

## 測試報告 Test Report

號碼(No.) : CE/2017/B1048

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明輝化工實業有限公司

MIN FEI CHEMICALS INDUSTRIES CO., LTD.

新北市土城區大安路138巷32號

NO. 32, LANE 138, TA AN RD., TUCHENG DISTRICT, NEW TAIPEI CITY, 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/on behalf of the applicant as) :

送樣廠商(Sample Submitted By) : 明輝化工實業有限公司 (MIN FEI CHEMICALS INDUSTRIES CO., LTD.)  
樣品名稱(Sample Description) : 明輝油墨  
樣品型號(Style/Item No.) : 紅色(無鹵) (RED (NON-HALOGEN) )  
收件日期(Sample Receiving Date) : 2017/11/06  
測試期間(Testing Period) : 2017/11/06 TO 2017/11/13

=====  
測試需求(Test Requested) : 依據客戶要求, 檢測多環芳香烴含量. (As specified by client, to test Polycyclic Aromatic Hydrocarbons (PAHs).)

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

總結(Summary) : 根據客戶所提供的樣品, 其多環芳香烴測試結果符合德國產品安全委員會(AfPS) GS PAHs 第 3 類 「列於德國產品安全法之其他產品」之限值要求 (Based upon the performed tests on the submitted sample(s), the test results of PAHs comply with the limits of PAHs requirement (Category 3) 「Other products under ProdSG」 as set by German Committee on Product Safety (AfPS) GS PAHs.)

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



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### 測試結果(Test Results)

測試部位(PART NAME) No.1 : 紅色油墨 (RED INK)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No. 1
多環芳香烴 / Polycyclic Aromatic Hydrocarbons (PAHs)				
芴 / Acenaphthene (CAS No. : 83-32-9)	mg/kg	參考AfPS GS 2014:01 PAK方法, 以氣相層析/質譜儀檢測. / With reference to AfPS GS 2014:01 PAK method. Analysis was performed by GC/MS.	0.2	n. d.
芴烯 / Acenaphthylene (CAS No. : 208-96-8)			0.2	n. d.
蒽 / Anthracene (CAS No. : 120-12-7)			0.2	n. d.
苯駢蒽 / Benzo[a]anthracene (CAS No. : 56-55-3)			0.2	n. d.
苯駢(a)芘 / Benzo[a]pyrene (CAS No. : 50-32-8)			0.2	n. d.
苯(b)苯駢芴 / Benzo[b]fluoranthene (CAS No. : 205-99-2)			0.2	n. d.
苯駢芘 / Benzo[g, h, i]perylene (CAS No. : 191-24-2)			0.2	n. d.
苯(k)苯駢芴 / Benzo[k]fluoranthene (CAS No. : 207-08-9)			0.2	n. d.
Chrysene (CAS No. : 218-01-9)			0.2	n. d.
二苯駢蒽 / Dibenzo[a, h]anthracene (CAS No. : 53-70-3)			0.2	n. d.
苯駢芴 / Fluoranthene (CAS No. : 206-44-0)			0.2	n. d.
芴 / Fluorene (CAS No. : 86-73-7)			0.2	n. d.
茚酮芘 / Indeno[1, 2, 3-c, d] pyrene (CAS No. : 193-39-5)			0.2	n. d.
萘 / Naphthalene (CAS No. : 91-20-3)			0.2	n. d.
菲 / Phenanthrene (CAS No. : 85-01-8)			0.2	n. d.
芘 / Pyrene (CAS No. : 129-00-0)			0.2	n. d.
苯(j)苯駢芴 / Benzo[j]fluoranthene (CAS No. : 205-82-3)			0.2	n. d.
苯駢(e)芘 / Benzo[e]pyrene (CAS No. : 192-97-2)			0.2	n. d.
多環芳香烴18項總和 / Sum of 18 PAHs			-	n. d.

### 備註(Note) :

1. mg/kg = milligram per kilogram
2. MDL = Method Detection Limit (方法偵測極限值)
3. n. d. = Not Detected (未檢出)
4. "-" = Not Regulated (無規格值)

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德國產品安全委員會(AfPS) GS PAHs 要求 /

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

項目 (Parameter)	第1類(Category 1)	第2類(Category 2)		第3類(Category 3)	
	意圖放入嘴內的材料或玩具會與皮膚有所接觸(超過30秒). (Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).)	不屬於第1類的材料並可預見與皮膚接觸逾30秒(長期或經常與皮膚接觸). (Materials not falling under category 1 with foreseeable contact to skin for longer than 30 seconds (long-term skin or frequent contact).)		可預見與皮膚接觸短於30秒(短期與皮膚接觸), 以及不屬於第1類或第2類的材料. (Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 seconds (short-term skin contact).)	
		列於2009/48/EC 之玩具 (Toy under 2009/48/EC)	列於德國產品安全 法之其他產品 (Other products under ProdSG)	列於2009/48/EC 之玩具 (Toy under 2009/48/EC)	列於德國產品安全 法之其他產品 (Other products under ProdSG)
Naphthalene	< 1	< 2		< 10	
Acenaphthylene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Acenaphthene					
Fluorene					
Phenanthrene					
Anthracene					
Fluoranthene					
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
18項PAH總濃度 (Sum of 18 PAH)	< 1	< 5	< 10	< 20	< 50

單位(Unit) : mg/kg

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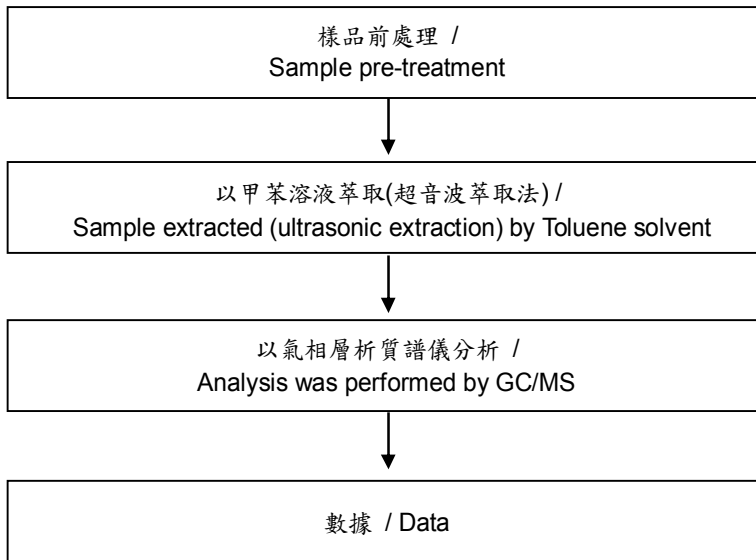
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### 多環芳香烴分析流程圖 /

### Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)

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



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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.)

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\*\* 報告結尾(End of Report) \*\*