

Test Report

頁數(Page): 1 of 13 號碼(No.): EKR25100117 日期(Date): 09-Jan-2025

國喬石油化學股份有限公司 (GRAND PACIFIC PETROCHEMICAL CORPORATION) 台北市南京東路四段1號10樓 (10 FL., NO. 1, SEC. 4, NANJING E. ROAD, TAIPEI, 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)

國喬石油化學股份有限公司 (GRAND PACIFIC PETROCHEMICAL CORP.)

樣品名稱(Sample Name) 樣品型號(Style/Item No.)

收件日(Sample Receiving Date)

ABS D-150

02-Jan-2025

測試期間(Testing Period)

02-Jan-2025 to 09-Jan-2025

測試需求(Test Requested)

- 依據客戶指定,參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測 (1)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).)
- 依據客戶指定,測試 PAHs 及其他測項。 (As specified by client, to test PAHs (2) and other item(s).)

測試結果(Test Results)

請參閱下一頁 (Please refer to following pages.)

2015/863 amending Annex II to Directive 2011/65/EU.)

論(Conclusion)

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)

報告簽署人/張伯睿 博士/部 壓理 Ray Chang, Ph.D./ Department Manager Signed for and on behalt SĞS TAIWAN LTD. 化學實驗室-高雄/Chemical Laboratory-Kaohsiung



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測試部位敘述 (Test Part Description)

No.1 : 白色粒子 (WHITE PELLETS)

測試結果 (Test Results)

測試項目	測試方法	單位	MDL	結果	限值
(Test Items)	(Method)			(Result)	(Limit)
	, ,	, ,		No.1	
鎘 (Cd) (Cadmium (Cd))	參考IEC 62321-5: 2013,以感應耦合電漿	mg/kg	2	n.d.	100
	發射光譜儀分析。(With reference to IEC				
鉛 (Pb) (Lead (Pb))	62321-5: 2013, analysis was performed	mg/kg	2	n.d.	1000
	by ICP-OES.)				
汞 (Hg) (Mercury (Hg))	參考IEC 62321-4: 2013+ AMD1: 2017 ·	mg/kg	2	n.d.	1000
	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.)				
六價鉻 Cr(VI) (Hexavalent Chromium	參考IEC 62321-7-2: 2017,以紫外光-可見	mg/kg	8	n.d.	1000
Cr(VI))	光分光光度計分析。(With reference to				
	IEC 62321-7-2: 2017, analysis was				
	performed by UV-VIS.)				
一溴聯苯 (Monobromobiphenyl)		mg/kg	5	n.d.	-
二溴聯苯 (Dibromobiphenyl)		mg/kg	5	n.d.	-
三溴聯苯 (Tribromobiphenyl)		mg/kg	5	n.d.	=
四溴聯苯 (Tetrabromobiphenyl)	 参考IEC 62321-6: 2015·以氣相層析儀/質	mg/kg	5	n.d.	=
五溴聯苯 (Pentabromobiphenyl)	多名IEC 02321-0. 2015,以無相層が譲/員 譜儀分析。(With reference to IEC 62321-	mg/kg	5	n.d.	=
六溴聯苯 (Hexabromobiphenyl)	6: 2015, analysis was performed by	mg/kg	5	n.d.	
七溴聯苯 (Heptabromobiphenyl)	GC/MS.)	mg/kg	5	n.d.	-
八溴聯苯 (Octabromobiphenyl)	JOC/1913.)	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



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(Test Items)	(Method)	(Unit)		(Result)	(Limit)
				No.1	
一溴聯苯醚 (Monobromodiphenyl ether)		mg/kg	5	n.d.	=
二溴聯苯醚 (Dibromodiphenyl ether)		mg/kg	5	n.d.	=
三溴聯苯醚 (Tribromodiphenyl ether)		mg/kg	5	n.d.	=
四溴聯苯醚 (Tetrabromodiphenyl ether)	<u> </u>	mg/kg	5	n.d.	=
五溴聯苯醚 (Pentabromodiphenyl ether)	參考IEC 62321-6: 2015,以氣相層析儀/質譜儀分析。(With reference to IEC 62321-	mg/kg	5	n.d.	=
六溴聯苯醚 (Hexabromodiphenyl ether)	6: 2015, analysis was performed by	mg/kg	5	n.d.	-
七溴聯苯醚 (Heptabromodiphenyl ether)	GC/MS.)	mg/kg	5	n.d.	-
八溴聯苯醚 (Octabromodiphenyl ether)	GC/1VI3.)	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		mg/kg	50	n.d.	1000
phthalate (BBP))					
鄰苯二甲酸二丁酯 (DBP) (Dibutyl		mg/kg	50	n.d.	1000
phthalate (DBP))					
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl		mg/kg	50	n.d.	1000
phthalate (DIBP))					
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-		mg/kg	50	n.d.	1000
(2-ethylhexyl) phthalate (DEHP))					
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl		mg/kg	50	n.d.	-
phthalate (DINP)) (CAS No.: 28553-12-0,	参考IEC 62321-8: 2017,以氣相層析儀/質				
68515-48-0)	譜儀分析。(With reference to IEC 62321-				
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl	8: 2017, analysis was performed by	mg/kg	50	n.d.	-
phthalate (DIDP)) (CAS No.: 26761-40-0,	GC/MS.)				
68515-49-1) 郷苯二甲酸二正辛酯 (DNOP) (Di-n-octyl		/1		1	
phthalate (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-
郷苯二甲酸二正己酯 (DNHP) (Di-n-hexyl	-	ma/ka	50	n.d.	
phthalate (DNHP)) (CAS No.: 84-75-3)		mg/kg	30	n.a.	_
		mg/kg	50	n.d.	_
(Bis(2-methoxyethyl) phthalate (DMEP))		ilig/kg	30	II.U.	_
(CAS No.: 117-82-8)					
郷苯二甲酸二正戊酯 (DNPP) (Di-n-pentyl		mg/kg	50	n.d.	_
phthalate (DNPP)) (CAS No.: 131-18-0)		יישי אפייי		1	



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測試項目	測試方法	單位	MDL	結果	限值
(Test Items)	(Method)	(Unit)		(Result)	(Limit)
				No.1	
多環芳香煙 (Polycyclic Aromatic					
Hydrocarbons) (PAHs)					
苯駢(a)芘 (Benzo[a]pyrene) (CAS No.:		mg/kg	0.2	n.d.	-
50-32-8)	 				
苯駢(e)芘 (Benzo[e]pyrene) (CAS No.:			0.2	n.d.	-
192-97-2)					
苯駢蒽 (Benzo[a]anthracene) (CAS No.:		mg/kg	0.2	n.d.	-
56-55-3)					
苯(b)苯駢芴 (Benzo[b]fluoranthene)		mg/kg	0.2	n.d.	-
(CAS No.: 205-99-2)					
苯(j)苯駢芴 (Benzo[j]fluoranthene) (CAS		mg/kg	0.2	n.d.	-
No.: 205-82-3)					
苯(k)苯騈芴 (Benzo[k]fluoranthene)		mg/kg	0.2	n.d.	-
(CAS No.: 207-08-9)	參考AfPS GS 2019:01 PAK,以氣相層析儀				
菌 (Chrysene) (CAS No.: 218-01-9)	/質譜儀分析。(With reference to AfPS GS	mg/kg	0.2	n.d.	-
二苯駢蒽 (Dibenzo[a,h]anthracene)	2019:01 PAK, analysis was performed by	mg/kg	0.2	n.d.	-
(CAS No.: 53-70-3)	GC/MS.)				
苯駢菲 (Benzo[g,h,i]perylene) (CAS No.:		mg/kg	0.2	n.d.	-
191-24-2)					
茚酮芘 (Indeno[1,2,3-c,d]pyrene) (CAS		mg/kg	0.2	n.d.	-
No.: 193-39-5)					
蒽 (Anthracene) (CAS No.: 120-12-7)		mg/kg	0.2	n.d.	-
苯駢芴 (Fluoranthene) (CAS No.: 206-		mg/kg	0.2	n.d.	-
44-0)					
菲 (Phenanthrene) (CAS No.: 85-01-8)		mg/kg	0.2	n.d.	-
芘 (Pyrene) (CAS No.: 129-00-0)		mg/kg	0.2	n.d.	-
萘 (Naphthalene) (CAS No.: 91-20-3)		mg/kg	0.2	n.d.	-
多環芳香烴15項總和 (Sum of 15 PAHs)	1	mg/kg	-	n.d.	-
苊烯 (Acenaphthylene) (CAS No.: 208-	參考AfPS GS 2019:01 PAK,以氣相層析儀	mg/kg	0.2	n.d.	-
96-8)	/質譜儀分析。(With reference to AfPS GS	8			
苊 (Acenaphthene) (CAS No.: 83-32-9)	2019:01 PAK, analysis was performed by	mg/kg	0.2	n.d.	_
芴 (Fluorene) (CAS No.: 86-73-7)	GC/MS.)	mg/kg	0.2	n.d.	_
55 (Flacteric) (CAS 140 00 75 7)	==,:::=,/	1119/159	0.2	11.U.	



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測試項目	測試方法	單位	MDL	結果	限值
(Test Items)	(Method)	(Unit)		(Result)	(Limit)
				No.1	
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-		mg/kg	50	n.d.	-
8)					
氯 (CI) (Chlorine (CI)) (CAS No.: 22537-	參考BS EN 14582: 2016 · 以離子層析儀分	mg/kg	50	n.d.	-
15-1)	析。(With reference to BS EN 14582:				
溴 (Br) (Bromine (Br)) (CAS No.: 10097-	2016, analysis was performed by IC.)	mg/kg	50	n.d.	-
32-2)					
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.	-
六溴環十二烷及所有主要被辨別出的異構	參考IEC 62321-9: 2021,以氣相層析儀/質	mg/kg	20	n.d.	-
物(HBCDD) (α- HBCDD, β- HBCDD, γ-	譜儀分析。(With reference to IEC 62321-				
HBCDD) (Hexabromocyclododecane	9: 2021, analysis was performed by				
(HBCDD) and all major	GC/MS.)				
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))					

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. 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.)



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PAHs Remark:

△ 德國產品安全委員會(AfPS): GS PAHs 要求

AfPS (German commission for Product Safety): GS PAHs requirements

	第1類(Category 1)	第 2 類(Category 2)		第 3 類(Category 3)		
項目 (Parameter)	意圖放入口中的材料或者長時間接觸皮膚(超過 30 秒)的 2009/48/EC 定義的玩具材料和 3 歲以下兒童使用的產品(Materials intended to be placed in the mouth, or materials in toys (Directive 2009/48/EC) or articles for children up to 3	不屬於第 1 類的材料·並意圖或可預 見與皮膚接觸逾 30 秒(長期皮膚接觸) 或重複的短時間接觸(Materials that are not in Category 1, with intended or foreseeable long-term skin contact (> 30 seconds) or short-term repetitive contact with the skin)		不屬於第 1 類或第 2 類的材料·並意 圖或可預見與皮膚接觸不超過 30 秒 (短期皮膚接觸)(Materials not covered by Category 1 or 2, with		
	long-term skin contact (> 30 seconds))	a. 供 14 歲以下兒童使 用的產品(Use by children under 14)	consumer	a. 供 14 歲以下兒童使 用的產品(Use by children under 14)	consumer	
Naphthalene	< 1	< 2		< 10		
Phenanthrene						
Anthracene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum	
Fluoranthene	\ I Sulli	\ 3 3dill	\ 10 Julii	\ 20 Julii	\ 30 3uiii	
Pyrene						
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Indeno[1,2,3-c,d] pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Dibenzo[a,h]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
15 項 PAH 總濃度 (Sum of 15 PAH)	< 1	< 5	< 10	< 20	< 50	

單位(Unit):mg/kg



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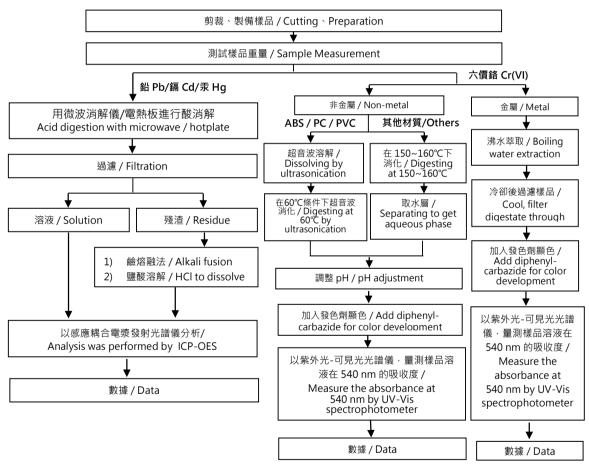
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重金屬流程圖 / Analytical flow chart of Heavy Metal

根據以下的流程圖之條件,樣品已完全溶解。(六價鉻測試方法除外)

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



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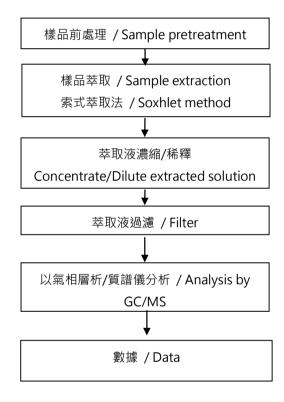
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多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART





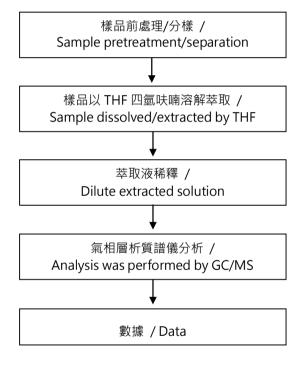
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可塑劑分析流程圖 / Analytical flow chart of phthalate content

【測試方法/Test method: IEC 62321-8】



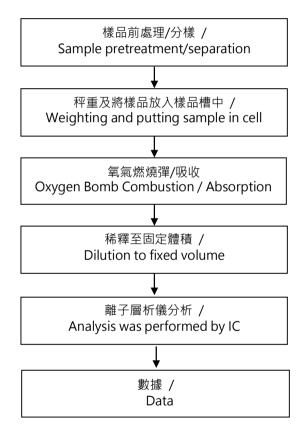


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鹵素分析流程圖 / Analytical flow chart of Halogen



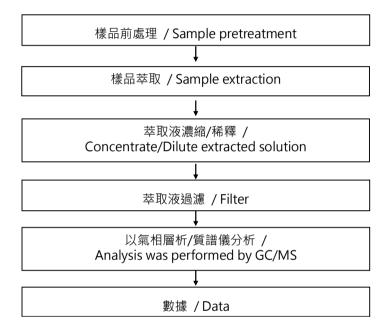


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六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



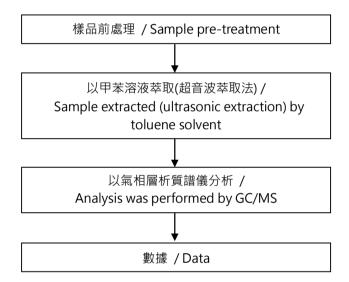


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國喬石油化學股份有限公司 (GRAND PACIFIC PETROCHEMICAL CORPORATION) 台北市南京東路四段1號10樓 (10 FL., NO. 1, SEC. 4, NANJING E. ROAD, TAIPEI, TAIWAN R.O.C)

多環芳香烴分析流程圖 / PAHs (Poly Aromatic Hydrocarbons) analytical flow chart



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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.)

EKR25100117



** 報告結尾 (End of Report) **