

Test Report

號碼(No.): ETR22403616 日期(Da

日期(Date): 26-Apr-2022

頁數(Page): 1 of 8

亞伯撼有限公司 (ABRAHAM)

桃園市楊梅區新江路223巷2號 (NO. 2, LN. 223, XINJIANG RD., YANGMEI DIST., TAOYUAN CITY 32652, TAIWAN (R.O.C.))

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) : 亞伯撼有限公司 (ABRAHAM)

樣品名稱(Sample Name) : 無鉛錫製品

樣品型號(Style/Item No.) : SAC-300 , SAC-0300 , SAC-0307 , SC-99 , SN-99 , SN-63 , SN-60

收件日(Sample Receiving Date)

19-Apr-2022

測試期間(Testing Period)

19-Apr-2022 to 26-Apr-2022

測試需求(Test Requested) : (1) 依據客戶指定,參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測

試鎘、鉛、汞、六價鉻、多溴聯苯 、多溴聯苯醚, DBP, BBP, DEHP, DIBP。 (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted

sample(s).)

(2) 其他測試項目請見下一頁。 (Please refer to next pages for the other item(s).)

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

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

PIN CODE: 7540667B



Test Report

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測試部位敘述 (Test Part Description)

No.1 : 銀色金屬 (SILVER 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)
				No.1
鎘 (Cd) (Cadmium (Cd)) (CAS No.: 7440-	參考IEC 62321-5: 2013,以感應耦合電漿發射光	mg/kg	2	n.d.
43-9)	譜儀分析。(With reference to IEC 62321-5:			
	2013, analysis was performed by ICP-OES.)			
鉛 (Pb) (Lead (Pb)) (CAS No.: 7439-92-1)	參考IEC 62321-5: 2013,以感應耦合電漿發射光	mg/kg	2	62.9
	譜儀分析。(With reference to IEC 62321-5:			
	2013, analysis was performed by ICP-OES.)			
汞 (Hg) (Mercury (Hg)) (CAS No.: 7439-	參考IEC 62321-4: 2013+ AMD1: 2017,以感應耦	mg/kg	2	n.d.
97-6)	合電漿發射光譜儀分析。(With reference to IEC			
	62321-4: 2013+ AMD1: 2017, analysis was			
	performed by ICP-OES.)			
六價鉻 (Hexavalent Chromium) Cr(VI)	參考IEC 62321-7-1: 2015·以紫外光-可見光分光	μg/cm²	0.1	n.d.
(CAS No.: 18540-29-9) (#2)	光度計分析。(With reference to IEC 62321-7-1:			
	2015, analysis was performed by UV-VIS.)			
一溴聯苯 (Monobromobiphenyl)		mg/kg	5	n.d.
二溴聯苯 (Dibromobiphenyl)		mg/kg	5	n.d.
三溴聯苯 (Tribromobiphenyl)		mg/kg	5	n.d.
四溴聯苯 (Tetrabromobiphenyl)		mg/kg	5	n.d.
五溴聯苯 (Pentabromobiphenyl)	參考IEC 62321-6: 2015·以氣相層析儀/質譜儀分	mg/kg	5	n.d.
六溴聯苯 (Hexabromobiphenyl)	析。(With reference to IEC 62321-6: 2015,	mg/kg	5	n.d.
七溴聯苯 (Heptabromobiphenyl)	analysis was performed by GC/MS.)	mg/kg	5	n.d.
八溴聯苯 (Octabromobiphenyl)		mg/kg	5	n.d.
九溴聯苯 (Nonabromobiphenyl)		mg/kg	5	n.d.
十溴聯苯 (Decabromobiphenyl)		mg/kg	5	n.d.
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.



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(Result) (Monobromodiphenyl ether)	測試項目	測試方法	單位	MDL	結果
一溴聯苯醚 (Monobromodiphenyl ether) 二溴聯苯醚 (Dibromodiphenyl ether) 三溴聯苯醚 (Tetrabromodiphenyl ether) 五溴聯苯醚 (Tetrabromodiphenyl ether) 九溴聯苯醚 (Hexabromodiphenyl ether) 九溴聯苯醚 (Heptabromodiphenyl ether) 九溴聯苯醚 (Octabromodiphenyl ether) 九溴聯苯醚 (Octabromodiphenyl ether) 十溴聯苯醚 (Decabromodiphenyl ether) 十溴聯苯醚 (Decabromodiphenyl ether) 十溴聯苯 (Decabromodiphenyl ether) 十溴哪苯 (Decabromodiphenyl ether) 十溴那苯 甲酸 (Decabromodiphenyl ether) 十溴那苯 甲酸 (Decabromodiphenyl ether) ***********************************	(Test Items)	(Method)	(Unit)		· ·
一 演称 来離 (Dibromodiphenyl ether)					
三溴聯苯醚 (Tribromodiphenyl ether) 四溴聯苯醚 (Pentabromodiphenyl ether) 无溴聯苯醚 (Hexabromodiphenyl ether) 八溴聯苯醚 (Hexabromodiphenyl ether) 九溴聯苯醚 (Octabromodiphenyl ether) 九溴聯苯醚 (Octabromodiphenyl ether) 九溴聯苯醚 (Decabromodiphenyl ether) 九溴聯苯醚 (Decabromodiphenyl ether) 九溴聯苯醚 (Decabromodiphenyl ether) 为溴聯苯醚 (Decabromodiphenyl ether) 为溴聯苯 (Decabromodiphenyl ether) 为溴 (Decabromodiphenyl ether) 为溴 (Decabromodiphenyl ether) 为溴 (Decabromodiphenyl ether) 为溴 (Decabromodiphenyl ether) 为 (Decabromodiphenyl ether)	1 2				
四溴聯苯醚 (Pentabromodiphenyl ether) 五溴聯苯醚 (Pentabromodiphenyl ether) ボ溴聯苯醚 (Heptabromodiphenyl ether) ボ溴聯苯醚 (Heptabromodiphenyl ether) カ溴聯苯醚 (Octabromodiphenyl ether) カ溴聯苯醚 (Octabromodiphenyl ether) カ溴聯苯醚 (Octabromodiphenyl ether) カ溴聯苯醚 (Decabromodiphenyl ether) カ溴聯苯醚 (Decabromodiphenyl ether) カ溴聯苯醚 (Decabromodiphenyl ether) カ溴聯苯 (Decabromodiphenyl ether) カ溴胂苯酚 (Depabromodiphenyl ether) カ溴胂苯酚 (Depabromodiphenyl ether) カ溴胂苯酚 (Depabromodiphenyl ether) カル溴甲苯酚 (Decabromodiphenyl ether) カルカル (Decabromodiphenyl	, , ,		<u> </u>		
表演形		析。(With reference to IEC 62321-6: 2015,	<u> </u>		n.d.
所。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	. ,		mg/kg		n.d.
世漢聯苯醚 (Heptabromodiphenyl ether) 八溴聯苯醚 (Octabromodiphenyl ether) 九溴聯苯醚 (Decabromodiphenyl ether) 十溴聯苯醚 (Decabromodiphenyl ether) 今溴聯苯醚總和 (Sum of PBDEs) 那苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP)) (CAS No.: 85-68-7) 那苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DBP)) (CAS No.: 84-74-2) 那苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 那苯二甲酸二異子酯 (DIDP) (Diisobutyl phthalate (DIDP)) (CAS No.: 84-69-5) 那苯二甲酸二異子酯 (DIDP) (Diisobutyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 邓苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 邓苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 邓苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)			mg/kg		n.d.
八溴聯苯醚 (Octabromodiphenyl ether)			mg/kg	5	n.d.
九溴聯苯醚 (Nonabromodiphenyl ether)	七溴聯苯醚 (Heptabromodiphenyl ether)		mg/kg	5	n.d.
大演聯苯醚 (Decabromodiphenyl ether)	八溴聯苯醚 (Octabromodiphenyl ether)		mg/kg	5	n.d.
多溴酵苯醚總和 (Sum of PBDEs)	九溴聯苯醚 (Nonabromodiphenyl ether)		mg/kg	5	n.d.
##苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP)) (CAS No.: 85-68-7) ##苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP)) (CAS No.: 84-74-2) ##苯二甲酸二異丁酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7) ##苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) ##苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) ##苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) ## ## ## ## ## ## ## ## ## ## ## ## ##	十溴聯苯醚 (Decabromodiphenyl ether)		mg/kg	5	n.d.
phthalate (BBP)) (CAS No.: 85-68-7) 鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP)) (CAS No.: 84-74-2) 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di- (2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7) 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 鄰苯二甲酸二異子酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)	多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.
#苯二甲酸二(DBP) (Dibutyl phthalate (DBP)) (CAS No.: 84-74-2)	鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl		mg/kg	50	n.d.
phthalate (DBP)) (CAS No.: 84-74-2) 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7) 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DINP)) (Di-n-octyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)	phthalate (BBP)) (CAS No.: 85-68-7)				
phthalate (DBP)) (CAS No.: 84-74-2) 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7) 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DINP)) (Di-n-octyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)	鄰苯二甲酸二丁酯 (DBP) (Dibutyl		mg/kg	50	n.d.
(2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7) 郷苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 郷苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 郷苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl の	phthalate (DBP)) (CAS No.: 84-74-2)				
No.: 117-81-7) 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl を考IEC 62321-8: 2017,	鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-		mg/kg	50	n.d.
郷苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5) 郷苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 郷苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl タ考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.)	(2-ethylhexyl) phthalate (DEHP)) (CAS				
phthalate (DIBP)) (CAS No.: 84-69-5) 鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl	No.: 117-81-7)				
##苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) ##苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) ##苯二甲酸二正辛酯 (DNOP) (Di-n-octyl mg/kg 50 n.d.	鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl	参考IEC 62321-8: 2017·以氣相層析儀/質譜儀分	mg/kg	50	n.d.
phthalate (DIDP)) (CAS No.: 26761-40- 0, 68515-49-1) 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12- 0, 68515-48-0) 鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl	phthalate (DIBP)) (CAS No.: 84-69-5)	析。(With reference to IEC 62321-8: 2017,			
0, 68515-49-1) mg/kg 50 n.d. 脚本二甲酸二異壬酯 (DINP) (CAS No.: 28553-12-0, 68515-48-0) mg/kg 50 n.d. 脚本二甲酸二正辛酯 (DNOP) (Di-n-octyl mg/kg 50 n.d.	鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl		mg/kg	50	n.d.
郷苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0) mg/kg 50 n.d. 郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl mg/kg 50 n.d.	phthalate (DIDP)) (CAS No.: 26761-40-				
phthalate (DINP)) (CAS No.: 28553-12- 0, 68515-48-0) 郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl mg/kg 50 n.d.	0, 68515-49-1)				
phthalate (DINP)) (CAS No.: 28553-12- 0, 68515-48-0) 郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl mg/kg 50 n.d.	鄰苯二甲酸二異壬酯 (DINP) (Diisononyl		mg/kg	50	n.d.
郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl mg/kg 50 n.d.	phthalate (DINP)) (CAS No.: 28553-12-				
, , , , , , , , , , , , , , , , , , ,	0, 68515-48-0)				
, , , , , , , , , , , , , , , , , , ,	鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl		mg/kg	50	n.d.
prictionate (51101)/ (61101111111111111111111111111111111111	phthalate (DNOP)) (CAS No.: 117-84-0)				



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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. (#2) =
 - a. 當六價鉻結果大於0.13 µg/cm²·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 µg/cm². 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 µg/cm²)·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 µg/cm²). The coating is considered a non-Cr(VI) based coating) c. 當六價鉻結果介於 0.10 及 0.13 µg/cm² 時·無法確定塗層是否含有六價鉻。(The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination.)



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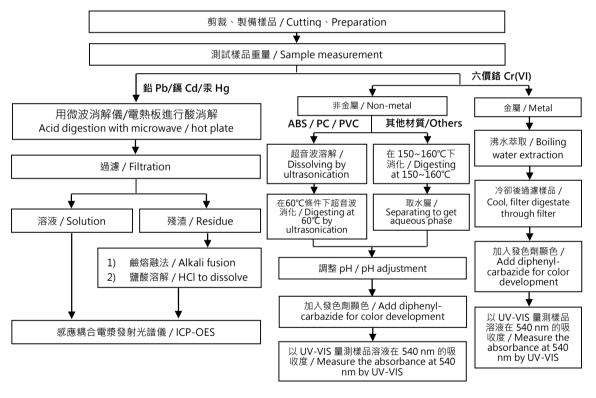
亞伯撼有限公司 (ABRAHAM)

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

根據以下的流程圖之條件,樣品已完全溶解。(六價鉻測試方法除外)

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)





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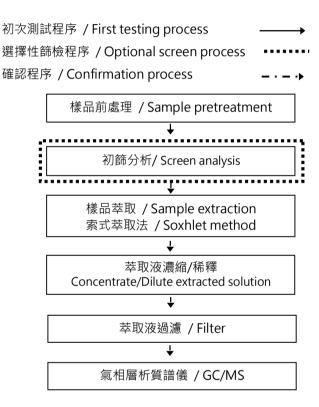
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多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs





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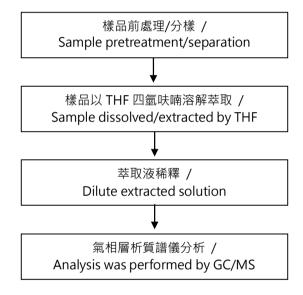
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桃園市楊梅區新江路223巷2號 (NO. 2, LN. 223, XINJIANG RD., YANGMEI DIST., TAOYUAN CITY 32652, TAIWAN (R.O.C.))

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

【測試方法/Test method: IEC 62321-8】





Test Report

號碼(No.): ETR22403616

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亞伯撼有限公司 (ABRAHAM)

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* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. * (The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR22403616



** 報告結尾 (End of Report) **