

## 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 1 of 73

UNIVERTICAL LLC  
203 WEATHERHEAD ST. ANGOLA, IN USA 46703

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) :

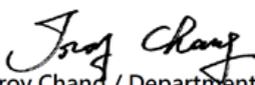
送樣廠商(Sample Submitted By) : UNIVERTICAL LLC  
樣品名稱(Sample Name) : COPPER METAL

=====  
收件日(Sample Receiving Date) : 27-Feb-2025  
測試期間(Testing Period) : 27-Feb-2025 to 04-Mar-2025

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) 依據客戶要求，評估所選樣品中特定PFAS的風險。被評估的PFAS總項目數量為552項，包括147項檢測項和405項列表項 (see PFAS Remark)。(As requested by the client, the risk of specific PFAS in the selected sample is evaluated. The total amounts of evaluated PFAS are 552 items, concluding 147 tested items and 405 listed items (see PFAS Remark).)  
(3) 其他測試項目請見下一頁。(Please refer to next pages for the other item(s).)

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

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.)

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



PIN CODE: F1C49FB0

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 2 of 73

UNIVERTICAL LLC  
203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 測試部位敘述 (Test Part Description)

No.1 : 銅色金屬 (COPPER COLORED METAL)

### 測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
鎘 (Cd) (Cadmium (Cd))	參考IEC 62321-5: 2013 · 以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb))	參考IEC 62321-5: 2013 · 以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg))	參考IEC 62321-4: 2013+ AMD1: 2017 · 以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.)	mg/kg	2	n.d.	1000
六價鉻 (Hexavalent Chromium) Cr(VI) (#2)	參考IEC 62321-7-1: 2015 · 以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.)	µg/cm <sup>2</sup>	0.1	n.d.	-
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015 · 以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯 (Dibromobiphenyl)		mg/kg	5	n.d.	-
三溴聯苯 (Tribromobiphenyl)		mg/kg	5	n.d.	-
四溴聯苯 (Tetrabromobiphenyl)		mg/kg	5	n.d.	-
五溴聯苯 (Pentabromobiphenyl)		mg/kg	5	n.d.	-
六溴聯苯 (Hexabromobiphenyl)		mg/kg	5	n.d.	-
七溴聯苯 (Heptabromobiphenyl)		mg/kg	5	n.d.	-
八溴聯苯 (Octabromobiphenyl)		mg/kg	5	n.d.	-
九溴聯苯 (Nonabromobiphenyl)		mg/kg	5	n.d.	-
十溴聯苯 (Decabromobiphenyl)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 3 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015 · 以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	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.	-
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.	1000
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	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/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))	參考IEC 62321-8: 2017 · 以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
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/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
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/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 4 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
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/質譜儀分析。(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/質譜儀分析。(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/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	-
六溴環十二烷及所有主要被辨別出的異構物(HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD)) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	參考IEC 62321: 2008 · 以氣相層析儀/質譜儀分析。(With reference to IEC 62321: 2008, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016 · 以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	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, analysis was performed by IC.)	mg/kg	50	n.d.	-
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)	參考BS EN 14582: 2016 · 以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.	-
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)	參考BS EN 14582: 2016 · 以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	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 <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 5 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
鈹 (Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	參考US EPA 3050B: 1996 · 以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	-
銻 (Sb) (Antimony (Sb)) (CAS No.: 7440-36-0)	參考US EPA 3050B: 1996 · 以感應耦合電漿發射光譜儀分析。(With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	-
砷 (As) (Arsenic (As)) (CAS No.: 7440-38-2)	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.	-
多氯聯苯 (PCBs) (Polychlorinated biphenyls (PCBs))	參考US EPA 3550C: 2007 · 以氣相層析儀/質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.)	mg/kg	0.5	n.d.	-
紅磷 (Red Phosphorus)	以熱裂解-氣相層析儀/質譜儀分析。(Analysis was performed by Pyrolyzer-GC/MS.)	**	-	Negative	-
全氟/多氟烷基物質 (PFAS)					
PFHxA及其鹽類 (PFHxA and its salts)					
全氟己酸及其鹽類 (PFHxA and its salts) (Perfluorohexane acid and its salts (PFHxA and its salts)) (CAS No.: 307-24-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 6 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
<b>PFHxA相關化合物 (PFHxA related compounds)</b>					
1H,1H,2H,2H-全氟-1-辛醇 (6:2 FTOH) (1H,1H,2H,2H-Perfluoro-1-octanol (6:2FTOH)) (CAS No.: 647-42-7)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟辛基丙烯酸酯 (6:2 FTA) (1H,1H,2H,2H-Perfluorooctylacrylate (6:2FTA)) (CAS No.: 17527-29-6)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟辛基甲基丙烯酸酯(6_2 FTMAC) (1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMAC)) (CAS No.: 2144-53-8)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟辛磺酸及其鹽類 (6:2 FTS and its salts) (1H,1H,2H,2H-Perfluorooctanesulphonic acid and its salts (6:2 FTS and its salts)) (CAS No.: 27619-97-2 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1-碘-1H,1H,2H,2H-全氟辛烷 (6:2 FTI) (1,1,1,2,2,3,3,4,4,5,5,6,6-tridecafluoro-8-iodooctane (6:2 FTI)) (CAS No.: 2043-57-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟己基碘 (PFHxl) (Perfluorohexyl iodide (PFHxl)) (CAS No.: 355-43-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
N-(4,4,5,5,6,6,7,7,8,8,9,9,9-十三氟壬基)碘乙醯胺 (n-(4,4,5,5,6,6,7,7,8,8,9,9,9-tridecafluorononyl)iodoacetamide) (CAS No.: 852527-50-5)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 7 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
全氟辛基三乙氧基矽烷 (POTS) (Perfluorooctyl triethoxysilane (POTS)) (CAS No.: 51851-37-7)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟辛基三氯矽烷 (1H,1H,2H,2H-Perfluorooctyltrichlorosilane) (CAS No.: 78560-45-9)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟辛基三甲氧基矽烷 (1H,1H,2H,2H- Perfluorooctyltrimethoxysilane) (CAS No.: 85857-16-5)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
單[2-(全氟乙烷)乙基]磷酸鹽及其鹽類 (6:2 monoPAP and its salts) (Mono[2- (perfluorohexyl)ethyl] Phosphate and its salts (6:2 monoPAP and its salts)) (CAS No.: 57678-01-0 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
2-碘-1H,1H,1H,2H,3H,3H-全氟壬烷 (2-Iodo- 1H,1H,1H,2H,3H,3H-perfluorononane) (CAS No.: 38550-34-4)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
N-[3-(二甲基氨基)丙基]- 3,3,4,4,5,5,6,6,7,7,8,8,8-十三氟辛基磺醯胺N- 氧化物 (N-[3-(dimethylamino)propyl]- 3,3,4,4,5,5,6,6,7,7,8,8,8- tridecafluorooctanesulphonamide N-oxide) (CAS No.: 80475-32-7)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
硫氰酸, 3,3,4,4,5,5,6,6,7,7,8,8,8-十三氟辛酯 (Thiocyanic acid, 3,3,4,4,5,5,6,6,7,7,8,8,8- tridecafluorooctyl ester) (CAS No.: 26650- 09-9)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 8 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
2H,2H,3H,3H-全氟壬酸 (6:3 FTCA) (2H,2H,3H,3H-Perfluorononanoic acid (6:3 FTCA)) (CAS No.: 27854-30-4)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟辛硫醇(6:2 FTSH) (1H,1H,2H,2H-Perfluorooctanethiol (6:2 FTSH)) (CAS No.: 34451-26-8)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1H,1H,2H,2H-全氟辛基二甲基氯矽烷 (6:2 FTSiMe2Cl) (1H,1H,2H,2H-Perfluorooctyldimethylchlorosilane (6:2 FTSiMe2Cl)) (CAS No.: 102488-47-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1-碘-1H,1H-全氟庚烷 (6:1 FTI) (1-Iodo-1H,1H-Perfluoroheptane (6:1 FTI)) (CAS No.: 212563-43-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1H,1H,2H,2H,3H,3H-全氟壬基碘化物 (6:3 FTI) (3-(Perfluorohexyl)propyl iodide (6:3 FTI)) (CAS No.: 89889-20-3)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1H,1H,2H,2H-全氟辛烷磷酸及其鹽類 (6:2 FTPA and its salts) (1H,1H,2H,2H-Perfluorooctanephosphonic acid and its salts (6:2 FTPA and its salts)) (CAS No.: 252237-40-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
十一氟正己烷-1-醇 (5:1 FTOH) (1H,1H-perfluorohexan-1-ol (5:1 FTOH)) (CAS No.: 423-46-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.2	n.d.	-

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 9 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
全氟-1-庚醇 (6:1 FTOH) (1H,1H-perfluoro-1-heptanol (6:1 FTOH)) (CAS No.: 375-82-6)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.2	n.d.	-
3-全氟己基丙醇 (6:3 FTOH) (3-(perfluorohexyl)propanol (6:3 FTOH)) (CAS No.: 80806-68-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
3,3,4,4,5,5,6,6,7,7,7-十一氟-2-庚醇 (3,3,4,4,5,5,6,6,7,7,7-undecafluoro-2-heptanol) (CAS No.: 914637-05-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.2	n.d.	-
全氟己基辛烷 (1-(perfluorohexyl)octane) (CAS No.: 133331-77-8)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1H,1H-全氟庚基胺 (6:1 FTNH2) (1H,1H-Perfluoroheptylamine (6:1 FTNH2)) (CAS No.: 423-49-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
全氟己基乙烯 (PFHxE) (Perfluorohexyl ethylene (PFHxE)) (CAS No.: 25291-17-2)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
<b>PFHxS及其鹽類 (PFHxS and its salts)</b>					
全氟己基磺酸及其鹽類 (PFHxS and its salts) (Perfluorohexane sulfonate and its salts (PFHxS and its salts)) (CAS No.: 355-46-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 10 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
<b>PFHxS相關化合物 (PFHxS related compounds)</b>					
N-甲基全氟-1-己烷磺醯胺 (N-MeFHxSA) (N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)) (CAS No.: 68259-15-4)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟己烷磺醯胺 (PFHxSA) (Perfluorohexane sulfonamide (PFHxSA)) (CAS No.: 41997-13-1)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-[3-(二甲基氨基)丙基]十三氟己烷磺醯胺 (N-AP-FHxSA) (N-[3-(dimethylamino)propyl]tridecafluorohexanesulphonamide (N-AP-FHxSA)) (CAS No.: 50598-28-2)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
2-[甲基[(十三氟己基)磺醯基]氨基]丙烯酸乙酯 (N-MeFHSEA) (2-[Methyl[(tridecafluorohexyl)sulphonyl]amino]ethyl acrylate (N-MeFHSEA)) (CAS No.: 67584-57-0)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
2-[甲基[(十三氟己基)磺醯基]氨基]乙基甲基丙烯酸酯 (2-Propenoic acid, 2-methyl-, 2-[methyl[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]amino]ethyl ester) (CAS No.: 67584-61-6)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
2-[乙基[(十三氟己基)磺醯基]氨基]乙基甲基丙烯酸酯 (2-Propenoic acid, 2-methyl-, 2-[ethyl[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]amino]ethyl ester) (CAS No.: 67906-70-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 11 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
十三氟-N-(2-羥基乙基)-N-甲基己烷磺醯胺 (MeFHxSE) (1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2- hydroxyethyl)-N-methyl-(MeFHxSE)) (CAS No.: 68555-75-9)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-乙基-N-[(十三氟己基)磺醯基]甘氨酸及其鹽 類 (EtFHxSAA and its salts) (Glycine, N- ethyl-N-[(1,1,2,2,3,3,4,4,5,5,6,6,6- tridecafluorohexyl)sulfonyl] and its salts (EtFHxSAA and its salts)) (CAS No.: 68957- 32-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
<b>PFOS及其鹽類 (PFOS and its salts)</b>					
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)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
<b>PFOS相關化合物 (PFOS related compounds)</b>					
N-乙基全氟正辛磺醯胺 (EtFOSA) (N- ethylperfluoro-1-octanesulfonamide (EtFOSA)) (CAS No.: 4151-50-2)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-甲基全氟正辛磺醯胺 (N-Me-FOSA) (N- Methyl-Perfluorooctanesulfonamide (N-Me- FOSA)) (CAS No.: 31506-32-8)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-乙基全氟辛基磺醯胺乙醇 (N-Et-FOSE alcohol) (N-Ethyl- Perfluorooctanesulfonamidoethanol (N-Et- FOSE alcohol)) (CAS No.: 1691-99-2)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 12 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
N-甲基全氟辛基磺醯胺乙醇 (N-Me-FOSE alcohol) (N-Methyl-Perfluorooctanesulfonamidoethanol (N-Me-FOSE alcohol)) (CAS No.: 24448-09-7)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟辛基磺醯胺及其鹽類 (PFOSA and its salts) (Perfluorooctanesulfonamide and its salts (PFOSA and its salts)) (CAS No.: 754-91-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
<b>PFOA及其鹽類 (PFOA and its salts)</b>					
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)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
<b>PFOA相關化合物 (PFOA related compounds)</b>					
全氟辛酸甲酯 (Me-PFOA) (Methyl perfluorooctanoate (Me-PFOA)) (CAS No.: 376-27-2)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟辛酸乙酯 (Et-PFOA) (Ethyl perfluorooctanoate (Et-PFOA)) (CAS No.: 3108-24-5)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟辛基碘烷 (PFOI) (Perfluoro-1-iodooctane (PFOI)) (CAS No.: 507-63-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
3-全氟庚基丙酸 (7:3 FTCA) (3-Perfluoroheptyl propanoic acid (7:3 FTCA)) (CAS No.: 812-70-4)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 13 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
單-[2-(全氟辛基)乙烷]磷酸酯及其鹽類 (8:2 monoPAP and its salts) (Mono-[2-(perfluorooctyl)ethyl]phosphate and its salts (8:2 monoPAP and its salts)) (CAS No.: 57678-03-2 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸磺酸及其鹽類 (8:2 FTS and its salts) (1H,1H,2H,2H-Perfluorodecanesulfonic acid and its salts (8:2 FTS and its salts)) (CAS No.: 39108-34-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-全氟-1-癸醇 (8:2 FTOH) (1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)) (CAS No.: 678-39-7)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸基丙烯酸酯 (8:2 FTA) (1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)) (CAS No.: 27905-45-9)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸基甲基丙烯酸酯 (8:2 FTMA) (1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)) (CAS No.: 1996-88-9)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
2H,2H-全氟癸酸及其鹽類 (H2PFDA and its salts) (2H,2H-Perfluorodecane acid and its salts (H2PFDA and its salts)) (CAS No.: 27854-31-5 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-全氟癸基碘 (8_2 FTI) (1H,1H,2H,2H-Perfluorodecyl iodide (8_2 FTI)) (CAS No.: 2043-53-0)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 14 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1H,1H,2H,2H-全氟十七烷三甲基氧矽烷(8:2 FTSi(OC2H5)3) (1H,1H,2H,2H-Perfluorodecyltriethoxysilane (8:2 FTSi(OC2H5)3)) (CAS No.: 101947-16-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
2H,2H,3H,3H-全氟癸酸及其鹽類 (4HPFUnA and its salts) (2H,2H,3H,3H-Perfluoroundecanoic Acid and its salts (4HPFUnA and its salts)) (CAS No.: 34598-33-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H-全氟-1-癸烯 (PFDE) (1H,1H,2H-Heptadecafluoro-1-decene (PFDE)) (CAS No.: 21652-58-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
雙(1H,1H,2H,2H-全氟癸基)磷酸酯及其鹽類 (8_2diPAP and its salts) (Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate and its salts (8_2diPAP and its salts)) (CAS No.: 678-41-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
<b>C9-C20 PFCAs及其鹽類與相關化合物 (C9-C20 PFCAs its salts and related compounds)</b>					
單-[2-(全氟辛基)乙烷]磷酸酯及其鹽類 (8:2 monoPAP and its salts) (Mono-[2-(perfluorooctyl)ethyl]phosphate and its salts (8:2 monoPAP and its salts)) (CAS No.: 57678-03-2 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸磺酸及其鹽類 (8:2 FTS and its salts) (1H,1H,2H,2H-Perfluorodecanesulfonic acid and its salts (8:2 FTS and its salts)) (CAS No.: 39108-34-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 15 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1H,1H,2H,2H-全氟-1-癸醇 (8:2 FTOH) (1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)) (CAS No.: 678-39-7)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸基丙烯酸酯 (8:2 FTA) (1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)) (CAS No.: 27905-45-9)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸基甲基丙烯酸酯 (8:2 FTMA) (1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)) (CAS No.: 1996-88-9)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
2H,2H-全氟癸酸及其鹽類 (H2PFDA and its salts) (2H,2H-Perfluorodecane acid and its salts) (CAS No.: 27854-31-5 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-全氟癸基碘 (8_2 FTI) (1H,1H,2H,2H-Perfluorodecyl iodide (8_2 FTI)) (CAS No.: 2043-53-0)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟十七烷三甲基氧矽烷(8:2 FTSi(OC2H5)3) (1H,1H,2H,2H-Perfluorodecyltriethoxysilane (8:2 FTSi(OC2H5)3)) (CAS No.: 101947-16-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
2H,2H,3H,3H-全氟癸酸及其鹽類 (4HPFUnA and its salts) (2H,2H,3H,3H-Perfluoroundecanoic Acid and its salts) (CAS No.: 34598-33-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 16 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1H,1H,2H-全氟-1-癸烯 (PFDE) (1H,1H,2H-Heptadecafluoro-1-decene (PFDE)) (CAS No.: 21652-58-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
雙(1H,1H,2H,2H-全氟癸基)磷酸酯及其鹽類 (8_2diPAP and its salts) (Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate and its salts (8_2diPAP and its salts)) (CAS No.: 678-41-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟壬酸及其鹽類 (PFNA and its salts) (Perfluorononan-1-oic acid and its salts (PFNA and its salts)) (CAS No.: 375-95-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟-3,7-二甲基辛酸 (PF-3,7-DMOA) (Perfluoro-3,7-dimethyloctanoic Acid (PF-3,7-DMOA)) (CAS No.: 172155-07-6)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟癸酸及其鹽類 (PFDA and its salts) (Perfluorodecane acid and its salts (PFDA and its salts)) (CAS No.: 335-76-2 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十一烷酸及其鹽類 (PFUnDA and its salts) (Perfluoroundecanoic acid and its salts (PFUnDA and its salts)) (CAS No.: 2058-94-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十二烷酸及其鹽類 (PFDoDA and its salts) (Perfluorododecanoic acid and its salts (PFDoDA and its salts)) (CAS No.: 307-55-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟癸烷磺酸及其鹽類 (PFDS and its salts) (Perfluorodecane sulfonate and its salts (PFDS and its salts)) (CAS No.: 335-77-3 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 17 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
全氟十三烷酸及其鹽類 (PFTTrDA and its salts) (Pentacosfluorotridecanoic acid and its salts (PFTTrDA and its salts)) (CAS No.: 72629-94-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十四烷酸及其鹽類 (PFTDA and its salts) (Perfluorotetradecanoic acid and its salts (PFTDA and its salts)) (CAS No.: 376-06-7 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-全氟-1-十二醇 (10:2 FTOH) (1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2FTOH)) (CAS No.: 865-86-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟十二烷基丙烯酸酯 (10:2 FTA) (1H,1H,2H,2H-Perfluorododecylacrylate (10:2FTA)) (CAS No.: 17741-60-5)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟十二烷基甲基丙烯酸酯 (10:2 FTMA) (1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA)) (CAS No.: 2144-54-9)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟十四烷基醇 (12:2 FTOH) (1H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH)) (CAS No.: 39239-77-5)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟十二烷磺酸及其鹽類 (10:2 FTS and its salts) (1H,1H,2H,2H-Perfluorododecane sulfonic acid and its salts (10:2 FTS and its salts)) (CAS No.: 120226-60-0 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 18 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1H,1H,2H,2H-全氟十二烷基碘 (10:2 FTI) (1H,1H,2H,2H-Perfluorododecyl iodide (10:2 FTI)) (CAS No.: 2043-54-1)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟十四烷基碘 (12:2 FTI) (1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI)) (CAS No.: 30046-31-2)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟壬烷磺酸及其鹽類 (PFNS and its salts) (Perfluorononane sulfonic acid and its salts (PFNS and its salts)) (CAS No.: 68259-12-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十一烷磺酸及其鹽類 (PFUnDS and its salts) (Perfluoroundecane sulfonic acid and its salts (PFUnDS and its salts)) (CAS No.: 749786-16-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十二烷磺酸及其鹽類 (PFDoDS and its salts) (Perfluorododecane sulfonic acid and its salts (PFDoDS and its salts)) (CAS No.: 79780-39-5 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十三烷磺酸及其鹽類 (PFTrDS and its salts) (Perfluorotridecane sulfonic acid and its salts (PFTrDS and its salts)) (CAS No.: 791563-89-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
雙[2-(全氟癸基)乙基]磷酸鹽及其鹽類 (10:2 diPAP and its salts) (10:2 Fluortelomerphosphatediester and its salts (10:2 diPAP and its salts)) (CAS No.: 1895- 26-7 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
全氟碘代十二烷 (PFDoDI) (Perfluorododecyl iodide (PFDoDI)) (CAS No.: 307-60-8)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 19 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1-碘全氟癸烷 (PFDI) (Perfluorodecyl iodide (PFDI)) (CAS No.: 423-62-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
單[2-(全氟癸基)乙基]磷酸酯及其鹽類 (10:2 monoPAP and its salts) (10:2 Fluortelomerphosphatemonoester (10:2 monoPAP and its salts)) (CAS No.: 57678-05-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
全氟十五烷酸及其鹽類 (PFPeDA and its salts, C15) (Perfluoropentadecanoic acid and its salts (PFPeDA and its salts, C15)) (CAS No.: 141074-63-7 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
全氟十六烷酸及其鹽類 (PFHxDA and its salts, C16) (Perfluorohexadecanoic acid and its salts (PFHxDA and its salts, C16)) (CAS No.: 67905-19-5 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟十八烷酸及其鹽類 (PFODA and its salts, C18) (Perfluorooctadecanoic acid and its salts (PFODA and its salts, C18)) (CAS No.: 16517-11-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 20 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
其他PFAS (Other PFAS)					
三氟乙酸及其鹽類 (TFA and its salts) (Trifluoroacetic acid and its salts (TFA and its salts)) (CAS No.: 76-05-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	1	n.d.	-
全氟丁酸及其鹽類 (PFBA and its salts) (Perfluorobutane acid and its salts (PFBA and its salts)) (CAS No.: 375-22-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟丁磺酸及其鹽類 (PFBS and its salts) (Perfluorobutane sulfonate and its salts (PFBS and its salts)) (CAS No.: 375-73-5 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟丁磺醯胺 (Perfluorobutane sulfonamides) (CAS No.: 30334-69-1)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
N-(2-羥乙基)-N-甲基全氟丁烷磺醯胺 (PFBS-NC3H8O) (1,1,2,2,3,3,4,4,4-nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide (PFBS-NC3H8O)) (CAS No.: 34454-97-2)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-甲基丙烯酸全氟己酯 (4:2 FTMA) (1H,1H,2H,2H-Perfluorohexyl methacrylate (4:2 FTMA)) (CAS No.: 1799-84-4)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟戊酸及其鹽類 (PFPA and its salts) (Perfluoropentane acid and its salts (PFPA and its salts)) (CAS No.: 2706-90-3 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 21 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
全氟庚酸及其鹽類 (PFHpA and its salts) (Perfluoroheptane acid and its salts (PFHpA and its salts)) (CAS No.: 375-85-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
7H-十二氟庚酸及其鹽類 (HPFHpA and its salts) (7H-Dodecanefluoroheptane acid and its salts (HPFHpA and its salts)) (CAS No.: 1546-95-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟庚基磺酸及其鹽類 (PFHpS and its salts) (Perfluoroheptane sulfonate and its salts (PFHpS and its salts)) (CAS No.: 375-92-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟-3-甲氧基丙酸 (PFMPA) (Perfluoro-3-methoxypropanoic acid (PFMPA)) (CAS No.: 377-73-1)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟 4-甲氧基丁酸 (PFMBA) (Perfluoro-4-methoxybutanoic acid (PFMBA)) (CAS No.: 863090-89-5)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟-3,6-二氧雜庚酸 (NFDHA) (Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)) (CAS No.: 151772-58-6)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
4,8-二氧雜-3H-全氟壬酸及其鹽類 (ADONA and its salts) (4,8-Dioxa-3H-perfluorononanoic acid and its salts (ADONA and its salts)) (CAS No.: 919005-14-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 22 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1H,1H,2H,2H-全氟-1-己醇 (4:2 FTOH) (1H,1H,2H,2H-Perfluoro-1-hexanol (4:2FTOH)) (CAS No.: 2043-47-2)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀及液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS and LC/MS/MS.)	mg/kg	0.4	n.d.	-
2,3,3,3-四氟-2-(七氟丙氧基)丙酸及其鹽類 (HFPO-DA and its salts) (2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid and its salts) (CAS No.: 13252-13-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-全氟己磺酸及其鹽類 (4:2 FTS and its salts) (1H,1H,2H,2H-Perfluorohexanesulfonic acid and its salts (4:2 FTS and its salts)) (CAS No.: 757124-72-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟辛烷磺酰胺乙酸及其鹽類 (FOSAA and its salts) (Perfluorooctane sulfonamidoacetic acid and its salts (FOSAA and its salts)) (CAS No.: 2806-24-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-甲基全氟辛烷磺酰胺乙酸及其鹽類 (N-MeFOSAA and its salts) (N-methylperfluorooctane sulfonamidoacetic acid and its salts (N-MeFOSAA and its salts)) (CAS No.: 2355-31-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-乙基全氟辛烷磺酰胺乙酸及其鹽類 (N-EtFOSAA and its salts) (N-ethylperfluorooctane sulfonamidoacetic acid and its salts (N-EtFOSAA and its salts)) (CAS No.: 2991-50-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 23 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
全氟戊磺酸及其鹽類 (PFPeS and its salts) (Perfluoropentane sulfonic acid and its salts (PFPeS and its salts)) (CAS No.: 2706-91-4 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
3-全氟丙基丙酸及其鹽類 (3:3 FTCA and its salts) (3-Perfluoropropyl propanoic acid and its salts (3:3 FTCA and its salts)) (CAS No.: 356-02-5 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
2-全氟己基乙酸 (6:2 FTCA) (2-Perfluorohexyl ethanoic acid (6:2 FTCA)) (CAS No.: 53826- 12-3)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
3-全氟戊基丙酸及其鹽類 (5:3 FTCA and its salts) (3-Perfluoropentyl propanoic acid and its salts (5:3 FTCA and its salts)) (CAS No.: 914637-49-3 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟(2-乙氧基乙烷)磺酸及其鹽類 (PFEEESA and its salts) (Perfluoro(2- ethoxyethane)sulfonic acid and its salts (PFEEESA and its salts)) (CAS No.: 113507-82- 7 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
9-氯十六氟-3-氧雜壬烷-1-磺酸及其鹽類 (9Cl- PF3ONS and its salts) (9- Chlorohexadecafluoro-3-oxanonane-1- sulfonic acid and its salts (9Cl-PF3ONS and its salts)) (CAS No.: 756426-58-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 24 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
11-氟二十氟-3-氧雜十一烷-1-磺酸及其鹽類 (11Cl-PF3OUdS and its salts) (11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid and its salts (11Cl-PF3OUdS and its salts)) (CAS No.: 763051-92-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
2-(N-乙基全氟辛烷磺醯胺基)丙烯酸乙酯 (EtFOSAC) (2-(N-ethylperfluorooctanesulfamido)ethyl acrylate (EtFOSAC)) (CAS No.: 423-82-5)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
11H-全氟十一烷酸及其鹽類 (11H-PFUnDA and its salts) (11H-Perfluoroundecanoic acid and its salts (11H-PFUnDA and its salts)) (CAS No.: 1765-48-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
五氟丙酸及其鹽類 (PFPrA and its salts) (Pentafluoropropionate acid and its salts (PFPrA and its salts)) (CAS No.: 422-64-0 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸基三氯矽烷 (1H,1H,2H,2H-Perfluorodecyltrichlorosilane) (CAS No.: 78560-44-8)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-全氟癸基三甲氧基矽烷 (1H,1H,2H,2H-Perfluorodecyltrimethoxysilane) (CAS No.: 83048-65-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
2H-全氟-2-癸烯酸 (8:2 FTUCA) (2H-Perfluoro-2-decenoic acid (8:2 FTUCA)) (CAS No.: 70887-84-2)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 25 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
2H-全氟-2-辛烯酸 (6:2 FTUCA) (2H-Perfluoro-2-octenoic acid (6:2 FTUCA)) (CAS No.: 70887-88-6)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
2H-全氟-2-十二烯酸 (10:2 FTUCA) (2H-Perfluoro-2-dodecenoic acid (10:2 FTUCA)) (CAS No.: 70887-94-4)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
2-全氟癸基乙酸 (10:2 FTCA) (2-Perfluorodecyl ethanoic acid (10:2 FTCA)) (CAS No.: 53826-13-4)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
6:6 全氟次磷酸及其鹽類 (6:6 PFPi and its salts) (6:6 Perfluorophosphinic acid and its salts (6:6 PFPi and its salts)) (CAS No.: 40143-77-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
6:8全氟次磷酸 (6:8 PFPi) (6:8 Perfluorophosphinic acid (6:8 PFPi)) (CAS No.: 610800-34-5)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
8:8全氟次磷酸及其鹽類 (8:8 PFPi and its salts) (8:8 Perfluorophosphinic acid and its salts (8:8 PFPi and its salts)) (CAS No.: 40143-79-1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
2-全氟辛基乙基乙酸酯 (8:2 FTOAc) (1H,1H,2H,2H-Heptadecafluorodecyl acetate (8:2 FTOAc)) (CAS No.: 37858-04-1)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 26 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1-十二烷醇, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,1 2-二十二碳氟-, 1-醋酸鹽 (10:2 FTOAc) (1- Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,1 2-heneicosafuoro-, 1-acetate (10:2 FTOAc)) (CAS No.: 37858-05-2)	參考CEN/TS 15968: 2010 · 以氣相層析質 譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟-2,5-二甲基-3,6-二氧雜壬酸及其鹽類 (HFPO-TA and its salts) (Perfluoro-2,5- dimethyl-3,6-dioxanonanoic acid and its salts (HFPO-TA and its salts)) (CAS No.: 13252-14-7 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.2	n.d.	-
五氟乙烷磺酸及其鹽類 (PFEtS and its salts) (Pentafluoroethane sulfonic acid and its salts (PFEtS and its salts)) (CAS No.: 354-88- 1 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
雙[2 - (全氟己基)乙基]磷酸鹽及其鹽類 (6:2 diPAP and its salts) (Bis[2- (perfluorohexyl)ethyl] Phosphate and its salts (6:2 diPAP and its salts)) (CAS No.: 57677-95-9 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
雙三氟甲磺酰亞胺及其鹽類 (TFSI and its salts) (Trifluoromethanesulfonimide and its salts (TFSI and its salts)) (CAS No.: 82113- 65-3 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
三氟甲磺酸及其鹽類 (TFMS and its salts) (Trifluoromethane sulfonic acid and its salts (TFMS and its salts)) (CAS No.: 1493-13-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟丙烷磺酸及其鹽類 (PFPrS and its salts) (Perfluoropropate sulfonic acid and its salts (PFPrS and its salts)) (CAS No.: 423-41-6 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串 聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 27 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
1-全氟庚基乙醇 (7:2s FTOH) (1-pefluoroheptyl ethanol (7:2 secondary) (7:2s FTOH)) (CAS No.: 24015-83-6)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1-碘-1H, 1H, 2H, 2H-全氟己烷 (4:2 FTI) (4:2 Fluorotelomer iodide (4:2 FTI)) (CAS No.: 2043-55-2)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
全氟庚烷-1-亞磺酸及其鹽類 (PFHpSi and its salts) (Perfluoroheptane-1-sulfinic acid and its salts) (PFHpSi and its salts) (CAS No.: 769067-51-8 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
全氟辛基磷酸及其鹽類 (PFOPA and its salts) (Perfluorooctylphosphoic acid and its salts) (PFOPA and its salts) (CAS No.: 40143-78-0 and its salts)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
1H, 1H全氟辛胺 (1H,1H-Perfluorooctylamine) (CAS No.: 307-29-9)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
全氟庚醯胺 (Perfluoroheptanamide) (CAS No.: 2358-22-7)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-
全氟丁醯胺 (Perfluorobutyramide) (CAS No.: 662-50-0)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-
1H, 1H, 2H, 2H-九氟己酯 (4:2 FTA) (1H,1H,2H,2H-Nonafluorohexyl acrylate (4:2 FTA)) (CAS No.: 52591-27-2)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	-

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 28 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
N-甲基-九氟丁磺醯胺 (N-methylperfluoro-1-butanesulfonamide) (CAS No.: 68298-12-4)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
N-乙基-1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-N-(2-羥乙基)-1-己磺醯胺 (N-Ethyl-1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-1-hexanesulfonamide) (CAS No.: 34455-03-3)	參考CEN/TS 15968: 2010 · 以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	-
乙基九氟丁基及其異構體 (Ethyl perfluoroisobutyl ether and its isomers) (CAS No.: 163702-05-4 and others)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	10	n.d.	-
1,1,1,2,2,3,4,5,5,5-十氟戊烷 (1,1,1,2,2,3,4,5,5,5-decafluoro-Pentane) (CAS No.: 138495-42-8)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	10	n.d.	-
三氟甲苯 (Trifluorotoluene) (CAS No.: 98-08-8)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
對氯三氟甲苯 (1-Chloro-4-(Trifluoromethyl)Benzene) (CAS No.: 98-56-6)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	1	n.d.	-
1H,1H,2H,2H-全氟癸基甲基二氯矽烷 (1H,1H,2H,2H-Perfluorodecylmethylchlorosilane) (CAS No.: 3102-79-2)	參考CEN/TS 15968: 2010 · 以氣相層析質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by GC/MS.)	mg/kg	0.1	n.d.	-

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 29 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 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)
7. (#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.)
8. 除非另有說明 · 參照ILAC-G8:09/2019決定規則 · 採用簡單允收規則之二分法( $w=0$ )進行符合性判定 ; 根據此規則 · 符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ( $w=0$ ) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 30 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 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 (Group Name)	物質名稱 (Substance Name)	CAS No.
TFA, 及其鹽 (TFA, its salts)	三氟乙酸 (Trifluoroacetic acid) (TFA)	76-05-1
	三氟乙酸鈉 (TFA-Na) Sodium trifluoroacetate (TFA-Na)	2923-18-4
	三氟乙酸銻 (TFA-Tl) Thallium(III) trifluoroacetate (TFA-Tl)	23586-53-0
	三氟乙酸鋰 (TFA-Li) Lithium Trifluoroacetate (TFA-Li)	2923-17-3
	三氟乙酸銀 (TFA-Ag) Silver trifluoroacetate (TFA-Ag)	2966-50-9
	三氟乙酸銫 (TFA-Cs) Cesium Trifluoroacetate (TFA-Cs)	21907-50-6
	三氟乙酸鉀 (TFA-K) Potassium trifluoroacetate (TFA-K)	2923-16-2
	三氟乙酸銨 (TFA-NH4) Ammoniumtrifluoroacetate (TFA-NH4)	3336-58-1
	三氟乙酸汞 (TFA-Hg) Mercury(II) trifluoroacetate (TFA-Hg)	13257-51-7
	三氟乙酸鈀 (TFA-Pd) Palladium(II) trifluoroacetate (TFA-Pd)	42196-31-6
	三氟乙酸鹽 (TFA anion) Trifluoroacetate / Trifluoroacetic acid anion (TFA anion)	14477-72-6
	三氟乙酸二甲基[(三氟乙醯基)氧基]鎢 Dimethyl[(trifluoroacetyl)oxy]sulfanium trifluoroacetate	57738-66-6
	三氟乙酸鋁(III) (TFA-Al) Aluminium tris(trifluoroacetate) (TFA-Al)	36554-89-9

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 31 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
TFA, 及其鹽 (TFA, its salts)	三氟乙酸鋇(II) (TFA-Ba) Barium bis(trifluoroacetate) (TFA-Ba)	60884-92-6
	三氟乙酸銲(III) (TFA-Er) Erbium tris(trifluoroacetate) (TFA-Er)	70236-99-6
	三氟乙酸銲(III) (TFA-In) Indium trifluoroacetate (TFA-In)	36554-90-2
	三氟乙酸鏷(III) (TFA-La) Lanthanum tris(trifluoroacetate) (TFA-La)	70236-92-9
	三氟乙酸鎳(II) (TFA-Ni) Nickel(2+) trifluoroacetate (TFA-Ni)	16083-14-0
	三氟乙酸鉛(II) (TFA-Pb) Lead(II) trifluoroacetate (TFA-Pb)	4146-73-0
	三氟乙酸銠(II) (TFA-Rh) Acetic acid, trifluoro-, rhodium(2+) salt (TFA-Rh)	72654-51-4
	三氟乙酸錫(III) (TFA-Tm) Thulium tris(trifluoroacetate) (TFA-Tm)	70237-00-2
	三氟乙酸鐿(III) (TFA-Yb) Ytterbium(3+) tris(trifluoroacetate) (TFA-Yb)	87863-62-5
	三氟乙酸鋅(II) (TFA-Zn) Zinc bis(trifluoroacetate) (TFA-Zn)	21907-47-1
	三氟乙酸鈿(II) (TFA-Ru) Ruthenium(II) 2,2,2-trifluoroacetate (TFA-Ru)	61612-84-8
	三氟乙酸鎂(II) (TFA-Mg) Magnesium 2,2,2-trifluoroacetate (TFA-Mg)	123333-72-2
	三氟乙酸銅(II) (TFA-Cu) Copper(2+) trifluoroacetate (TFA-Cu)	123333-88-0
	PFBA, 及其鹽 (PFBA, its salts)	全氟丁酸 (Perfluorobutane acid) (PFBA)
全氟丁酸銨 (PFBA-NH <sub>4</sub> ) Ammonium perfluorobutanoate (PFBA-NH <sub>4</sub> )		10495-86-0
全氟丁酸鈉 (PFBA-Na) Sodium perfluorobutanoate (PFBA-Na)		2218-54-4
全氟丁酸鉀 (PFBA-K) Potassium heptafluorobutanoate (PFBA-K)		2966-54-3
全氟丁酸銀 (PFBA-Ag) Silver perfluorobutanoate (PFBA-Ag)		3794-64-7
全氟丁酸鋰 (PFBA-Li) Lithium perfluorobutanoate (PFBA-Li)		4146-76-3

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 32 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFBA, 及其鹽 (PFBA, its salts)	全氟丁酸哌嗪 (1:1) Heptafluorobutanoic acid-piperazine (1:1)	375-04-2
	全氟丁酸鹽 Perfluorobutanoate (anion)	45048-62-2
PFBS, 及其鹽&衍生物 (PFBS, its salts & derivatives)	全氟丁磺酸 (Perfluorobutane sulfonate) (PFBS)	375-73-5
	全氟丁基磺酸鈉 (PFBS-Na) 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, sodium salt (1:1) (PFBS-Na)	60453-92-1
	全氟丁基磺酸鋰 (PFBS-Li) Lithium perfluorobutanesulfonate (PFBS-Li)	131651-65-5
	全氟丁基磺酸鎂 (PFBS-Mg) Magnesium perfluorobutanesulfonate (PFBS-Mg)	507453-86-3
	全氟丁基磺酸鉀 (PFBS-K) Perfluorobutane Sulfonate K-salt (PFBS-K)	29420-49-3
	全氟丁基磺酸氟 (PFBS-F) Perfluorobutane sulfonyl fluoride (PFBS-F)	375-72-4
	全氟丁基磺酸四乙基銨 (PFBS-N(CH <sub>3</sub> CH <sub>2</sub> ) <sub>4</sub> ) Tetraethylammonium perfluorobutanesulfonate (PFBS-N(CH <sub>3</sub> CH <sub>2</sub> ) <sub>4</sub> )	25628-08-4
	全氟丁基磺酸三苯基銨 (TPS-PFBS) Triphenylsulfanium perfluorobutane sulfonate (TPS-PFBS)	144317-44-2
	全氟丁基磺酸二甲基(苯基)銨 Dimethyl(phenyl)sulfanium perfluorobutane sulfonate	220133-51-7
	全氟丁基磺酸四丁基磷 Tetrabutyl-phosphonium nonafluoro-butane-1-sulfonate	220689-12-3
	全氟丁基磺酸嗎啶 Morpholinium perfluorobutanesulfonate	503155-89-3
	全氟丁基磺酸銨 (PFBS-NH <sub>4</sub> ) Ammonium 1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulphonate (PFBS-NH <sub>4</sub> )	68259-10-9
	全氟丁基磺酸水合物 Nonafluorobutanesulfonic acidHydrate	59933-66-3
	全氟丁基磺酸氯 (PFBS-Cl) Nonafluoro-1-butanesulfonyl chloride (PFBS-Cl)	2991-84-6
	全氟-1-丁磺酸雙(4-叔丁基苯基)銨鎩 (PFBS-I(C <sub>6</sub> H <sub>4</sub> ) <sub>2</sub> (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> ) Bis(4-tert-butylphenyl)iodonium perfluoro-1-butanesulfonate (PFBS-I(C <sub>6</sub> H <sub>4</sub> ) <sub>2</sub> (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> )	194999-85-4

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 33 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFBS, 及其鹽&衍生物 (PFBS, its salts & derivatives)	1,1,2,2,3,4,4,4-一氟丁烷-1-磺酸與2,2'-亞氨基二乙醇的化合物 (1:1) (PFBS-NH(C <sub>2</sub> H <sub>5</sub> O) <sub>2</sub> ) 1,1,2,2,3,4,4,4-nonafluorobutane-1-sulphonic acid, compound with 2,2'-iminodiethanol (1:1) (PFBS-NH(C <sub>2</sub> H <sub>5</sub> O) <sub>2</sub> )	70225-18-2
	1-(4-丁氧基-1-萘基)四氫噻吩九氟丁烷-1-磺酸鹽 (PFBS-SC <sub>18</sub> H <sub>23</sub> O) 1-(4-butoxy-1-naphthyl)tetrahydrothiophenium nonafluorobutane-1-sulfonate (PFBS-SC <sub>18</sub> H <sub>23</sub> O)	209482-18-8
	全氟丁基磺酸四丁基銨 ((PFBS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )) Tetrabutylammonium nonafluorobutanesulfonate ((PFBS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> ))	108427-52-7
	全氟丁基磺酸二苯碘 ((PFBS-I(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> )) Diphenyliodonium nonafluorobutane-1-sulfonate((PFBS-I(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> ))	194999-82-1
	全氟丁基磺酸三(4-叔丁基苯基)鎊 Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	241806-75-7
	全氟丁基磺酸(4-環己基苯基)(二苯基)鎊 Sulfonium, (4-cyclohexylphenyl)diphenyl-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	425670-64-0
	全氟丁基磺酸1-(1-甲基-1H-吲哚-3-基)硫醇-1-鎊 Thiophenium, tetrahydro-1-(1-methyl-1H-indol-3-yl)-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	867373-18-0
	全氟丁基磺酸1-乙基-3-甲基吡啶鎊 Pyridinium, 1-ethyl-3-methyl-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	1015420-87-7
	全氟丁基磺酸1-甲基-3-辛基咪唑鎊 1H-Imidazolium, 1-methyl-3-octyl-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	905972-83-0
	全氟丁基磺酸1-己基-3-甲基咪唑鎊 1H-Imidazolium, 3-hexyl-1-methyl-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	1001557-05-6
	全氟丁基磺酸N,N-二甲基-N-(丙-2-基)丙-2-胺 2-Propanaminium, N,N-dimethyl-N-(1-methylethyl)-, 1,1,2,2,3,4,4,4-nonafluoro-1-butanefulfonate (1:1)	374571-81-0

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 34 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFBS, 及其鹽&衍生物 (PFBS, its salts & derivatives)	全氟丁基磺酸[4-(2-叔丁氧基-2-氧代乙氧基)苯基](二苯基) (1:1) Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]diphenyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	857285-80-4
	全氟丁基磺酸N,N-二丁基-N-甲基丁烷-1-胺 (1:1) 1-Butanaminium, N,N-dibutyl-N-methyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	124472-66-8
	全氟丁基磺酸鋅 (2:1) (PFBS-Zn) 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, zinc salt (2:1) (PFBS-Zn)	502457-69-4
	全氟丁基磺酸N,N,N-三丙基戊烷 (1:1) 1-Pentanaminium, N,N,N-tripropyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	56773-55-8
	全氟丁基磺酸四甲基銨鹽 (PFBS-N(CH <sub>3</sub> ) <sub>4</sub> ) Perfluorobutanesulfonic acid tetramethylammonium salt (PFBS-N(CH <sub>3</sub> ) <sub>4</sub> )	25628-17-5
	全氟丁基磺酸酐 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, 1,1'-anhydride	36913-91-4
	全氟丁基磺酸鹽 Perfluorobutane sulfonate (anion)	45187-15-3
	1-(4-丁氧基-1-萘基)四氫噻吩鎘-1,1,2,2,3,3,4,4,4-九氟-1-丁磺酸鹽 1-(4-butoxy-1-naphthalenyl)tetrahydrothiophenium - 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate	EC No. 468-770-4
	1-丁磺酸 · 1,1,2,2,3,3,4,4,4-九氟-化合物與 N,N-二乙基乙胺 (1:1) 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, compd. with N,N-diethylethanamine (1:1)	182059-38-7
	1-辛銨 · N-(2-羥乙基)-N,N-二甲基-與1,1,2,2,3,3,4,4,4-九氟-1-丁磺酸鹽 (1:1) 1-Octanaminium, N-(2-hydroxyethyl)-N,N-dimethyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	334529-55-4
	1-十六烷基-1,1,2,2,3,3,4,4,4-九氟-1-丁磺酸吡啶鎘 (1:1) Pyridinium, 1-hexadecyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	334529-62-3

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

# 測試報告

# Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 35 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFBS, 及其鹽&衍生物 (PFBS, its salts & derivatives)	1-丁基-1,1,2,2,3,3,4,4,4-九氟-1-丁磺酸吡啶鎂鹽 (1:1) Pyridinium, 1-butyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	334529-64-5
	1-辛胺 · N-甲基-N,N-二辛基- · 1,1,2,2,3,3,4,4,4-九氟-1-丁磺酸鹽 (1:1) 1-Octanaminium, N-methyl-N,N-dioctyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	495417-51-1
	三(4-甲基苯基)鎂全氟丁磺酸鹽 Sulfonium, tris(4-methylphenyl)-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	722538-68-3
PFPA, 及其鹽 (PFPA, its salts)	全氟戊酸 (Perfluoropentane acid) (PFPA)	2706-90-3
	全氟戊酸鈉 (PFPA-Na) Sodium perfluoropentanoate (PFPA-Na)	2706-89-0
	全氟戊酸鉀 (PFPA-K) Potassium perfluoropentanoate (PFPA-K)	336-23-2
	全氟戊酸銨 (PFPA-NH <sub>4</sub> ) Ammonium perfluoropentanoate (PFPA-NH <sub>4</sub> )	68259-11-0
	全氟戊酸鋰 (PFPA-Li) Lithium perfluoropentanoate (PFPA-Li)	198482-22-3
	全氟戊酸銀 (PFPA-Ag) Silver perfluoropentanoate (PFPA-Ag)	2795-30-4
	全氟戊酸鹽 Perfluoropentanoate (anion)	45167-47-3
	全氟戊酸與苯甲基硫代氨基甲酸酯 (1:1) (PFPeA-C <sub>8</sub> H <sub>10</sub> N <sub>2</sub> S) Pentanoic acid, 2,2,3,3,4,4,5,5,5-nonafluoro-, compd. with phenylmethyl carbamimidothioate (1:1) (PFPeA-C <sub>8</sub> H <sub>10</sub> N <sub>2</sub> S)	64808-55-5
	全氟戊酸酐 (PFPeAA) Nonafluoropentanoic anhydrid (PFPeAA)	308-28-1
PFHxA, 及其鹽&衍生物 (PFHxA, its salts & derivatives)	全氟己酸 (Perfluorohexane acid) (PFHxA)	307-24-4
	全氟己酸銨 (PFHxA-NH <sub>4</sub> ) Ammonium perfluorohexanoate (PFHxA-NH <sub>4</sub> )	21615-47-4
	全氟己酸鈉 (PFHxA-Na) Sodium perfluorohexanoate (PFHxA-Na)	2923-26-4
	全氟己酸鉀 (PFHxA-K) Potassium perfluorohexanoate (PFHxA-K)	3109-94-2
	全氟己酸氟 (PFHxA-F) Perfluorohexanoyl fluoride (PFHxA-F)	355-38-4

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 36 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHxA, 及其鹽&衍生物 (PFHxA, its salts & derivatives)	全氟己酸銀 (PFHxA-Ag) Silver perfluorohexanoate (PFHxA-Ag)	336-02-7
	全氟己酸鋰 (PFHxA-Li) Lithium perfluorohexanoate (PFHxA-Li)	90430-61-8
	全氟己酸酐 Perfluorohexanoic anhydride	308-13-4
	全氟己酸哌嗪 (2:1) Hexanoic acid, undecafluoro-, compd. with piperazine (2:1) (8Cl,9Cl)	423-47-2
	全氟己酸鹽 Perfluorohexanoate (anion)	92612-52-7
	全氟己酰氯 (PFHxA-Cl) Perfluorohexanoyl chloride (PFHxA-Cl)	335-53-5
	全氟己酸與1-己胺 (1:1) (PFHxA-C <sub>6</sub> H <sub>15</sub> N) Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6-undecafluoro-, compd. with 1-hexanamine (1:1) (PFHxA-C <sub>6</sub> H <sub>15</sub> N)	565225-91-4
	全氟己酸與1-苯基哌嗪 (1:1) (PFHxA-C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> ) Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6-undecafluoro-, compd. with 1-phenylpiperazine (1:1) (PFHxA-C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> )	985-60-4
6:2 FTS, 及其鹽 (6:2 FTS, its salts)	1H,1H,2H,2H-全氟辛磺酸 (1H,1H,2H,2H- Perfluorooctanesulphonic acid) (6:2 FTS)	27619-97-2
	1H, 1H, 2H, 2H-全氟辛烷磺酸鈉 (6:2 FTS-Na) Sodium 1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS-Na)	27619-94-9
	1H, 1H, 2H, 2H-全氟辛烷磺酸鉀 (6:2 FTS-K) Potassium 1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS-K)	59587-38-1
	1H, 1H, 2H, 2H-全氟辛烷磺酸銨 (6:2 FTS-NH <sub>4</sub> ) Ammonium 1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS-NH <sub>4</sub> )	59587-39-2
	1H, 1H, 2H, 2H-全氟辛烷磺酸銨銀 (6:2 FTS-Ba) 1-Octanesulfonic acid, 3,3,4,4,5,5,6,6,7,7,8,8,8- tridecafluoro-, barium salt (2:1) (6:2 FTS-Ba)	1807944-82-6
	1H,1H,2H,2H-全氟辛磺酸鹽 (6:2 FTS(anion)) 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctane-1-sulfonate (6:2 FTS(anion))	425670-75-3

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 37 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
6:2 monoPAP, 及其鹽 (6:2 monoPAP, its salts)	單[2-(全氟乙烷)乙基]磷酸鹽 (Mono[2-(perfluorohexyl)ethyl] Phosphate) (6:2 monoPAP)	57678-01-0
	單[2-(全氟乙烷)乙基]磷酸二銨 (6:2 monoPAP-NH <sub>4</sub> NH <sub>4</sub> ) Diammonium 6:2 fluorotelomer phosphate monoester (6:2 monoPAP-NH <sub>4</sub> NH <sub>4</sub> )	1000852-37-8
6:2 FTPA, 及其鹽 (6:2 FTPA, its salts)	1H,1H,2H,2H-全氟辛烷磷酸 (1H,1H,2H,2H-Perfluorooctane phosphonic acid) (6:2 FTPA)	252237-40-4
	((全氟己基)乙基)膦酸鈉 (Cheminox FHP 2OH-Na(PFHEPA-Na)) Sodium hydrogen ((perfluorohexyl)ethyl)phosphonate (Cheminox FHP 2OH-Na(PFHEPA-Na))	1189052-95-6
PFHxS, 及其鹽&衍生物 (PFHxS, its salts & derivatives)	全氟己基磺酸 (Perfluorohexane sulfonate) (PFHxS)	355-46-4
	全氟己基磺酸鈉 (PFHxS-Na) Perfluorohexanesulfonate Na-salt (PFHxS-Na)	82382-12-5
	全氟己基磺酸鉀 (PFHxS-K) Perfluorohexanesulfonate K-salt (PFHxS-K)	3871-99-6
	全氟己基磺酸銨 (PFHxS-NH <sub>4</sub> ) Ammonium perfluorohexanesulfonate (PFHxS-NH <sub>4</sub> )	68259-08-5
	全氟己基磺酸鋰 (PFHxS-Li) Perfluorohexanesulfonate Li-salt (PFHxS-Li)	55120-77-9
	全氟己基磺酸鋅 (PFHxS-Zn) Perfluorohexanesulfonate Zn-salt (PFHxS-Zn)	70136-72-0
	全氟己基磺醯氟 (PFHxS-F) Perfluorohexane sulphonyl fluoride (PFHxS-F)	423-50-7
	三苯基(苯甲基)磷-, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Phosphonium, triphenyl(phenylmethyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1000597-52-3
	N,N,N-三丁基-1-丁銨與十三氟-1-己烷磺酸的鹽 N,N,N-tributylbutan-1-aminium tridecafluorohexane-1-sulfonate	108427-54-9
	N,N,N-三乙基乙銨與十三氟-1-己烷磺酸的鹽 (1:1) N,N,N-triethylethanaminium tridecafluorohexane-1-sulfonate (1:1)	108427-55-0

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 38 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHxS, 及其鹽&衍生物 (PFHxS, its salts & derivatives)	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸與吡咯烷的化合物 (1:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. With pyrrolidine (1:1)	1187817-57-7
	N-[4-[[4-(二乙氨基)苯基][4-(乙基氨基)-1-萘基]亞甲基]-2,5-環己二-1-基]-N-乙基乙銻, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Ethanaminium, N-[4-[[4-(diethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-ethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1310480-24-0
	N-[4-[[4-(二甲氨基)苯基][4-(乙基氨基)-1-萘基]亞甲基]-2,5-環己二-1-基]-N-甲基甲銻, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1310480-27-3
	N-[4-[[4-(二甲氨基)苯基][4-(苯基氨基)-1-萘基]亞甲基]-2,5-環己二-1-基]-N-甲基甲銻, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(phenylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1310480-28-4
	β-環糊精, 與1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸離子(1-)的化合物 (1:1) Beta-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-) (1:1)	1329995-45-0
	γ-環糊精, 與1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸離子(1-)的化合物 (1:1) Gamma-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-) (1:1)	1329995-69-8
	三苯基銻, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Sulfonium, triphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	144116-10-9

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 39 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHxS, 及其鹽&衍生物 (PFHxS, its salts & derivatives)	喹啉鎊,1-(羧甲基)-4-[2-[4-[4-(2,2-二苯基乙烯基)苯基]-1,2,3,3a,4,8b-六氫環戊[b]吡啶-7-基]乙烯基]-,1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Quinolinium, 1-(carboxymethyl)-4-[2-[4-[4-(2,2-diphenylethenyl)phenyl]-1,2,3,3a,4,8b-hexahydrocyclopent[b]indol-7-yl]ethenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1462414-59-0
	二苯基碘鎊,1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Iodonium, diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	153443-35-7
	N,N,N-三甲基甲銨與1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸的鹽 (1:1) Methanaminium, N,N,N-trimethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1)	189274-31-5
	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸與2-甲基-2-丙胺的化合物 (1:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd.with 2-methyl-2-propanamine (1:1)	202189-84-2
	雙[4-(1,1-二甲基乙基)苯基]碘鎊, 1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	213740-81-9
	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鎂鹽 (9Cl) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, gallium salt (9Cl)	341035-71-0
	雙(4-甲基苯基)苯基磺鎊,1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Sulfonium, bis(4-methylphenyl)phenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	341548-85-4
	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸釷(3+)鹽 (3:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, scandium(3+) salt (3:1) (PFHxS-Sc)	350836-93-0
	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸釷(3+)鹽 (3:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, neodymium(3+) salt (3:1) (PFHxS-Nd)	41184-65-0

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 40 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHxS, 及其鹽&衍生物 (PFHxS, its salts & derivatives)	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鈮(3+)鹽 (3:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, yttrium(3+) salt (3:1) (PFHxS-Y)	41242-12-0
	(硫代二-4,1-亞苯基)雙[二苯基硫鹽與1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸 (1:2) Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:2)	421555-73-9
	雙[4-(1,1-二甲基丙基)苯基]碘鎗鹽與1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸 Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid	421555-74-0
	三[4-(1,1-二甲基乙基)苯基]硫-, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	425670-70-8
	十三氟己烷磺酸與二乙醇胺的化合物 Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-16-0
	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸與N·N-二乙基乙胺的化合物 (1:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with N,N-diethylethanamine (1:1)	72033-41-1
	雙[(1,1-二甲基乙基)苯基]碘鎗鹽-與1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸 (1:1) (9Cl) Iodonium, bis[(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (9Cl)	866621-50-3
	(4-甲基苯基)二苯基硫-, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Sulfonium, (4-methylphenyl)diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	910606-39-2
	[4-[(2-甲基-1-氧-2-丙烯-1-基)氧基]苯基]二苯基硫-, 1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Sulfonium, [4-[(2-methyl-1-oxo-2-propen-1-yl)oxy]phenyl]diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	911027-68-4

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 41 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHxS, 及其鹽&衍生物 (PFHxS, its salts & derivatives)	1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸銫鹽 (1:1) 1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, cesium salt (1:1) (PFHxS-CsH)	92011-17-1
	二苯並[k,n][1,4,7,10,13]四氧噻吩基環戊二烯鎗,19-[4-(1,1-二甲基乙基)苯基]-6,7,9,10,12,13-六氫-,1,1,2,2,3,3,4,4,5,5,6,6,6-十三氟-1-己烷磺酸鹽 (1:1) Dibenzo[k,n][1,4,7,10,13]tetraoxathiacyclopentadecinium, 19-[4-(1,1-dimethylethyl)phenyl]-6,7,9,10,12,13-hexahydro-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	928049-42-7
	全氟己基磺酸氯 (PFHxS-Cl) Perfluorohexylsulfonyl chloride (PFHxS-Cl)	55591-23-6
	PFHxS-磺酸酯聚合物 Sulfonium, [4-[(2-methyl-1-oxo-2-propenyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1), polymer with 2-ethyltricyclo[3.3.1.1 <sup>3,7</sup> ]dec-2-yl 2-methyl-2-propenoate, 3-hydroxytricyclo[3.3.1.1 <sup>3,7</sup> ]dec-1-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate	911027-69-5
	全氟己基磺酸鹽 Perfluorohexane sulfonate (anion)	108427-53-8
	十三氟己烷-1-磺酸四丁基鎗 (PFHxS-P (C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> ) Tetrabutylphosphonium tridecafluorohexane-1-sulfonate (PFHxS-P (C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )	2310194-12-6
	EtFHxSAA, 及其鹽 (EtFHxSAA, its salts)	N-乙基-N-[(十三氟己基)磺醯基]甘氨酸 (Glycine, N-ethyl-N-[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]) (EtFHxSAA)
N-乙基-N-[(十三氟己基)磺醯基]甘氨酸鉀 (EtFHxSAA-K) Potassium N-ethyl-n-[(tridecafluorohexyl)sulfonyl]glycinate (EtFHxSAA-K)		67584-53-6
N-乙基-N-[(十三氟己基)磺醯基]甘氨酸鈉 (EtFHxSAA-Na) Sodium N-ethyl-N-((tridecafluorohexyl)sulphonyl)glycinate (EtFHxSAA-Na)		68555-70-4
PFHpA, 及其鹽 (PFHpA, its salts)	全氟庚酸 (Perfluoroheptane acid) (PFHpA)	375-85-9
	全氟庚酸鈉 (PFHpA-Na) Sodium perfluoroheptanoate (PFHpA-Na)	20109-59-5

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 42 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHpA, 及其鹽 (PFHpA, its salts)	全氟庚酸鉀 (PFHpA-K) Potassium perfluoroheptanoate (PFHpA-K)	21049-36-5
	全氟庚酸銨 (PFHpA-NH <sub>4</sub> ) Ammonium perfluoroheptanoate (PFHpA-NH <sub>4</sub> )	6130-43-4
	全氟庚酸銫 (PFHpA-Cs) Cesium perfluoroheptanoate (PFHpA-Cs)	171198-24-6
	全氟庚酸銀 (PFHpA-Ag) Silver perfluoroheptanoate (PFHpA-Ag)	424-05-5
	全氟庚酸鋰 (PFHpA-Li) Lithium perfluoroheptanoate (PFHpA-Li)	60871-90-1
	全氟庚酸鹽 Perfluoroheptanoate (anion)	120885-29-2
HPFHpA, 及其鹽 (HPFHpA, its salts)	7H-十二氟庚酸 (7H-Dodecafluoroheptane acid)	1546-95-8
	7H-十二氟庚酸鈉 (HPFHpA-Na) Sodium 2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoroheptanoate (HPFHpA-Na)	2264-25-7
	7H-十二氟庚酸銨 (HPFHpA-NH <sub>4</sub> ) Ammonium 2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoroheptanoate (HPFHpA-NH <sub>4</sub> )	376-34-1
	全氟庚酸鹽 (HPFHpA(anion)) 7H-Perfluoroheptanoate (HPFHpA(anion))	69681-35-2
PFHpS, 及其鹽 (PFHpS, its salts)	全氟庚基磺酸 (Perfluoroheptane sulfonate) (PFHpS)	375-92-8
	全氟庚基磺酸鈉 (PFHpS-Na) Perfluoroheptanesulfonate Na-salt (PFHpS-Na)	21934-50-9
	全氟庚基磺酸鉀 (PFHpS-K) Potassium perfluoroheptanesulfonate (PFHpS-K)	60270-55-5
	全氟庚基磺酸銨 (PFHpS-NH <sub>4</sub> ) Ammonium perfluoroheptanesulfonate (PFHpS-NH <sub>4</sub> )	68259-07-4
	全氟庚基磺酸鋰 (PFHpS-Li) Lithium perfluoroheptanesulfonate (PFHpS-Li)	117806-54-9
	全氟庚基磺酸-雙(2-羥乙基)銨 (1:1) 1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	70225-15-9
	全氟庚基磺酸鹽 Perfluoroheptane sulfonate (anion)	146689-46-5

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 43 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFHpS, 及其鹽 (PFHpS, its salts)	全氟庚烷磺酸三乙銨 Triethylammonium perfluoroheptane sulfonate	72033-40-0
	全氟庚烷磺酸四乙銨 Tetraethylammonium perfluoroheptane sulfonate	439863-97-5
	1-庚磺酸 · 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-十五氟酸酐 (9CI) (PFHpSA) 1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, anhydride (9CI) (PFHpSA)	140429-92-1
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	全氟辛烷磺酸 (Perfluorooctane sulfonates) (PFOS)	1763-23-1
	全氟辛基磺酸鉀 (PFOS-K) Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	全氟辛基磺酸鋰 (PFOS-Li) Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	全氟辛基磺酸銨 (PFOS-NH <sub>4</sub> ) Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH <sub>4</sub> )	29081-56-9
	全氟辛基磺酸二乙醇銨 (PFOS-NH(C <sub>2</sub> H <sub>4</sub> OH) <sub>2</sub> ) Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(C <sub>2</sub> H <sub>4</sub> OH) <sub>2</sub> )	70225-14-8
	全氟辛基磺酸四乙基銨 (PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> ) Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> )	56773-42-3
	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA) N-decyl-N,N-dimethyldecyl-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	全氟辛基磺酸四丁基銨 (PFOS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> ) Tetrabutylammonium perfluorooctanesulfonate (PFOS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )	111873-33-7
	全氟辛基磺酰氟 (POSF) Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	全氟辛基磺酸鎂 (PFOS-Mg) Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
全氟辛基磺酸鈉 (PFOS-Na) Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0	

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

# 測試報告

# Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 44 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	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-heptafluorooctanesulfonate	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 <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> ) 1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-, compd. with N,N-diethylethanamine (1:1) (PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> )	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 <sub>3</sub> ) <sub>4</sub> ) Methanaminium, N,N,N-trimethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1) (PFOS-N(CH <sub>3</sub> ) <sub>4</sub> )	56773-44-5
	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 <sub>3</sub> H <sub>7</sub> ) <sub>3</sub> (C <sub>5</sub> H <sub>11</sub> )) 1-Pentanaminium, N,N,N-tripropyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1) (PFOS-N(C <sub>3</sub> H <sub>7</sub> ) <sub>3</sub> (C <sub>5</sub> H <sub>11</sub> ))	56773-56-9
	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 <sub>4</sub> H <sub>9</sub> ) <sub>3</sub> (CH <sub>3</sub> )) 1-Butanaminium, N,N-dibutyl-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1) (PFOS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub> (CH <sub>3</sub> ))	124472-68-0
	碘鎊 · 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) Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1)	213740-80-8
	二苯基鎊(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-heptafluoro-1-octanesulfonate (1:1)	258341-99-0
	吡啶鎊 · 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-heptafluoro-1-octanesulfonate (1:1)	334529-63-4

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

# 測試報告

# Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 45 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	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-heptafluoro-1- octanesulfonate (1:1)	773895-92-4
	全氟辛烷磺酸四丁基磷 (PFOS-P(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> ) Tetrabutylphosphonium perfluorooctane sulfonate (PFOS- P(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )	2185049-59-4
	全氟辛烷磺酸二乙胺鹽 (PFOS-C <sub>4</sub> H <sub>11</sub> N) Perfluorooctanesulfonic acid diethylamine salt (PFOS- C <sub>4</sub> H <sub>11</sub> N)	2205029-08-7
	庚基二甲基{2-[(2-甲基丙-2-烯酰基)氧基]乙基}全氟辛烷磺酸氮 鎂鹽 (PFOS-C <sub>15</sub> H <sub>30</sub> NO <sub>2</sub> ) Heptyldimethyl{2-[(2-methylprop-2- enoyl)oxy]ethyl}azanium perfluorooctanesulfonate (PFOS- C <sub>15</sub> H <sub>30</sub> NO <sub>2</sub> )	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- heptafluoro-, 1,1'-anhydride (PFOSAN)	423-92-7
PFOSA, 及其鹽 (PFOSA, its salts)	全氟辛基磺醯胺 (Perfluorooctanesulfonamide) (PFOSA)	754-91-6
	全氟辛基磺醯胺鋰鹽 (1:1) (PFOSA-Li) Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)	76752-79-9
	全氟辛基磺醯胺鈉鹽 (1:1) (PFOSA-Na) Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na)	76752-78-8
	全氟辛基磺醯胺鉀鹽 (1:1) (PFOSA-K) Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K)	76752-70-0
	全氟辛基磺醯胺銨鹽 (1:1) (PFOSA-NH <sub>4</sub> ) Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA- NH <sub>4</sub> )	76752-72-2
	全氟辛基磺醯胺三乙胺的化合物(1:1) (PFOSA-C <sub>6</sub> H <sub>15</sub> N) heptafluorooctane-1-sulphonamide, compound with triethylamine(1:1) (PFOSA-C <sub>6</sub> H <sub>15</sub> N)	76752-82-4
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	全氟辛酸 (Perfluorooctanoic acid) (PFOA)	335-67-1
	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 46 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

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)	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanoate (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
	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 <sub>4</sub> H <sub>10</sub> N) Pentadecafluorooctanoic acid--piperazine (2/1)PFOA-NH(C <sub>4</sub> H <sub>10</sub> 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 Tetramethylammoniumperfluorooctanoat	32609-65-7
	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

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

# 測試報告

# Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 47 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

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)	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 <sub>2</sub> O) <sub>2</sub> ) 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 <sub>2</sub> O) <sub>2</sub> )	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 <sub>2</sub> H <sub>7</sub> 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 <sub>2</sub> H <sub>7</sub> N)	1376936-03-6
	十五氟辛酸化合物與吡啶 (1:1) (9CI) (PFOA-C <sub>5</sub> H <sub>5</sub> N) Octanoic acid, pentadecafluoro-, compd. with pyridine (1:1) (9CI) (PFOA-C <sub>5</sub> H <sub>5</sub> N)	95658-47-2
	十五氟辛酸-1-苯基哌嗪(1:1) (PFOA-C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> ) Pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA-C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> )	1514-68-7
	1-辛酸 · 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 <sub>11</sub> H <sub>26</sub> 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 <sub>11</sub> H <sub>26</sub> N)	927835-01-6
8:2 monoPAP, 及其鹽 (8:2 monoPAP, its salts)	單-[2-(全氟辛基)乙烷]磷酸酯 (Mono-[2-(perfluorooctyl)ethyl]phosphate) (8:2 monoPAP)	57678-03-2
	8:2氟調聚物磷酸二銨鹽 8:2 Fluorotelomer diammonium phosphate	93857-44-4
	8:2氟調聚物磷酸鈉鹽 Disodium 1H,1H,2H,2H-perfluorodecylphosphate	438237-75-3
	雙[2-(全氟辛基)乙基]磷酸銨鹽 Ammonium bis[2-(perfluorohexyl)ethyl] phosphate	1764-95-0
	單[2-(全氟辛基)乙基]磷酸銨鹽 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctanol phosphate ammonium salt	92401-44-0
	單[2-(全氟辛基)乙基]磷酸鹽單鈉鹽 Sodium 1H,1H,2H,2H-perfluorooctylphosphate	144965-22-0
	單[2-(全氟辛基)乙基]磷酸單鉀鹽 Monopotassium monoperfluorohexyl ethylphosphate	150033-28-6
	單[2-(全氟辛基)乙基]磷酸氫銨鹽 Ammonium 2-(perfluorohexyl)ethyl hydrogen phosphate	2353-52-8

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

# 測試報告

# Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 48 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
8:2 FTS, 及其鹽 (8:2 FTS, its salts)	1H,1H,2H,2H-全氟癸磺酸 (1H,1H,2H,2H-Perfluorodecanesulfonic acid) (8:2 FTS)	39108-34-4
	1H, 1H, 2H, 2H-全氟癸磺酸鉀 (8:2 FTS-K) 1H,1H,2H,2H-Perfluorodencane sulfonate acid Potassium salt (8:2 FTS-K)	438237-73-1
	1H, 1H, 2H, 2H-全氟癸磺酸銨 (8:2 FTS-NH <sub>4</sub> ) 1H,1H,2H,2H-Perfluorodencane sulfonate acid Ammonium salt (8:2 FTS-NH <sub>4</sub> )	149724-40-3
	1H, 1H, 2H, 2H-全氟癸磺酸鈉 (8:2 FTS-Na) 1H,1H,2H,2H-Perfluorodencane sulfonate acid Sodium salt (8:2 FTS-Na)	27619-96-1
	1H,1H,2H,2H-全氟癸磺酸鹽 (8:2 FTS(anion)) 8: 2 Fluorotelomer sulfonate (anion) (8:2 FTS(anion))	481071-78-7
H2PFDA, 及其鹽 (H2PFDA, its salts)	2H,2H-全氟癸酸 (2H,2H-Perfluorodecane acid) (H2PFDA)	27854-31-5
	四丁基磷2H,2H-全氟癸酸酯 Tetrabutylphosphonium 2H,2H-Perfluorodecanoate	882489-14-7
4HPFUnA, 及其鹽 (4HPFUnA, its salts)	2H,2H,3H,3H-全氟癸酸 (2H,2H,3H,3H-Perfluoroundecanoic Acid) (4HPFUnA)	34598-33-9
	2H,2H,3H,3H-全氟癸酸鉀 (H4PFUnA-K) Potassium 2H,2H,3H,3H-Perfluoroundecanoate (H4PFUnA-K)	83310-58-1
	2H,2H,3H,3H-全氟癸酸鋰 (H4PFUnA-Li) Lithium 3-(perfluorooctyl)propanoate (H4PFUnA-Li)	67304-23-8
8:2diPAP, 及其鹽 (8:2diPAP, its salts)	雙(1H,1H,2H,2H-全氟癸基)磷酸酯 (Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate) (8:2diPAP)	678-41-1
	雙(1H,1H,2H,2H-全氟癸基)磷酸酯鈉 (8:2diPAP-Na) Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na)	114519-85-6
	雙(2-羥乙基)雙((全氟辛基)乙基)磷酸氫銨 Bis(2-hydroxyethyl)ammonium bis((perfluorooctyl)ethyl) hydrogen phosphate	57677-97-1
	雙[2-(全氟辛基)乙基]磷酸銨鹽 (8:2diPAP-NH <sub>4</sub> ) Bis[2-(perfluorooctyl)ethyl] phosphate ammonium salt (8:2diPAP-NH <sub>4</sub> )	93776-20-6

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 49 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
8:2diPAP, 及其鹽 (8:2diPAP, its salts)	8:2 氟調聚物磷酸二酯離子 8:2 Fluorotelomer phosphate diester ion	1411713-91-1
PFNA, 及其鹽 (PFNA, its salts)	全氟壬酸 (Perfluorononan-1-oic acid) (PFNA)	375-95-1
	全氟壬酸鈉 (PFNA-Na) Perfluorononanoate Na-salt (PFNA-Na)	21049-39-8
	全氟壬酸銨 (APFN) Perfluorononanoate ammonium salt (APFN)	4149-60-4
	全氟壬酸鉀 (PFNA-K) Potassium perfluorononanoate (PFNA-K)	21049-38-7
	全氟壬酸鋰 (PFNA-Li) Perfluorononanoate Li-Salt (PFNA-Li)	60871-92-3
	全氟壬酸銀 (PFNA-Ag) Silver perfluorononanoate (PFNA-Ag)	7358-16-9
	全氟壬酸甲烷銨 (PFNA-NH <sub>3</sub> (CH <sub>3</sub> )) Methanaminium perfluorononanoate (PFNA-NH <sub>3</sub> (CH <sub>3</sub> ))	77032-23-6
	全氟壬酸-N-乙基乙胺 (1:1) (PFNA-NH <sub>2</sub> (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> ) Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-heptadecafluoro-, compd. with N-ethylethanamine (1:1) PFNA-NH <sub>2</sub> (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	77032-27-0
	全氟壬酸-N-甲基甲胺 (1:1) (PFNA-NH <sub>2</sub> (CH <sub>3</sub> ) <sub>2</sub> ) Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-heptadecafluoro-, compd. with N-methylmethanamine (1:1) (PFNA-NH <sub>2</sub> (CH <sub>3</sub> ) <sub>2</sub> )	77032-24-7
	全氟壬酸-N·N-二乙基乙醯胺 (1:1) (9CI) (PFNA-NH(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> ) Nonanoic acid, heptadecafluoro-, compd. with N,N-diethylethanamine (1:1) (9CI) (PFNA-NH(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> )	327176-80-7
	全氟壬酸-哌啶 (1:1) (9CI) (PFNA-NH <sub>2</sub> (C <sub>5</sub> H <sub>10</sub> )) Nonanoic acid, heptadecafluoro-, compd. with piperidine (1:1) (9CI) (PFNA-NH <sub>2</sub> (C <sub>5</sub> H <sub>10</sub> ))	95682-66-9
	全氟壬酸-苯胺 (1:1) (PFNA-NH <sub>2</sub> (C <sub>6</sub> H <sub>5</sub> )) Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-heptadecafluoro-, compd. with benzenamine (1:1) (PFNA-NH <sub>2</sub> (C <sub>6</sub> H <sub>5</sub> ))	95682-67-0
	全氟壬酸-環己胺 (1:1) (9CI) ((PFNA-NH <sub>2</sub> (C <sub>6</sub> H <sub>11</sub> )) Nonanoic acid, heptadecafluoro-, compd. with cyclohexanamine (1:1) (9CI) (PFNA-NH <sub>2</sub> (C <sub>6</sub> H <sub>11</sub> ))	328531-06-2

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 50 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFNA, 及其鹽 (PFNA, its salts)	全氟壬酸鹽 Perfluorononanoate (anion)	72007-68-2
	4-[(6-甲氧基-3-噁嗪基)氮磺酰基]苯銨十七氟壬酸酯 (PFNA-C <sub>11</sub> H <sub>12</sub> N <sub>4</sub> O <sub>3</sub> S) 4-[(6-Methoxy-3-pyridazinyl)sulfamoyl]anilinium heptadecafluorononanoate (PFNA-C <sub>11</sub> H <sub>12</sub> N <sub>4</sub> O <sub>3</sub> S)	298703-33-0
	全氟壬酸酐 (PFNAA) Perfluorononanoic anhydride (PFNAA)	228407-54-3
PFDA, 及其鹽 (PFDA, its salts)	全氟癸酸 (Perfluorodecane acid) (PFDA)	335-76-2
	全氟癸酸鈉 (PFDA-Na) Perfluorodecanoate Na-salt (PFDA-Na)	3830-45-3
	全氟癸酸銨 (APFDA) Perfluorodecanoate ammonium salt (APFDA)	3108-42-7
	全氟癸酸鉀 (PFDA-K*) Potassium perfluorodecanoate (PFDA-K*)	51604-85-4
	全氟癸酸銀 (PFDA-Ag) Silver perfluorodecanoate (PFDA-Ag)	5784-82-7
	全氟癸酸鋰 (PFDA-Li) Lithium perfluorodecanoate (PFDA-Li)	84743-32-8
	全氟癸酸鹽 Perfluorodecanoate (anion)	73829-36-4
	全氟癸酸酐 (PFDA) Perfluorodecanoic anhydride (PFDA)	942199-24-8
PFUnDA, 及其鹽 (PFUnDA, its salts)	全氟十一烷酸 (Perfluoroundecanoic acid) (PFUnDA)	2058-94-8
	全氟十一烷酸銨 (PFUnDA-NH <sub>4</sub> ) Ammonium perfluoroundecanoate (PFUnDA-NH <sub>4</sub> )	4234-23-5
	全氟十一烷酸鈉 (PFUnDA-Na) Perfluoroundecanoic acid sodium salt (PFUnDA-Na)	60871-96-7
	全氟十一烷酸鉀 (PFUnDA-K) Potassium perfluoroundecanoate (PFUnDA-K)	30377-53-8
	全氟十一烷酸鈣 (PFUnDA-Ca) Calcium perfluoroundecanoate (PFUnDA-Ca)	97163-17-2
	全氟十一烷酸鹽 Perfluoroundecanoate (anion)	196859-54-8
	全氟十二烷酸 (Perfluorododecanoic acid) (PFDoDA) Ammonium perfluorododecanoate (APFDoDA)	307-55-1 3793-74-6

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 51 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.	
PFDoDA, 及其鹽 (PFDoDA, its salts)	全氟十二烷酸鹽 Perfluorododecanoate (anion)	171978-95-3	
	全氟癸烷磺酸 (Perfluorodecane sulfonate) (PFDS)	335-77-3	
PFDS, 及其鹽 (PFDS, its salts)	全氟癸烷磺酸鈉 (PFDS-Na) Perfluorodecanesulfonate Na-salt (PFDS-Na)	2806-15-7	
	全氟癸烷磺酸鉀 (PFDS-K) Perfluorodecanesulfonate K-salt (PFDS-K)	2806-16-8	
	全氟癸基磺酸銨 (PFDS-NH <sub>4</sub> ) Perfluoroaliphatic decan-sulfonate salt of NH <sub>4</sub> (PFDS-NH <sub>4</sub> )	67906-42-7	
	全氟癸基磺酸鹽 Perfluorodecane sulfonate (anion)	126105-34-8	
	全氟癸磺酸酐 (PFDSA) Perfluorodecane sulfonic anhydride (PFDSA)	51667-62-0	
	PFTrDA, 及其鹽 (PFTrDA, its salts)	全氟十三烷酸 (Pentacosafluorotridecanoic acid) (PFTrDA)	72629-94-8
		全氟十三烷酸銨 (PFTrDA-NH <sub>4</sub> ) Ammonium perfluorotridecanoate (PFTrDA-NH <sub>4</sub> )	4288-72-6
全氟十三烷酸鈉 (PFTrDA-Na) Sodium perfluorotridecanoate (PFTrDA-Na)		60872-01-7	
全氟十三烷酸鹽 Perfluorotridecanoate (anion)		862374-87-6	
PFTDA, 及其鹽 (PFTDA, its salts)	全氟十四烷酸 (Perfluorotetradecanoic acid) (PFTDA)	376-06-7	
	全氟十四烷酸鹽 Perfluorotetradecanoate (anion)	365971-87-5	
10:2 FTS, 及其鹽 (10:2 FTS, its salts)	1H,1H,2H,2H-全氟十二烷磺酸 (1H,1H,2H,2H-Perfluorododecane sulfonic acid) (10:2 FTS)	120226-60-0	
	1H,1H,2H,2H-全氟十二烷磺酸鈉鹽 (10:2 FTS-Na) 1H,1H,2H,2H-Perfluorododecane sulfonic acid Sodium Salt (10:2 FTS-Na)	108026-35-3	
PFNS, 及其鹽 (PFNS, its salts)	全氟壬烷磺酸 (Perfluorononane sulfonic acid) (PFNS)	68259-12-1	
	全氟壬烷磺酸鈉 (PFNS-Na*) Sodium perfluoro-1-nonesulfonate (PFNS-Na*)	98789-57-2	
	全氟壬烷磺酸銨 (PFNS-NH <sub>4</sub> ) Ammonium nonadecafluorononanesulphonate (PFNS-NH <sub>4</sub> )	17202-41-4	
	全氟壬烷磺酸鉀 (PFNS-K*) Potassium perfluorononanesulfonate (PFNS-K*)	29359-39-5	
	全氟壬烷磺酸鹽 Perfluorononane sulfonate (anion)	474511-07-4	

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 52 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFUnDS, 及其鹽 (PFUnDS, its salts)	全氟十一烷磺酸 (Perfluoroundecane sulfonic acid) (PFUnDS)	749786-16-1
	全氟十一烷磺酸鹽 Perfluoroundecanesulfonate (anion)	441296-91-9
PFDoDS, 及其鹽 (PFDoDS, its salts)	全氟十二烷磺酸 (Perfluorododecane sulfonic acid) (PFDoDS)	79780-39-5
	全氟十二烷磺酸鈉 (PFDoDS-Na*) Sodium perfluoro-1-dodecanesulfonate (PFDoDS-Na*)	1260224-54-1
	全氟十二烷磺酸鉀 (PFDoDS-K) Potassium perfluorododecanesulfonate (PFDoDS-K)	85187-17-3
	全氟十二烷磺酸鹽 Perfluorododecane sulfonate (anion)	343629-43-6
PFTrDS, 及其鹽 (PFTrDS, its salts)	全氟十三烷磺酸 (Perfluorotridecane sulfonic acid) (PFTrDS)	791563-89-8
	全氟十三烷磺酸鈉 (PFTrDS-Na*) Sodium perfluoro-1-tridecanesulfonate (PFTrDS-Na*)	174675-49-1
10:2 diPAP, 及其鹽 (10:2 diPAP, its salts)	雙[2-(全氟癸基)乙基]磷酸鹽 (10:2 Fluortelomerphosphatediester) (10:2 diPAP)	1895-26-7
	雙[3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-二十一氟十二烷基]磷酸氫鹽化合物與 2,2'-亞氨基二乙醇 (1:1) (10:2 diPAP-C <sub>4</sub> H <sub>11</sub> O <sub>2</sub> ) bis[3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-henicosafuorododecyl] hydrogen phosphate, compound with 2,2'-iminodiethanol (1:1) (10:2 diPAP-C <sub>4</sub> H <sub>11</sub> O <sub>2</sub> )	57677-98-2
10:2 monoPAP, 及其鹽 (10:2 monoPAP, its salts)	單[2-(全氟癸基)乙基]磷酸酯 (10:2 Fluortelomerphosphatemonoester) (10:2 monoPAP)	57678-05-4
	單[2-(全氟癸基)乙基]磷酸雙銨鹽 10:2 Fluortelomer diammonium dihydrogen phosphate	93857-45-5
PFPeDA, 及其鹽 (PFPeDA, its salts)	全氟十五烷酸 (Perfluoropentadecanoic acid) (PFPeDA, C15)	141074-63-7
	全氟十五烷酸鹽 (PFPeDA (anion)) Nonacosafuoropentadecanoate (PFPeDA (anion))	1214264-29-5
PFHxDA, 及其鹽 (PFHxDA, its salts)	全氟十六烷酸 (Perfluorohexadecanoic acid) (PFHxDA, C16)	67905-19-5
	全氟十六烷酸鹽 (PFHxDA (anion)) Hentriacontafuorohexadecanoate anion (PFHxDA (anion))	1214264-30-8
PFODA, 及其鹽 (PFODA, its salts)	全氟十八烷酸 (Perfluorooctadecanoic acid) (PFODA, C18))	16517-11-6
	全氟十八烷酸鹽 (PFODA (anion)) Perfluorooctadecanoate anion (PFODA (anion))	798556-82-8

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 53 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
ADONA, 及其鹽 (ADONA, its salts)	4,8-二氧雜-3H-全氟壬酸 (4,8-Dioxa-3H-perfluorononanoic acid) (ADONA)	919005-14-4
	4,8-二氧雜-3H-全氟壬酸銨 (ADONA-NH <sub>4</sub> ) Ammonium 4,8-dioxa-3H-perfluorononanoate (ADONA-NH <sub>4</sub> )	958445-44-8
	4,8-二氧雜-3H-全氟壬酸鈉 (ADONA-Na) Sodium 4,8-dioxa-3H-perfluorononanoate (ADONA-Na)	2250081-67-3
HFPO-DA, 及其鹽&衍生物 (HFPO-DA, its salts & derivatives)	2,3,3,3-四氟-2-(七氟丙氧基)丙酸 (2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid) (HFPO-DA)	13252-13-6
	丙酸 · 2,3,3,3-四氟-2-(1,1,2,2,3,3,3-七氟丙氧基)-(2R)- Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-(2R)-	75579-39-4
	丙酸 · 2,3,3,3-四氟-2-(1,1,2,2,3,3,3-七氟丙氧基)-(2S)- Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-(2S)-	75579-40-7
	2,3,3,3-四氟-2-(七氟丙氧基)丙酸鉀 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, K- salts	67118-55-2
	2,3,3,3-四氟-2-(七氟丙氧基)丙酸銨 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, ammonium salts	62037-80-3
	丙酸 · 2,3,3,3-四氟-2-(1,1,2,2,3,3,3-七氟丙氧基)-鈉鹽 (1:1) Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-, sodium salt (1:1)	67963-75-1
	丙酸 · 2,3,3,3-四氟-2-(1,1,2,2,3,3,3-七氟丙氧基)-離子(1-) Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-, ion(1-)	122499-17-6
	2,3,3,3-四氟-2-(七氟丙氧基)丙酸化合物與 N-丙基-1-丙胺 (1:1) Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-, compd. with N-propyl-1-propanamine (1:1)	165951-17-7
	2,3,3,3-四氟-2-(七氟丙氧基)丙酸化合物與 N,N-二乙基乙胺 (1:1) (9CI) Propanoic acid, 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-, compd. with N,N-diethylethanamine (1:1) (9CI)	165951-18-8

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

# 測試報告

# Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 54 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
HFPO-DA, 及其鹽&衍生物 (HFPO-DA, its salts & derivatives)	4-[(6-甲氧基-3-噁嗪基)氨基磺酰]2,3,3,3-四氟-(七氟丙氧基)丙酸苯銨 4-[(6-Methoxy-3-pyridazinyl)sulfamoyl]anilinium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoate	298703-31-8
	2,3,3,3-四氟-2-(七氟丙氧基)丙酸酰基氟化物 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, its acyl halides	2062-98-8
	苯甲酸·2,3,6-三碘-(1-甲基-3-哌啶基)甲酯化合物與 2,3,3,3-四氟-2-(1,1,2,2,3,3,3-七氟丙氧基)丙酸酯 (1:1) (HFPO-C <sub>14</sub> H <sub>16</sub> I <sub>3</sub> NO <sub>2</sub> ) Benzoic acid, 2,3,6-triiodo-, (1-methyl-3-piperidinyl)methyl ester, compd. with 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoro propoxy)propanoate (1:1) (HFPO-C <sub>14</sub> H <sub>16</sub> I <sub>3</sub> NO <sub>2</sub> )	2412106-69-3
4:2 FTS, 及其鹽 (4:2 FTS, its salts)	1H,1H,2H,2H-全氟己磺酸 (1H,1H,2H,2H-Perfluorohexanesulfonic acid) (4:2 FTS)	757124-72-4
	1H,1H,2H,2H-全氟己烷磺酸鈉 1H,1H,2H,2H-perfluorohexane sulfonate acid sodium salt	27619-93-8
	1H,1H,2H,2H-全氟己磺酸鹽 (4:2FTS(anion)) 4: 2 Fluorotelomer sulfonate (4:2FTS(anion))	414911-30-1
FOSAA, 及其鹽 (FOSAA, its salts)	全氟辛烷磺酰胺乙酸 (Perfluorooctane sulfonamidoacetic acid) (FOSAA)	2806-24-8
	全氟辛烷磺酰胺乙酸鹽 (FOSAA(anion)) N-[(Perfluorooctyl)sulfonyl]glycinate (FOSAA(anion))	909405-47-6
	全氟辛烷磺酰胺乙酸鉀 (FOSAA-K) N-[(Perfluorooctyl)sulfonyl]glycine potassium salt (1:1) (FOSAA-K)	75260-69-4
	全氟辛烷磺酰胺乙酸鈉 (FOSAA-Na) N-[(Perfluorooctyl)sulfonyl]glycine sodium salt (1:1) (FOSAA-Na)	115716-87-5
N-MeFOSAA, 及其鹽 (N-MeFOSAA, its salts)	N-甲基全氟辛烷磺酰胺乙酸 (N-methylperfluorooctane sulfonamidoacetic acid) (N-MeFOSAA)	2355-31-9
	N-甲基全氟辛烷磺酰胺乙酸鹽 (N-Me-FOSAA(anion)) 2-(N-Methylperfluorooctanesulfonamido)acetate (N-Me-FOSAA(anion))	909405-48-7
	N-甲基全氟辛烷磺酰胺乙酸鉀 (N-Me-FOSAA-K) Potassium N-((heptadecafluorooctyl)sulphonyl)-N-methylglycinate (N-Me-FOSAA-K)	70281-93-5

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 55 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
N-EtFOSAA, 及其鹽 (N-EtFOSAA, its salts)	N-乙基全氟辛烷磺酰胺乙酸 (N-ethylperfluorooctane sulfonamidoacetic) (N-EtFOSAA)	2991-50-6
	N-乙基全氟辛烷磺酰胺乙酸鉀 (N-Et-FOSAA-K) Potassium N-ethyl-N- ((heptadecafluorooctyl)sulphonyl)glycinate (N-Et-FOSAA-K)	2991-51-7
	N-乙基全氟辛烷磺酰胺乙酸鹽 (N-Et-FOSAA(anion)) 2-(N-Ethyl-perfluorooctanesulfonamido)acetate (N-Et-FOSAA(anion))	909405-49-8
	N-乙基全氟辛烷磺酰胺乙酸氫 (N-Et-FOSAA-NH4) Ammonium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-NH4)	2991-52-8
	N-乙基全氟辛烷磺酰胺乙酸鈉 (N-Et-FOSAA-Na) Sodium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-Na)	3871-50-9
PFPeS, 及其鹽 (PFPeS, its salts)	全氟戊磺酸 (Perfluoropentane sulfonic acid) (PFPeS)	2706-91-4
	全氟戊磺酸鈉 (PFPeS-Na*) Sodium perfluoro-1-pentanesulfonate (PFPeS-Na*)	630402-22-1
	全氟戊磺酸鉀 (PFPeS-K) Potassium perfluoropentane-1-sulphonate (PFPeS-K)	3872-25-1
	全氟戊磺酸銨 (PFPeS-NH <sub>4</sub> *) Ammonium perfluoropentanesulfonate (PFPeS-NH <sub>4</sub> *)	68259-09-6
	全氟戊磺酸-雙(2-羥乙基)銨 Bis(2-hydroxyethyl) ammonium 1,1,2,2,3,3,4,4,5,5,5-undecafluoropentane-1-sulphonate	70225-17-1
	全氟戊磺酸鋰 (PFPeS-Li) Undecafluoropentane-1-sulfonic acid lithium salt (PFPeS-Li)	1046864-81-6
	全氟戊磺酸鹽 Perfluoropentane sulfonate (anion)	175905-36-9
	全氟戊磺酸三乙銨 Triethylammonium perfluoropentane sulfonate	72033-42-2
	全氟戊磺酸酐 (PFPeSA) Perfluoropentane sulfonic anhydride (PFPeSA)	161877-72-1
3:3 FTCA, 及其鹽 (3:3 FTCA, its salts)	3-全氟丙基丙酸 (3:3 FTCA) 3-Perfluoropropyl propanoic acid (3:3 FTCA)	356-02-5
	4,4,5,6,6,6-七氟己酸鹽 (3:3 FTCA(anion)) 4,4,5,5,6,6,6-Heptafluorohexanoate (3:3 FTCA(anion))	1169706-83-5

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 56 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
5:3 FTCA, 及其鹽 (5:3 FTCA, its salts)	3-全氟戊基丙酸 (5:3 FTCA) 3-Perfluoropentyl propanoic acid (5:3 FTCA)	914637-49-3
	2H · 2H · 3H · 3H全氟辛酸鹽 (5:3 FTCA(anion)) 2H,2H,3H,3H-Perfluorooctanoate (5:3 FTCA(anion))	1799325-94-2
PFEESA, 及其鹽 (PFEESA, its salts)	全氟(2-乙氧基乙烷)磺酸 (PFEESA) Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7
	全氟(2-乙氧基乙烷)磺酸鉀 (PFEESA-K) Potassium perfluoro(2-ethoxyethane) sulfonate (PFEESA-K)	117205-07-9
	全氟(2-乙氧基乙烷)磺酸鈉 (PFEESA-Na) Sodium perfluoro(2-ethoxyethane) sulfonate (PFEESA-Na)	113507-87-2
9Cl-PF <sub>3</sub> ONS, 及其鹽 (9Cl-PF <sub>3</sub> ONS, its salts)	9-氯十六氟-3-氧雜壬烷-1-磺酸 (9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid) (9Cl-PF <sub>3</sub> ONS)	756426-58-1
	9-氯十六氟-3-氧雜壬烷-1-磺酸鉀 (9Cl-PF <sub>3</sub> ONS-K) Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF <sub>3</sub> ONS-K)	73606-19-6
	9-氯十六氟-3-氧雜壬烷-1-磺酸銨 (9Cl-PF <sub>3</sub> ONS-NH <sub>4</sub> ) Ammonium perfluoro-2-[(6-chlorohexyl)oxy]ethane-1-sulfonate (9Cl-PF <sub>3</sub> ONS-NH <sub>4</sub> )	1383434-28-3
11Cl-PF <sub>3</sub> OUdS, 及其鹽 (11Cl-PF <sub>3</sub> OUdS, its salts)	11-氯二十氟-3-氧雜十一烷-1-磺酸 (11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid) (11Cl-PF <sub>3</sub> OUdS)	763051-92-9
	11-氯二十氟-3-氧雜十一烷-1-磺酸鉀 (11Cl-PF <sub>3</sub> OUdS-K) Potassium 11-chloroeicosafuoro-3-oxaundecane-1-sulfonate (11Cl-PF <sub>3</sub> OUdS-K)	83329-89-9
11H-PFUnDA, 及其鹽 (11H-PFUnDA, its salts)	11H-全氟十一烷酸 (11H-Perfluoroundecanoic acid) (11H-PFUnDA)	1765-48-6
	11H-全氟十一烷酸鉀 (11H-PFUnDA-K) potassium 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-icosafuoroundecanoate (11H-PFUnDA-K)	307-71-1
	11H-全氟十一烷酸銨 (11H-PFUnDA-NH <sub>4</sub> ) Ammonium 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-icosafuoroundecanoate (11H-PFUnDA-NH <sub>4</sub> )	5081-02-7
	11H-全氟十一烷酸鹽 (11H-PFUnDA(anion)) 11-H-Perfluoroundecanoate (11H-PFUnDA(anion))	69681-37-4

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



# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 57 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFPrA, 及其鹽 (PFPrA, its salts)	五氟丙酸 (Pentafluoropropionate acid) (PFPrA)	422-64-0
	五氟丙酸鈉 (PFPrA-Na) Sodium pentafluoropropionate (PFPrA-Na)	378-77-8
	五氟丙酸銀 (PFPrA-Ag) Silver pentafluoropropionate (PFPrA-Ag)	509-09-1
	五氟丙酸鉀 (PFPrA-K) Potassium pentafluoropropionate (PFPrA-K)	378-76-7
	五氟丙酸銨 (PFPrA-NH <sub>4</sub> ) Ammonium pentafluoropropionate (PFPrA-NH <sub>4</sub> )	2730-58-7
	6:6 PFPI, 及其鹽 (6:6 PFPI, its salts)	6:6 全氟次磷酸 (6:6 Perfluorophosphinic acid) (6:6 PFPI)
6:6 全氟次磷酸鈉 (6:6 PFPI-Na) Sodium bis(perfluorohexyl)phosphinate (6:6 PFPI-Na)		70609-44-8
6:6 全氟次磷酸鐳 (6:6 PFPI-Yb) Bis(perfluorohexyl) phosphinic acid ytterbium(3+) salt (6:6 PFPI-Yb)		500776-72-7
6:6 全氟次磷酸銲 (6:6 PFPI-Er) Bis(perfluorohexyl) phosphinic acid erbium(3+) salt (6:6 PFPI-Er)		500776-73-8
8:8 PFPI, 及其鹽 (8:8 PFPI, its salts)	8:8全氟次磷酸 (8:8 Perfluorophosphinic acid) (8:8 PFPI)	40143-79-1
	8:8 全氟次磷酸鈉 (8:8 PFPI-Na) Sodium bis(perfluorooctyl)phosphinate (8:8 PFPI-Na)	500776-69-2
	8:8全氟次磷酸銲 (8:8 PFPI-Er) Bis(perfluorooctyl) phosphinic acid erbium(3+) salt (8:8 PFPI-Er)	500776-70-5
	8:8全氟次磷酸鐳 (8:8 PFPI-Yb) Bis(perfluorooctyl) phosphinic acid ytterbium(3+) salt (8:8 PFPI-Yb)	500776-71-6
HFPO-TA, 及其鹽 (HFPO-TA, its salts)	全氟-2,5-二甲基-3,6-二氧雜壬酸 (Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid) (HFPO-TA)	13252-14-7
	全氟-2,5-二甲基-3,6-二氧雜壬酸鉀 (HFPO-TA-K) Potassium perfluoro(2-(2-propoxypropoxy)propanoate) (HFPO-TA-K)	67118-57-4
	全氟-2,5-二甲基-3,6-二氧雜壬酸鈉 (HFPO-TA-Na) Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid, sodium salt (HFPO-TA-Na)	67963-76-2

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 58 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
HFPO-TA, 及其鹽 (HFPO-TA, its salts)	全氟-2,5-二甲基-3,6-二氧雜王酸銨 (HFPO-TA-NH <sub>4</sub> ) 2,3,3,3-Tetrafluoro-2-[1,1,2,3,3,3-hexafluoro-2-(heptafluoropropoxy)propoxy]propanoic acid--ammonia (HFPO-TA-NH <sub>4</sub> )	13043-05-5
	全氟-2,5-二甲基-3,6-二氧雜王酸氟 (HFPO-TA-F) Hexafluoropropene oxide trimer (HFPO-TA-F)	2641-34-1
PFEtS, 及其鹽 (PFEtS, its salts)	五氟乙烷磺酸 (Pentafluoroethane sulfonic acid) (PFEtS)	354-88-1
	全氟乙烷磺酸鹽 (PFEtS (anion)) Pentafluoroethanesulfonate (PFEtS (anion))	108410-37-3
	全氟乙烷磺酸鉀 (PFEtS-K) Potassium pentafluoroethane-1-sulfonate (PFEtS-K)	2837-92-5
6:2 diPAP, 及其鹽 (6:2 diPAP, its salts)	雙[2 - (全氟己基)乙基]磷酸鹽 (Bis[2-(perfluorohexyl)ethyl] Phosphate) (6:2 diPAP)	57677-95-9
	雙[2 - (全氟己基)乙基]磷酸鈉 (6:2 diPAP-Na) Sodium bis[2-(perfluorohexyl)ethyl] phosphate (6:2 diPAP-Na)	407582-79-0
	雙[2 - (全氟己基)乙基]磷酸鹽 (6:2 diPAP(anion)) Bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphate ion (6:2 diPAP(anion))	667465-18-1
TFSI, 及其鹽 (TFSI, its salts)	雙三氟甲烷磺酰亞胺 (Trifluoromethanesulfonimide) (TFSI)	82113-65-3
	吡咯烷鎊 · 1-丁基-1-甲基- · 與 1,1,1-三氟-N-[(三氟甲基)磺酰基]甲磺酰胺的鹽 (1:1) Pyrrolidinium, 1-butyl-1-methyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1)	223437-11-4
	三丁基甲基雙(三氟甲磺酰)亞胺銨 Tributylmethyl Ammonium Bis(trifluoromethanesulfonyl) Imide	405514-94-5
	雙三氟甲烷磺酰亞胺鋰 (TFSI-Li) Lithium bis((trifluoromethyl)sulfonyl)azanide (TFSI-Li)	90076-65-6
	1-癸基-3-甲基咪唑雙(三氟甲烷)磺酰亞胺 1-Decyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)imide	433337-23-6

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 59 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
TFMS, 及其鹽 (TFMS, its salts)	三氟甲磺酸 (Trifluoromethane sulfonic acid) (TFMS)	1493-13-6
	三氟甲磺酸鈉鹽 (TFMS-Na) Trifluoromethane sulfonic acid Sodium salt (TFMS-Na)	2926-30-9
	三氟甲磺酸銀鹽 (TFMS-Ag) Silver trifluoromethanesulfonate (TFMS-Ag)	2923-28-6
	三氟甲磺酸鋅鹽 (TFMS-Zn) Zinc trifluoromethanesulfonate (TFMS-Zn)	54010-75-2
	三氟甲磺酸鈦鹽 (TFMS-Sc) Scandium trifluoromethanesulfonate (TFMS-Sc)	144026-79-9
	三氟甲磺酸酐 Trifluoromethanesulfonic anhydride	358-23-6
	三氟甲磺酸鋰鹽 (TFMS-Li) Lithium trifluoromethanesulfonate (TFMS-Li)	33454-82-9
	三氟甲磺酸銅鹽 (TFMS-Cu) Copper(II) trifluoromethanesulfonate (TFMS-Cu)	34946-82-2
	三氟甲磺酸鋇鹽 (TFMS-Ba) Barium trifluoromethanesulfonate (TFMS-Ba)	2794-60-7
	三氟甲磺酸鈾鹽 (TFMS-Ce) Cerium(IV) trifluoromethanesulfonate (TFMS-Ce)	107792-63-2
	三氟甲磺酸鎂鹽 (TFMS-Mg) Magnesium trifluoromethanesulfonate (TFMS-Mg)	60871-83-2
	三氟甲磺酸鉀鹽 (TFMS-K) Potassium trifluoromethanesulfonate (TFMS-K)	2926-27-4
	三氟甲磺酸鎳鹽 (TFMS-Ni) Nickel(II) Trifluoromethanesulfonate (TFMS-Ni)	60871-84-3
	三氟甲磺酸錫鹽 (TFMS-Sn) Tin(II) trifluoromethanesulfonate (TFMS-Sn)	62086-04-8
	三氟甲磺酸釔鹽 (TFMS-Y) Yttrium(III) trifluoromethanesulfonate (TFMS-Y)	52093-30-8
	三氟甲磺酸鐵鹽 (TFMS-Fe) Iron(III) trifluoromethanesulfonate (TFMS-Fe)	63295-48-7
	三氟甲磺酸鈾鹽 (TFMS-Ce) Cerium(III) Trifluoromethanesulfonate (TFMS-Ce)	76089-77-5
	三氟甲磺酸四丁基銨 Tetrabutylammonium trifluoromethanesulfonate	35895-70-6
	三氟甲磺酸甲基三辛基銨 Methyltrioctylammonium trifluoromethanesulfonate	121107-18-4

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 60 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
TFMS, 及其鹽 (TFMS, its salts)	咪唑三氟甲磺酸酯 Imidazole trifluoromethanesulfonate	29727-06-8
	三氟乙酰基三氟甲磺酸酯 Trifluoroacetyl Trifluoromethanesulfonate	68602-57-3
	三氟甲磺酸鏷 ( III ) (TFMS-La) Lanthanum(III) trifluoromethanesulfonate (TFMS-La)	52093-26-2
	三氟甲磺酸銦 ( III ) (TFMS-In) Indium(III) trifluoromethanesulfonate (TFMS-In)	128008-30-0
	三氟甲磺酸釷 ( III ) (TFMS-Sm) Samarium(III) trifluoromethanesulfonate (TFMS-Sm)	52093-28-4
	三氟甲磺酸鐿 ( III ) (TFMS-Yb) Ytterbium(III) trifluoromethanesulfonate (TFMS-Yb)	54761-04-5
	三氟甲磺酸鎂 ( III ) (TFMS-Tm) Thulium(III) trifluoromethanesulfonate (TFMS-Tm)	141478-68-4
	三氟甲磺酸四乙基銨 Tetraethylammonium trifluoromethanesulfonate	35895-69-3
	三氟甲磺酸1-氟-3,5-二氯吡啶 1-Fluoro-3,5-dichloropyridinium triflate	107264-06-2
	三氟甲磺酸三乙胺鹽 Triethylamine salt of trifluoromethanesulfonic acid	646-58-2
	三苯基三氟甲磺酸酐 Triphenylphosphonium anhydride triflate	72450-51-2
	N, N-二乙基-6-(二乙氨基)-9-(2-(甲氧羰基)苯基)-3H-噁-3-亞基三氟甲磺酸銨 N,N-Diethyl-6-(diethylamino)-9-(2-(methoxycarbonyl)phenyl)-3H-xanthene-3-ylideneammonium trifluoromethanesulfonate	120611-30-5
	三氟甲磺酸二苯銨 Diphenylammonium Trifluoromethanesulfonate	164411-06-7
	1-(3-氨基氮雜環丁烷-1-基)丙-2-烯-1-酮, 三氟甲磺酸 1-(3-aminoazetidin-1-yl)prop-2-en-1-one, trifluoromethanesulfonic acid	2060047-56-3
	三氟甲磺酸胍 Guanidine trifluoromethanesulfonic acid	153756-25-3
三氟甲磺酸-1-乙基-1H-咪唑 ( 1/1 ) Trifluoromethanesulfonic acid--1-ethyl-1H-imidazole (1/1)	501693-46-5	

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 61 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
TFMS, 及其鹽 (TFMS, its salts)	鈦 ( 3+ ) (OC-6-22)-與三氟甲磺酸 ( 1:3 ) 的鹽 Ruthenium(3+), (OC-6-22)-, salt with trifluoromethanesulfonic acid (1:3)	74468-24-9
	O-新戊醯基脛胺三氟甲磺酸酯 O-Pivaloylhydroxylamine trifluoromethanesulfonate	1293990-73-4
	三氟甲磺酰氯 Trifluoromethanesulfonyl chloride	421-83-0
	( 2-吡啶甲基 ) 磺酰氯三氟甲磺酸酯 (2-Pyridylmethyl)sulfonyl chloride triflate	882564-09-2
	三氟甲磺酰溴 Trifluoromethanesulfonyl bromide	15458-53-4
	三氟甲磺酸汞(II) (TFMS-Hg) Mercury(II) trifluoromethanesulfonate (TFMS-Hg)	49540-00-3
	三氟甲磺酸鐳(III) (TFMS-Dy) Dysprosium(III) tris(trifluoromethanesulfonate) (TFMS-Dy)	139177-62-1
	三氟甲磺酸錳(II) (TFMS-Mn) Manganese bis(trifluoromethanesulfonate) (TFMS-Mn)	55120-76-8
	三氟甲磺酸五胺銻(III) Pentaammine(trifluoromethanesulfonato)osmium(III) triflate	83781-30-0
	三氟甲磺酸鑰(III) (TFMS-Lu) Lutetium(III) trifluoromethanesulfonate (TFMS-Lu)	126857-69-0
	三氟甲磺酸鐳(III) (TFMS-Tb) Terbium(III) trifluoromethanesulfonate (TFMS-Tb)	148980-31-8
	三氟甲磺酸釹(III) (TFMS-Nd) Neodymium(III) trifluoromethanesulfonate (TFMS-Nd)	34622-08-7
	三氟甲磺酸銨 (TFMS-NH4) Ammonium trifluoromethanesulfonate (TFMS-NH4)	38542-94-8
	三氟甲磺酸釹(III) (TFMS-Ho) Holmium(III) trifluoromethanesulfonate (TFMS-Ho)	139177-63-2
	三氟甲磺酸酯 Trifluoromethanesulfonate	37181-39-8
	三氟甲磺酸鐳(III) (TFMS-Pr) Praseodymium(III) trifluoromethanesulfonate (TFMS-Pr)	52093-27-3
	三氟甲磺酸鉍(III) (TFMS-Bi) Bismuth(III) trifluoromethanesulfonate (TFMS-Bi)	88189-03-1
	三氟甲磺酸鎘(III) (TFMS-Eu) Europium(III) trifluoromethanesulfonate (TFMS-Eu)	52093-25-1

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

# 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 62 of 73

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

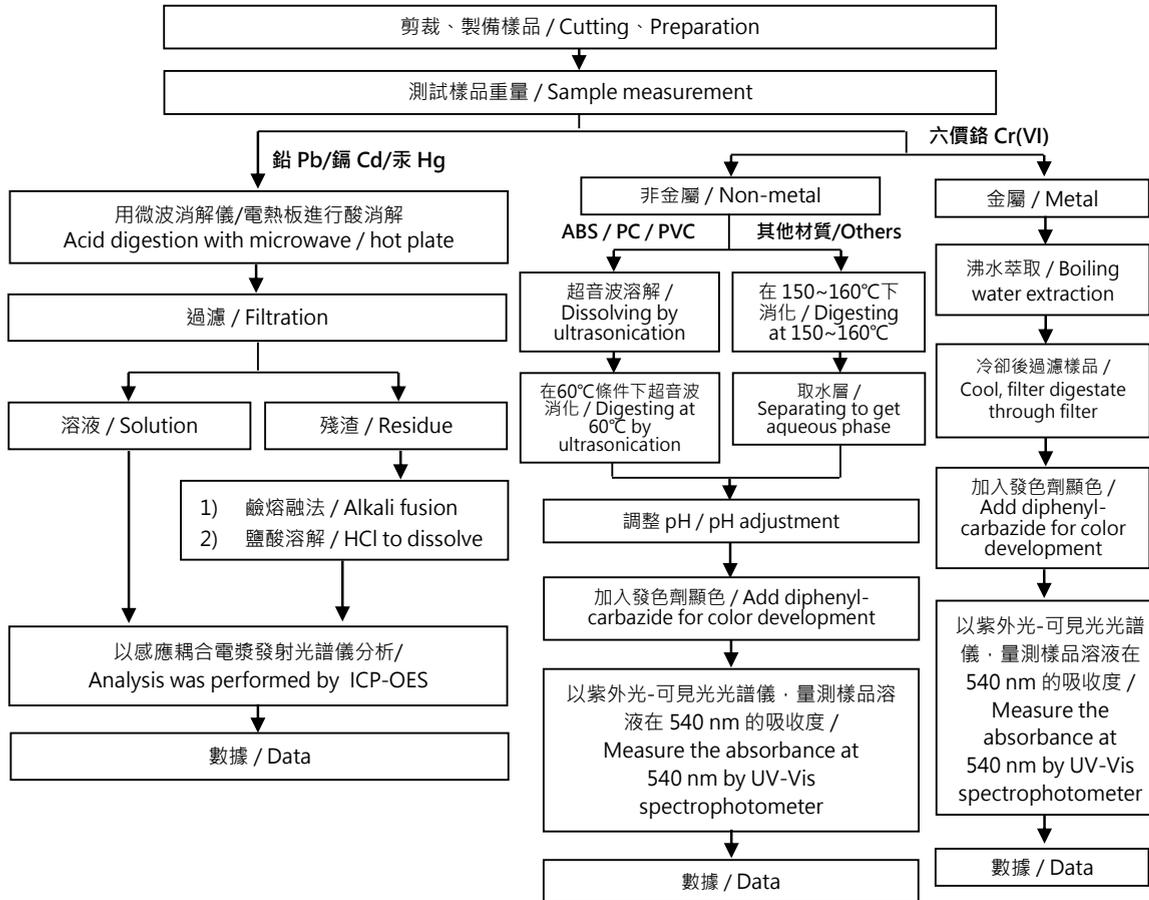
群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
TFMS, 及其鹽 (TFMS, its salts)	三氟甲磺酸銲(III) (TFMS-Er) Erbium(III) trifluoromethanesulfonate (TFMS-Er)	139177-64-3
	三氟甲磺酸銦(III) (TFMS-Ga) Gallium(III) trifluoromethanesulfonate (TFMS-Ga)	74974-60-0
	N,N,N-三乙基-2,2,2-三氟乙烷-1-三氟甲磺酸銲 N,N,N-Triethyl-2,2,2-trifluoroethan-1-aminium trifluoromethanesulfonate	380230-73-9
	三氟甲磺酸鈣(II) (TFMS-Ga) Methanesulfonic acid, trifluoro-, calcium salt (TFMS-Ga)	55120-75-7
	三氟甲磺酸銻(I) (TFMS-Tl) Thallium(1+) trifluoromethanesulfonate (TFMS-Tl)	73491-36-8
	三氟甲磺酸銦(IV) (TFMS-Hf) Hafnium(IV) Trifluoromethanesulfonate (TFMS-Hf)	161337-67-3
	PFPrS, 及其鹽 (PFPrS, its salts)	全氟丙烷磺酸 (Perfluoropropate sulfonic acid) (PFPrS)
全氟丙烷磺酸鈉 (PFPrS-Na) Perfluoropropanesulfonic acid sodium salt (PFPrS-Na)		359868-82-9
PFHpSi, 及其鹽 (PFHpSi, its salts)	全氟庚烷-1-亞磺酸 (Perfluoroheptane-1-sulfinic acid) (PFHpSi)	769067-51-8
	全氟庚烷-1-亞磺酸鈉鹽 (PFHpSi-Na) 1-heptanesulfinic Acid Sodium Salt (PFHpSi-Na)	68555-66-8
PFOPA, 及其鹽 (PFOPA, its salts)	全氟辛基磷酸 (Perfluorooctylphosphonic acid) (PFOPA)	40143-78-0
	全氟辛基磷酸-4-甲基苯甲醯胺 (Heptadecafluorooctyl)phosphonic acid--4-methylaniline (1/1)	1263361-03-0
乙基九氟丁基及其異構體 (Ethyl perfluoroisobutyl ether and its isomers)	乙基九氟丁基及其異構體 (Ethyl perfluoroisobutyl ether and its isomers)	163702-05-4
	全氟異丁基乙醚 Perfluoroisobutyl ethyl ether	163702-06-5

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

## 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<sup>6+</sup> test method excluded)

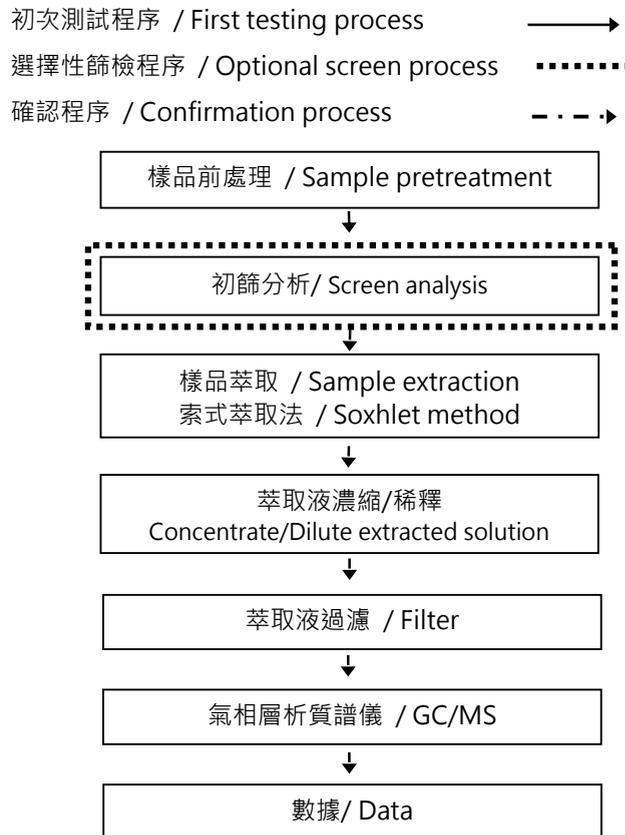


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

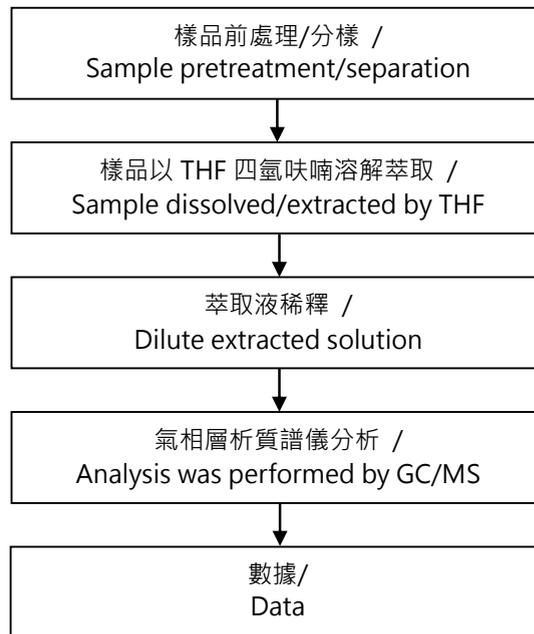
### 多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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

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

#### 【測試方法/Test method: IEC 62321-8】

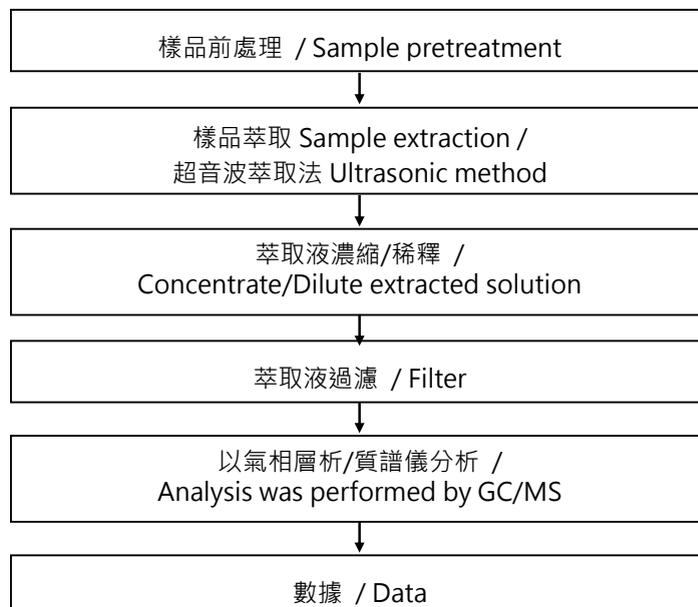


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

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

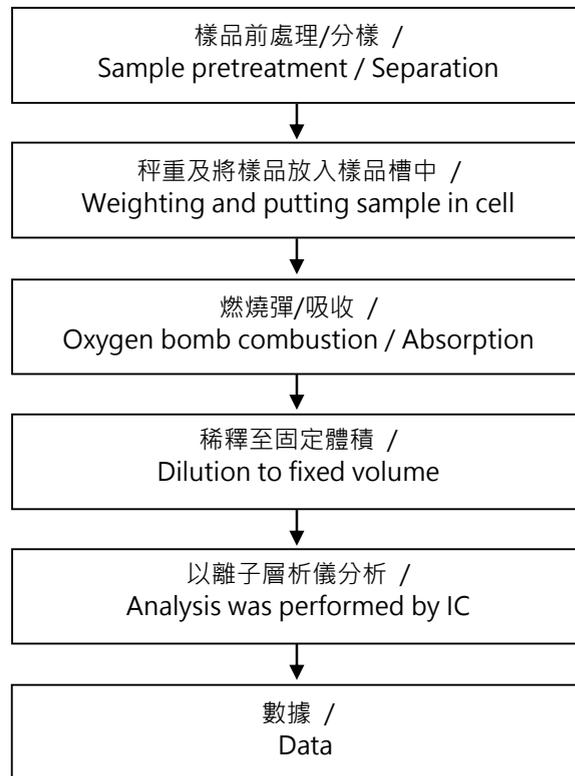


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 鹵素分析流程圖 / Analytical flow chart - Halogen

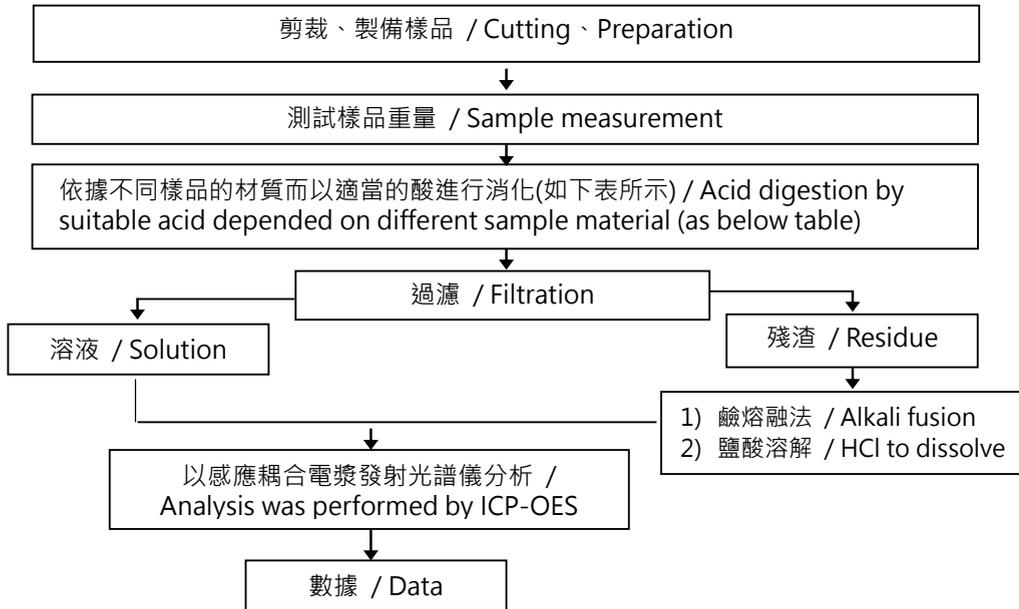


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

### 元素以 ICP-OES 分析的消化流程圖

#### (Flow chart of digestion for the elements analysis performed by ICP-OES)

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.



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
玻璃 / Glass	硝酸,氫氟酸 / HNO <sub>3</sub> , HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO <sub>3</sub>
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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

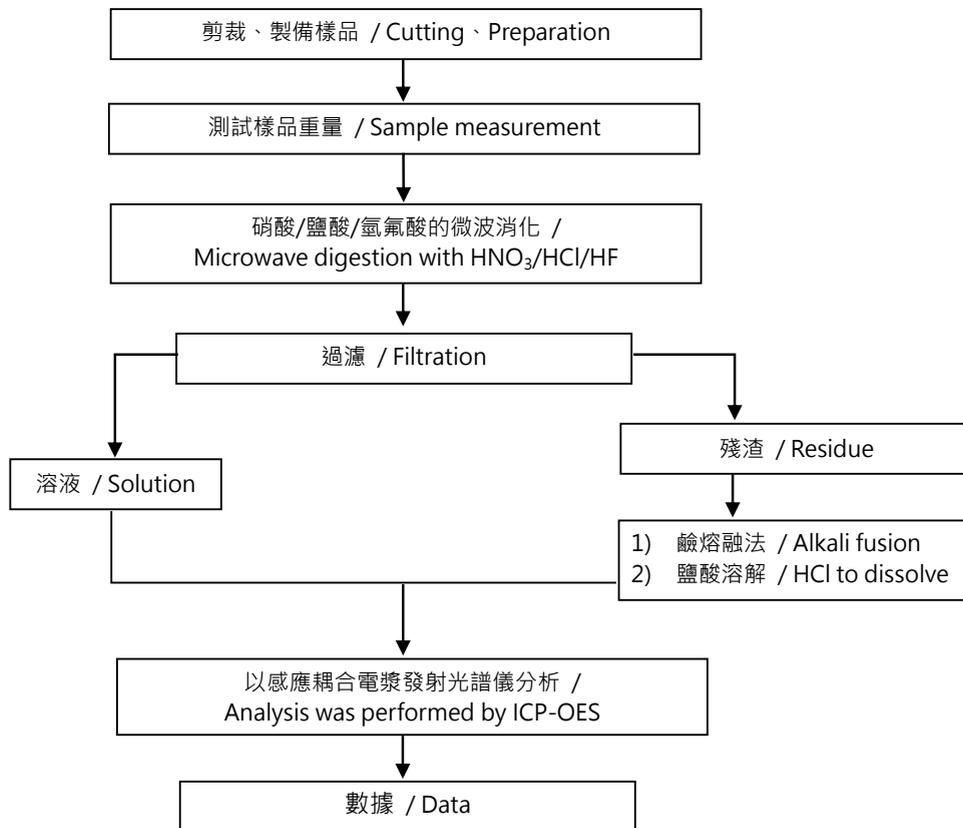
UNIVERTICAL LLC  
203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 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.

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



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

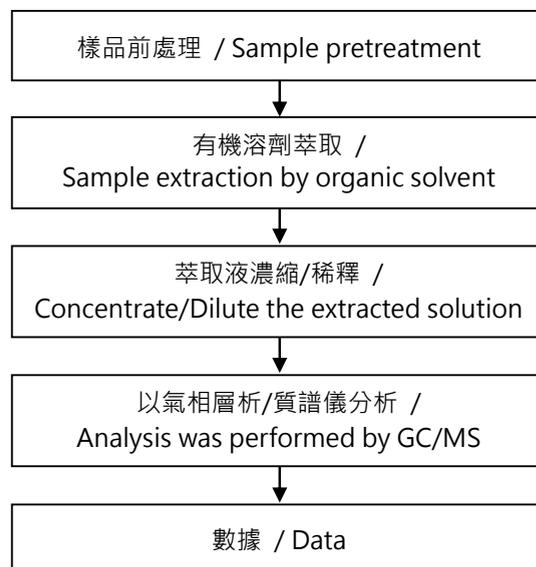
UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 分析流程圖 / Analytical flow chart

【適用於：多氯聯苯、多氯奈、多氯三聯苯、滅蟻靈、氯化石蠟、DBBT】

\*Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT

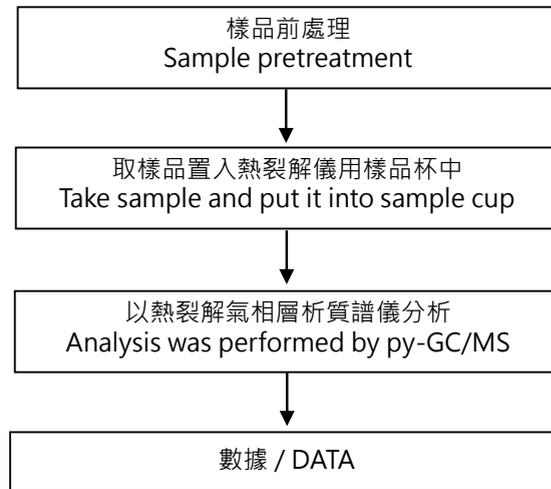


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

### 紅磷分析流程 / Analytical flow chart - Red phosphorus

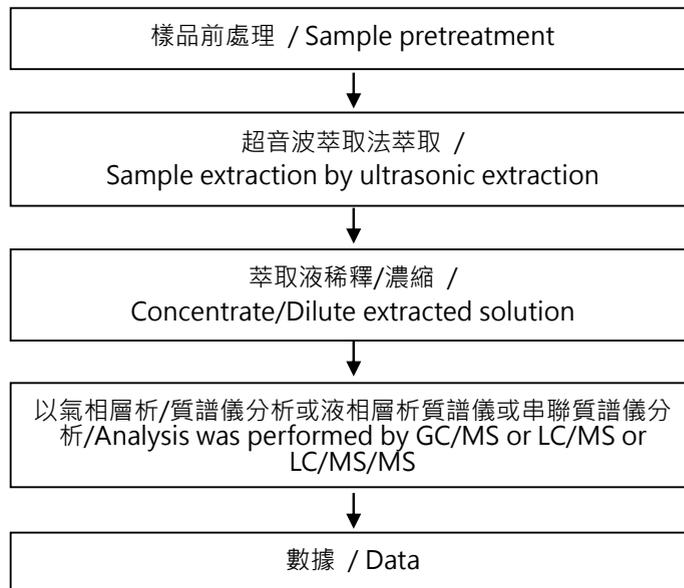


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

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.)



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

## 測試報告

## Test Report

號碼(No.): ETR25207279

日期(Date): 04-Mar-2025

頁數(Page): 73 of 73

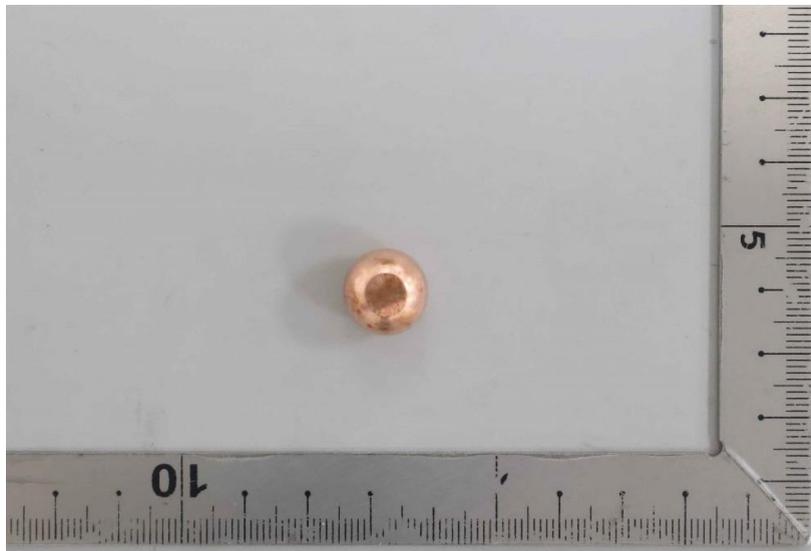
UNIVERTICAL LLC

203 WEATHERHEAD ST. ANGOLA, IN USA 46703

\* 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.)

### ETR25207279



\*\* 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 <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.