	測試項目	測試方法	單位	MDL	結果
演験苯醚 (Monobromodiphenyl ether)	(Test Items)	(Method)	(Unit)		(Result)
演聯苯醚 (Dibromodiphenyl ether)					No.1
三溴聯苯醚 (Tribromodiphenyl ether) 四溴联苯醚 (Tetrabromodiphenyl ether) 五溴聯苯醚 (Hentabromodiphenyl ether) 七溴聯苯醚 (Heptabromodiphenyl ether) 八溴聯苯醚 (Octabromodiphenyl ether) 八溴聯苯醚 (Octabromodiphenyl ether) 八溴聯苯醚 (Nonabromodiphenyl ether) 八溴聯苯醚 (Octabromodiphenyl ether) 八溴聯苯醚 (Octabromodiphenyl ether) 八溴聯苯醚 (Nonabromodiphenyl ether) ハ溴聯苯醚 (Sum of PBDEs) 郑苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP)) 郑苯二甲酸二异酯 (DBP) (Dibutyl 静居) 卷考IEC 62321-8: 2017 · 以氣相層析儀/質譜 偏分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) 郑苯二甲酸二异酯 (DIBP) (Diisobutyl phthalate (DIBP)) 郑苯二甲酸二复丁酯 (DBP) (Diisobutyl phthalate (DIBP)) 郑苯二甲酸二溴三酯 (DIPP) (Diisobutyl phthalate (DIPP)) 第苯二甲酸二溴三酯 (DIPP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 邓苯二甲酸二异氧酯 (DIDP) (Diisononyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 邓苯二甲酸 正平酯 (DNOP) (CAS No.: 2170-cytyl phthalate (DNOP)) (CAS No.: 117-84-0)	一溴聯苯醚 (Monobromodiphenyl ether)		mg/kg	5	n.d.
四漢縣苯醚 (Tetrabromodiphenyl ether)	二溴聯苯醚 (Dibromodiphenyl ether)		mg/kg	5	n.d.
多考IEC 62321-6: 2015・以氣相層析儀/質譜	三溴聯苯醚 (Tribromodiphenyl ether)		mg/kg	5	n.d.
(大)	四溴聯苯醚 (Tetrabromodiphenyl ether)		mg/kg	5	n.d.
大溴聯苯醚 (Heptabromodiphenyl ether)	五溴聯苯醚 (Pentabromodiphenyl ether)	參考IEC 62321-6: 2015·以氣相層析儀/質譜	mg/kg	5	n.d.
八溴聯苯醚 (Octabromodiphenyl ether)	六溴聯苯醚 (Hexabromodiphenyl ether)	儀分析。(With reference to IEC 62321-6:	mg/kg	5	n.d.
九溴聯苯醚 (Nonabromodiphenyl ether)	七溴聯苯醚 (Heptabromodiphenyl ether)	2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.
大浪聯苯醚 (Decabromodiphenyl ether) 一方	八溴聯苯醚 (Octabromodiphenyl ether)		mg/kg	5	n.d.
多典解苯醚總和 (Sum of PBDEs)	九溴聯苯醚 (Nonabromodiphenyl ether)		mg/kg	5	n.d.
##苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	十溴聯苯醚 (Decabromodiphenyl ether)		mg/kg	5	n.d.
開放 (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.
2017, analysis was performed by GC/MS.) 鄰苯二甲酸二丁酯 (DBP) (Dibutyl	鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl	參考IEC 62321-8: 2017·以氣相層析儀/質譜	mg/kg	50	n.d.
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP)) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) mg/kg 50 n.d. 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) mg/kg 50 n.d. 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di- (2-ethylhexyl) phthalate (DEHP)) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) mg/kg 50 n.d. 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12- 0, 68515-48-0) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) mg/kg 50 n.d. 鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40- 0, 68515-49-1) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) mg/kg 50 n.d. 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 mg/kg 50 n.d. 鄭本二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0) 參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 mg/kg mg/kg 50 n.d.	phthalate (BBP))	儀分析。(With reference to IEC 62321-8:			
勝本二甲酸二異王酯 (DINP) (Diisobutyl phthalate (DINP)) (Diisononyl phthalate (DINP)) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-49-1) (場分析。(With reference to IEC 62321-8: 2017・以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017・以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) (場本二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) (多考IEC 62321-8: 2017・以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) (場分析。(With reference to IEC 62321-8: 2017・以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017・以氣相層析儀/質譜 を持足を持足を持足を持足を持足を持足を持足を持足を持足を持足を持足を持足を持足を		2017, analysis was performed by GC/MS.)			
2017, analysis was performed by GC/MS.) 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) ②考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) 邓苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) ③考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (美分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) 邓苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 邓苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) ②考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (美分析。(With reference to IEC 62321-8: 2017 · 以氣相層析儀/質譜 (大學) (基分析。(With reference to IEC 62321-8: 2017 · 以氣相層析儀/質譜 (大學) (基分析。(With reference to IEC 62321-8: 2017 · 以氣相層析儀/質譜 (大學) (基分析。(With reference to IEC 62321-8: 2017 · 以氣相層析儀/質譜 (大學) (基分析。(With reference to IEC 62321-8: 2017 · 以氣相層析儀/質譜 (基分析。(With reference to IEC 62321-8: 2017 · 以氣相層析像/質譜 (基分析》) · 以表述 (基分	鄰苯二甲酸二丁酯 (DBP) (Dibutyl	參考IEC 62321-8: 2017,以氣相層析儀/質譜	mg/kg	50	n.d.
郷苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)mg/kg50鄭苯二甲酸二(2-乙基己基)酯 (DEHP) (Di- (2-ethylhexyl) phthalate (DEHP))參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)mg/kg50鄭苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)mg/kg50鄭苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)mg/kg50鄭苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)參考IEC 62321-8: 2017 · 以氣相層析儀/質譜 像分析。(With reference to IEC 62321-8: 2017 · 以本有子科· 文本科· 文本科· 文本科· 文本科· 文本科· 文本科· 文本科· 文本	phthalate (DBP))	儀分析。(With reference to IEC 62321-8:			
phthalate (DIBP))		2017, analysis was performed by GC/MS.)			
2017, analysis was performed by GC/MS.) 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di- (2-ethylhexyl) phthalate (DEHP)) ※考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) ※考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) ※考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) ※考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) ※考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) ※考IEC 62321-8: 2017 · 以氣相層析儀/質譜 (数分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl	參考IEC 62321-8: 2017,以氣相層析儀/質譜	mg/kg	50	n.d.
郷苯二甲酸二(2-乙基己基)酯 (DEHP) (Di- (2-ethylhexyl) phthalate (DEHP)) 参考IEC 62321-8: 2017・以氣相層析儀/質譜 (最分析。(With reference to IEC 62321-8: 2017・以氣相層析儀/質譜 phthalate (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12- 0, 68515-48-0) 参考IEC 62321-8: 2017・以氣相層析儀/質譜 phthalate (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40- 0, 68515-49-1) 参考IEC 62321-8: 2017・以氣相層析儀/質譜 の, 68515-49-1) 参考IEC 62321-8: 2017・以氣相層析儀/質譜	phthalate (DIBP))	儀分析。(With reference to IEC 62321-8:			
(2-ethylhexyl) phthalate (DEHP))		2017, analysis was performed by GC/MS.)			
(2-ethylhexyl) phthalate (DEHP))	鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-	參考IEC 62321-8: 2017 · 以氣相層析儀/質譜	mg/kg	50	n.d.
##苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) ##苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) ##苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0) ##苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0) ### (With reference to IEC 62321-8: 2017・以氣相層析儀/質譜	(2-ethylhexyl) phthalate (DEHP))	儀分析。(With reference to IEC 62321-8:	3 3		
phthalate (DINP)) (CAS No.: 28553-12- 0, 68515-48-0)儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40- 0, 68515-49-1)參考IEC 62321-8: 2017·以氣相層析儀/質譜 後分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)mg/kg50鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)參考IEC 62321-8: 2017·以氣相層析儀/質譜 儀分析。(With reference to IEC 62321-8:mg/kg50		2017, analysis was performed by GC/MS.)			
phthalate (DINP)) (CAS No.: 28553-12-	鄰苯二甲酸二異壬酯 (DINP) (Diisononyl	參考IEC 62321-8: 2017 · 以氣相層析儀/質譜	mg/kg	50	n.d.
郷苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)	phthalate (DINP)) (CAS No.: 28553-12-	儀分析。(With reference to IEC 62321-8:	J. J		
phthalate (DIDP)) (CAS No.: 26761-40- 0, 68515-49-1)	0, 68515-48-0)	2017, analysis was performed by GC/MS.)			
phthalate (DIDP)) (CAS No.: 26761-40- 0, 68515-49-1)	鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl	參考IEC 62321-8: 2017 · 以氣相層析儀/質譜	mg/kg	50	n.d.
0, 68515-49-1)2017, analysis was performed by GC/MS.)Image: Second of the control of the co		儀分析。(With reference to IEC 62321-8:	J. J		
phthalate (DNOP)) (CAS No.: 117-84-0)	0, 68515-49-1)	2017, analysis was performed by GC/MS.)			
phthalate (DNOP)) (CAS No.: 117-84-0)	鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octvl	參考IEC 62321-8: 2017,以氣相層析儀/質譜	mg/ka	50	n.d.
			<i>J,</i> J		
[2027] analysis was performed by 30, 110.7	,	2017, analysis was performed by GC/MS.)			



Test Report

號碼(No.): EKR25800939 日期(Date): 17-Sep-2025

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台灣麥德美股份有限公司 (MACDERMID PERFORMANCE SOLUTIONS TAIWAN LTD.) 新竹縣湖口鄉光復北路77號 (77 KUANG FU N. RD, HSIN-CHU ENLARGED INDUSTRIAL PARK, HSIN-CHU TAIWAN)

測試項目 (Tast Harra)	測試方法	單位 (Unit)	MDL	結果
(Test Items)	(Method)	(Unit)		(Result) No.1
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)		mg/kg	50	n.d.
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537- 15-1)	參考BS EN 14582: 2016·以離子層析儀分 析。(With reference to BS EN 14582: 2016,	mg/kg	50	n.d.
溴 (Br) (Bromine (Br)) (CAS No.: 10097- 32-2)	analysis was performed by IC.)	mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.
全氟辛烷磺酸及其鹽類 (PFOS and its salts) (Perfluorooctane sulfonates and its salts (PFOS and its salts)) (CAS No.: 1763-23-1 and its salts)	修改EN 17681-1: 2022 & EN 17681-2: 2022 · 以液相層析串聯質譜儀分析。(Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.
全氟辛酸及其鹽類 (PFOA and its salts) (Perfluorooctanoic acid and its salts (PFOA and its salts)) (CAS No.: 335-67-1 and its salts)	修改EN 17681-1: 2022 & EN 17681-2: 2022 · 以液相層析串聯質譜儀分析。(Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)	參考US EPA 3052: 1996 · 以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	參考US EPA 3052: 1996 · 以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.
聚氯乙烯 (Polyvinyl chloride) (PVC)	參考ASTM E1252: 2021·以傅立葉轉換紅外線光譜儀及焰色法分析。(With reference to ASTM E1252: 2021, analysis was performed by FT-IR and Flame Test.)	**	-	Negative



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測試項目	測試方法	單位	MDL	結果
(Test Items)	(Method)	(Unit)		(Result)
				No.1
全氟辛烷磺酸及其鹽類 (PFOS and its	參考CEN/TS 15968: 2010 · 以液相層析串聯	mg/kg	0.01	n.d.
salts) (Perfluorooctane sulfonates and	質譜儀分析。(With reference to CEN/TS			
its salts (PFOS and its salts)) (CAS No.:	15968: 2010, analysis was performed by			
1763-23-1 and its salts)	LC/MS/MS.)			
全氟辛酸及其鹽類 (PFOA and its salts)	参考CEN/TS 15968: 2010,以液相層析串聯	mg/kg	0.01	n.d.
(Perfluorooctanoic acid and its salts	質譜儀分析。(With reference to CEN/TS			
(PFOA and its salts)) (CAS No.: 335-67-1	15968: 2010, analysis was performed by			
and its salts)	LC/MS/MS.)			

備註(Note):

- 1. mg/kg = ppm; 0.1wt% = 0.1% = 1000ppm
- 2. MDL = Method Detection Limit (方法偵測極限值)
- 3. n.d. = Not Detected (未檢出); 小於MDL / Less than MDL
- 4. "-" = Not Regulated (無規格值)
- 5. **= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到/未檢出); Positive = Detectable 陽性(已偵測到/檢出)



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PFAS Remark:

現有PFAS定量技術是分析PFAS物質的特定結構,但同碳數族群之PFAS酸及鹽類物質,其可被辨識的特定結構相同,因此無法區別所分析的特定結構是來自酸或者鹽類,故測試結果為同碳數族群之PFAS之酸及鹽類物質的濃度總合。下表PFAS物質濃度皆已包含在測試結果中,相關資訊請參見下表:(下表列舉PFAS物質僅為範例,並不包含所有同碳數族群之PFAS鹽類。) (The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.))

群組名稱	物質名稱	CAS No.
(Group Name)	(Substance Name)	
	全氟辛烷磺酸 (Perfluorooctane sulfonates) (PFOS)	1763-23-1
	全氟辛基磺酸鉀 (PFOS-K)	2795-39-3
	Potassium perfluorooctanesulfonate (PFOS-K)	
	全氟辛基磺酸鋰 (PFOS-Li)	29457-72-5
	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	
	全氟辛基磺酸銨 (PFOS-NH ₄)	29081-56-9
	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄)	
	全氟辛基磺酸二乙醇銨 (PFOS-NH(C2H4OH)2)	70225-14-8
	Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(C2H4OH)2)	
	Nn(C2n4On)2)	
	全氟辛基磺酸四乙基銨 (PFOS-N(C_2H_5) ₄)	56773-42-3
	Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-	
PFOS, 及其鹽&衍生物	$N(C_2H_5)_4)$	
(PFOS, its salts & derivatives)	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA)	251099-16-8
	N-decyl-N,N-dimethyldecan-1-aminium	
	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-	
	sulfonate (PFOS-DDA)	
	全氟辛基磺酸四丁基銨 (PFOS-N(C ₄ H ₉) ₄)	111873-33-7
	TetrabutylAmmonium perfluorooctanesulfonate (PFOS-	
	$N(C_4H_9)_4)$	
	全氟辛基磺醯氟 (POSF)	307-35-7
	Perfluorooctane sulfonyl fluoride (POSF)	
	全氟辛基磺酸鎂 (PFOS-Mg)	91036-71-4
	Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	
	全氟辛基磺酸鈉 (PFOS-Na)	4021-47-0
	Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	



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群組名稱	物質名稱	CAS No.
(Group Name)	(Substance Name)	
	全氟辛烷磺酸哌啶 Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8- heptadecafluorooctanesulfonate	71463-74-6
	全氟辛烷磺酸鹽 Perfluorooctanesulfonate (anion)	45298-90-6
	全氟辛烷磺酸與 N,N-二乙基乙胺 $(1:1)$ (PFOS-N(C_2H_5) ₃) 1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, compd. with N,N-diethylethanamine $(1:1)$ (PFOS-N(C_2H_5) ₃)	54439-46-2
	N,N,N-三甲基-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1-辛烷磺酸 甲銨(1:1) (PFOS-N(CH ₃) ₄) Methanaminium, N,N,N-trimethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1- octanesulfonate (1:1) (PFOS-N(CH ₃) ₄)	56773-44-5
PFOS, 及其鹽&衍生物	1 -五胺·N,N,N-三丙基-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟- 1 - 辛烷磺酸鹽(1:1) (PFOS-N(C_3H_7) $_3$ (C_5H_{11})) 1-Pentanaminium, N,N,N-tripropyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1) (PFOS-N(C_3H_7) $_3$ (C_5H_{11}))	56773-56-9
(PFOS, its salts & derivatives)	1-丁銨‧N,N-二丁基-N-甲基-‧1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟- 1 -辛烷磺酸鹽 (1:1) (PFOS-N(C ₄ H ₉) ₃ (CH ₃)) 1-Butanaminium, N,N-dibutyl-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1) (PFOS-N(C ₄ H ₉) ₃ (CH ₃))	124472-68-0
	碘鎓・雙[4-(1,1-二甲基乙基)苯基]-・1,1,2,2,3,3,4,4,5,5,6,6,7,7 ,8,8,8 - 十七氟-1-辛烷磺酸鹽 (1:1) lodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1- octanesulfonate (1:1)	213740-80-8
	二苯基鍺(2,4,6-三甲基苯基)-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七 氟- 1-辛烷磺酸鹽 (1:1) Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1- octanesulfonate (1:1)	258341-99-0
	吡啶鎓 · 1-十六烷基- · 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1 - 辛烷磺酸鹽 (1:1) Pyridinium, 1-hexadecyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	334529-63-4



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群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
(Group Hume)	1-癸胺·N,N,N-三乙基-·1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-1-辛烷磺酸鹽(1:1) 1-Decanaminium, N,N,N-triethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	773895-92-4
	全氟辛烷磺酸四丁基鏻 (PFOS-P(C_4H_9) ₄)) Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-P(C_4H_9) ₄))	2185049-59-4
PFOS, 及其鹽&衍生物	全氟辛烷磺酸二乙胺鹽 (PFOS-C ₄ H ₁₁ N) Perfluorooctanesulfonic acid diethylamine salt (PFOS-C ₄ H ₁₁ N)	2205029-08-7
(PFOS, its salts & derivatives)	庚基二甲基 $\{2-[(2-PER-2-烯酰基)氧基]乙基\}$ 全氟辛烷磺酸氮紮鹽 (PFOS- $C_{15}H_{30}NO_2$) Heptyldimethyl $\{2-[(2-methylprop-2-enoyl)oxy]ethyl\}$ azanium perfluorooctanesulfonate (PFOS- $C_{15}H_{30}NO_2$)	1203998-97-3
	1-辛烷磺酸·1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十七氟-,1,1'-酸酐 (PFOSAN) 1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8- heptadecafluoro-, 1,1'-anhydride (PFOSAN)	423-92-7
	全氟辛基磺醯氯(PFOS-CI) Perfluoro-1-octanesulfonyl chloride (PFOS-CI)	423-60-9



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群組名稱	物質名稱	CAS No.
(Group Name)	(Substance Name) 全氟辛酸 (Perfluorooctanoic acid) (PFOA)	335-67-1
	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanote (PFOA-Ag)	335-93-3
	全氟辛氟 (PFOA-F) Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	全氟辛酸銨 (APFO) Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	全氟辛酸鋰 (PFOA-Li) Lithium perfluorooctanoate (PFOA-Li)	17125-58-5
	全氟辛酸鈷 (PFOA-Co) Cobalt perfluorooctanoate (PFOA-Co)	35965-01-6
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	全氟辛酸銫 (PFOA-Cs) Cesium perfluorooctanoate (PFOA-Cs)	17125-60-9
	全氟辛酸鉻 (PFOA-Cr(3 ⁺)) Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, chromium(3+) (PFOA-Cr(3 ⁺))	68141-02-6
	全氟辛酸-哌嗪(2:1) PFOA-NH($C_4H_{10}N$) Pentadecafluorooctanoic acidpiperazine (2/1)PFOA-NH($C_4H_{10}N$)	423-52-9
	全氟辛酸鹽 Pentadecafluorooctanoate (anion)	45285-51-6
	全氟辛酸酐 Perfluorooctanoic Anhydride	33496-48-9
	乙銨·N,N,N-三乙基-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟辛酸 (1:1) Ethanaminium, N,N,N-triethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1)	98241-25-9
	全氟辛酸四甲銨鹽 Tetramethylammoniumperfluoroctanoat	32609-65-7



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群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	1-丙銨·N,N,N-三丙基-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟辛酸 (1:1) 1-Propanaminium, N,N,N-tripropyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8- pentadecafluorooctanoate (1:1)	277749-00-5
	辛酸・2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟-鉀鹽・水合物 (1:1:2) (PFOA-K(H_2O) $_2$) Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, potassium salt, hydrate (1:1:2) (PFOA-K(H_2O) $_2$)	98065-31-7
	辛酸·2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟-·化合物。與乙胺 (1:1) (PFOA-C ₂ H ₇ N) Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, compd. with ethanamine (1:1) (PFOA-C ₂ H ₇ N)	1376936-03-6
	十五氟辛酸化合物與吡啶 (1:1) (9CI) (PFOA-C ₅ H ₅ N) Octanoic acid, pentadecafluoro-, compd. with pyridine (1:1) (9CI) (PFOA-C ₅ H ₅ N)	95658-47-2
	十五氟辛酸-1-苯基哌嗪(1:1) (PFOA- $C_{10}H_{14}N_2$) Pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA- $C_{10}H_{14}N_2$)	1514-68-7
	1-辛胺·N,N,N-三甲基-·2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-十五氟辛酸 (1:1) (PFOA- C ₁₁ H ₂₆ N) 1-Octanaminium, N,N,N-trimethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1) (PFOA- C ₁₁ H ₂₆ N)	927835-01-6
	全氟辛醯氯 (PFOA-CI) Pentadecafluorooctanoyl chloride (PFOA-CI)	335-64-8



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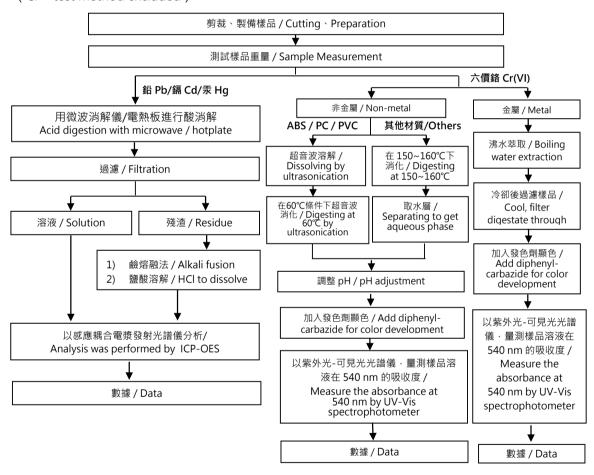
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重金屬流程圖 / Analytical flow chart of Heavy Metal

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. (Cr^{6+} test method excluded)





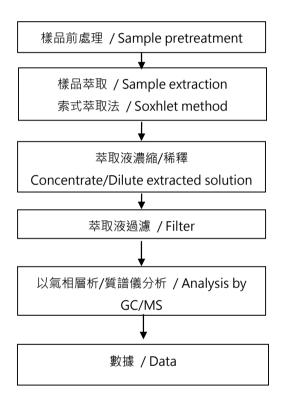
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多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART





Test Report

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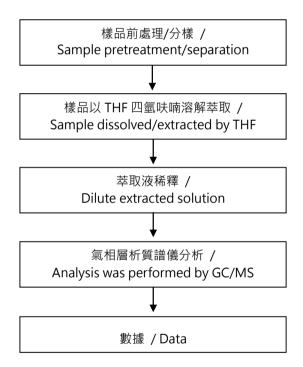
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可塑劑分析流程圖 / Analytical flow chart of phthalate content

【測試方法/Test method: IEC 62321-8】



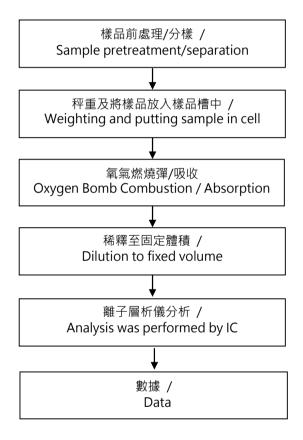


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台灣麥德美股份有限公司 (MACDERMID PERFORMANCE SOLUTIONS TAIWAN LTD.) 新竹縣湖口鄉光復北路77號 (77 KUANG FU N. RD, HSIN-CHU ENLARGED INDUSTRIAL PARK, HSIN-CHU TAIWAN)

鹵素分析流程圖 / Analytical flow chart of Halogen



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Test Report

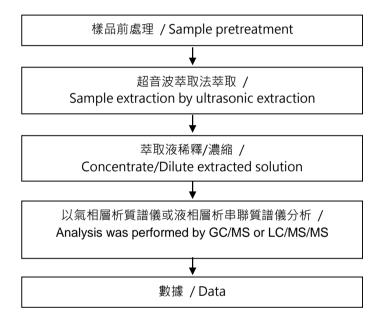
號碼(No.): EKR25800939

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全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)





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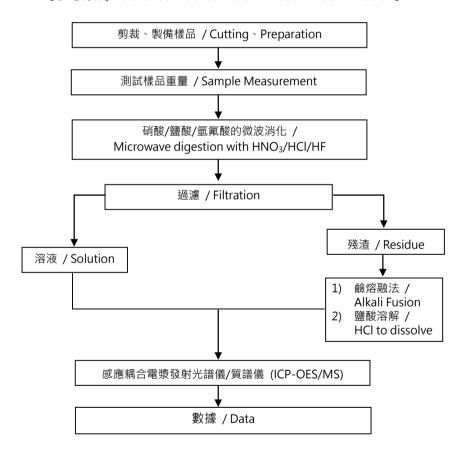
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元素(含重金屬)分析流程圖 / Analytical flow chart of Elements (Heavy metal included)

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.

【参考方法/Reference method: US EPA 3051、US EPA 3052】



* US EPA 3051 方法未添加氫氟酸 / US EPA 3051 method does not add HF.



Test Report

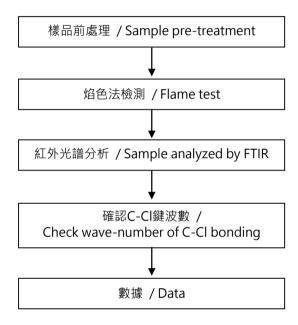
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聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC





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* 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.)

EKR25800939



** 報告結尾 (End of Report) **