

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

頁數：1 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下：

樣品名稱：聚苯乙烯樹脂
樣品型號：TAIRIREX HP8250
收件日期：2009/12/21
測試期間：2009/12/21 TO 2009/12/25

=====
測試需求：(1) 15項高關注物質(SVHC)篩檢。高關注物質(SVHC)候選清單是根據歐洲化學總署(ECHA)於2008年10月28日，就關於REACH之Regulation (EC) No 1907/2006的公告。

(2) 15項高關注物質(SVHC)篩檢。高關注物質(SVHC)第二版建議清單是根據歐洲化學總署(ECHA)於2009年09月01日，就關於REACH之Regulation (EC) No 1907/2006的公告。

測試方法：請見下一頁。

測試結果：請見下一頁。

Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report 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 instructions, 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. 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.

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

頁數：2 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



測試結果

測試部位 NO.1 : 白色塑膠粒

(1) 15項高關注物質(SVHC)候選清單

測試項目	單位	測試方法	方法偵測 極限值	結果
				NO.1
蔥 (CAS No.: 000120-12-7)	mg/kg	參考ZLS standard ZEK 01.2-08方法, 以氣相層析質譜儀(GC/MS)檢測.	0.2	n.d.
4,4' - 二氨基二苯甲烷 (CAS No.: 000101-77-9)	mg/kg	參考EN 14362-1: 2003方法, 以氣相層析質譜儀(GC/MS)檢測.	3	n.d.
鄰苯二甲酸二丁酯 (DBP) (CAS No.: 000084-74-2)	%	參考EN 14372, 以氣相層析儀質譜儀(GC/MS)檢測.	0.003	n.d.
鄰苯二甲酸甲苯基丁酯 (BBP) (CAS No.: 000085-68-7)	%	參考EN 14372, 以氣相層析儀質譜儀(GC/MS)檢測.	0.003	n.d.
鄰苯二甲酸二(2-乙基己基)酯 (DEHP)	%	參考EN 14372, 以氣相層析儀質譜儀(GC/MS)檢測.	0.003	n.d.
二甲苯麝香 (CAS No.: 000081-15-2)	mg/kg	參考US EPA 3550C: 1996方法, 以氣相層析質譜儀(GC/MS)檢測.	10	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) (CAS No.: 025637-99-4 and 003194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考US EPA 3540C: 1996方法, 以氣相層析質譜儀(GC/MS)檢測.	5	n.d.
短鏈氯化石蠟 (CAS No.: 085535-84-8)	mg/kg	參考US EPA 3540C: 1996方法, 以氣相層析質譜儀(GC/MS)檢測.	100	n.d.
三丁基錫氧化物*** (CAS No.: 000056-35-9)	mg/kg	參考ISO 17353: 2004方法, 以氣相層析儀/火焰光度偵測器(GC/FPD)檢測.***	-	n.d.
二氯化鈷 (CAS No.: 007646-79-9)	mg/kg	參考SGS內部方法RSTS-EE-SVHC-002, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測.	5	n.d.
五氧化二砷*** (CAS No.: 001303-28-2)	mg/kg	參考US EPA 3052: 1996方法, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測.***	-	n.d.
三氧化二砷*** (CAS No.: 001327-53-3)	mg/kg	參考US EPA 3052: 1996方法, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測.***	-	n.d.
三乙基砷酸鹽*** (CAS No.: 015606-95-8)	mg/kg	參考US EPA 3052: 1996方法, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測.***	-	n.d.
砷酸氫鉛*** (CAS No.: 007784-40-9)	mg/kg	參考US EPA 3052: 1996方法, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測.***	-	n.d.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明, 此報告結果僅對測試之樣品負責。本報告未經本公司書面許可, 不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report 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 instructions, 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. 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.

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

頁數：3 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



測試項目	單位	測試方法	方法偵測 極限值	結果
				NO.1
重鉻酸鈉*** (CAS No.: 010588-01-9(*))	mg/kg	參考US EPA 3060A: 1996方法, 以UV-VIS做 分析.***	-	n.d.

(2) 15項高關注物質(SVHC)第二版建議清單

測試項目	單位	測試方法	方法偵測 極限值	結果
				NO.1
蔥油(CAS No.: 090640-80-5) (**)	%	參考ZLS standard ZEK 01.2-08方法, 以氣 相層析質譜儀(GC/MS)檢測.	0.05	n.d.
蔥油, 蔥糊, 輕油 (CAS No.: 091995-17-4) (**)	%	參考ZLS standard ZEK 01.2-08方法, 以氣 相層析質譜儀(GC/MS)檢測.	0.05	n.d.
蔥油, 蔥糊, 蔥餾分 (CAS No.: 091995-15-2) (**)	%	參考ZLS standard ZEK 01.2-08方法, 以氣 相層析質譜儀(GC/MS)檢測.	0.05	n.d.
蔥油, 含蔥量少 (CAS No.: 090640-82-7) (**)	%	參考ZLS standard ZEK 01.2-08方法, 以氣 相層析質譜儀(GC/MS)檢測.	0.05	n.d.
蔥油, 蔥糊 (CAS No.: 090640- 81-6) (**)	%	參考ZLS standard ZEK 01.2-08方法, 以氣 相層析質譜儀(GC/MS)檢測.	0.05	n.d.
煤瀝青, 高溫 (CAS No.: 065996- 93-2) (**)	%	參考ZLS standard ZEK 01.2-08方法, 以氣 相層析質譜儀(GC/MS)檢測.	0.05	n.d.
丙烯醯胺 (CAS No.: 000079-06- 1)	%	參考US EPA 3550C方法, 以液相層析/質譜 儀(LC/MS)檢測.	0.005	n.d.
鄰苯二甲酸二異丁酯 (DIBP) (CAS No.: 000084-69-5)	%	參考EN 14372: 2004, 以氣相層析儀質譜儀 (GC/MS)檢測.	0.005	n.d.
2,4-二硝基甲苯 (CAS No.: 000121-14-2)	%	參考US EPA 3550C方法, 以氣相層析/質譜 儀(GC/MS)檢測.	0.005	n.d.
磷酸三(2-氯乙基)酯 (TCEP) (CAS No.: 000115-96-8)	%	參考US EPA 3550C方法, 以氣相層析/質譜 儀(GC/MS)檢測.	0.005	n.d.
矽酸鋁, 耐火陶瓷纖維	%	參考US EPA 3550C方法, 以液相層析/質譜 儀(LC/MS)檢測.	0.05	n.d.
鋁矽酸鋁, 耐火陶瓷纖維	%	參考US EPA 3550C方法, 以液相層析/質譜 儀(LC/MS)檢測.	0.05	n.d.
鉻酸鉛 (CAS No.: 007758-97-6)	%	參考US EPA 3550C方法, 以液相層析/質譜 儀(LC/MS)檢測.	0.01	n.d.
鉬鉻紅; 顏色索引: 顏料紅半104 (CAS No.: 012656-85-8)	%	參考US EPA 3550C方法, 以液相層析/質譜 儀(LC/MS)檢測.	0.01	n.d.
鉻酸鉛; 顏色索引: 顏料黃34 (CAS No.: 001344-37-2)	%	參考US EPA 3550C方法, 以液相層析/質譜 儀(LC/MS)檢測.	0.01	n.d.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company.
除非另有說明, 此報告結果僅對測試之樣品負責。本報告未經本公司書面許可, 不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, 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. 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.

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

頁數：4 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



備註：

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. n.d.= not detected = below Method detection Limit / 未檢出
3. MDL = Method Detection Limit / 方法偵測極限值
4. (*): 重鉻酸鈉二水合物(CAS No.: 007789-12-0)含量 = 重鉻酸鈉含量 × 1.1374
5. "-" = Not Regulated / 無規格值
6. (**): 上述混合物的濃度是經由所獲得的成分比例介於被選擇標靶物及混合物所推估出來。
7. ***: 該物質是由"三丁基錫"或各別元素(例如: 砷、鉛或六價鉻)之測試結果計算得知。
其MDL是針對"三丁基錫"或元素(例如: 砷、鉛或六價鉻)之評估。

$$AX = A \times F$$

AX	A	F
五氧化二砷	砷	1.5339
三氧化二砷		1.3203
三乙基砷酸鹽		3.0179
砷酸氫鉛		4.6332
重鉻酸鈉	六價鉻	1.6753
三丁基錫氧化物	三丁基錫	2.5192
		1.0276

"砷酸氫鉛"之濃度是取砷及鉛兩者各別換算出砷酸氫鉛濃度，並取其之最小值做為最後出報告之依據。

測試結果如下：

測試項目	單位	測試方法	方法偵測極限值	結果
				NO.1
三丁基錫 (CAS No.: 000688-73-3)	mg/kg	參考ISO 17353: 2004方法, 以氣相層析儀/火焰光度偵測器(GC/FPD)檢測。	0.03	n.d.
砷	mg/kg	參考US EPA 3052:1996方法, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測。	2	n.d.
鉛	mg/kg	參考US EPA 3052:1996方法, 以感應耦合電漿原子發射光譜儀(ICP-AES)檢測。	2	n.d.
六價鉻	mg/kg	參考US EPA 3060A:1996方法, 以UV-VIS做分析。	2	n.d.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明, 此報告結果僅對測試之樣品負責。本報告未經本公司書面許可, 不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report 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 instructions, 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. 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.

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

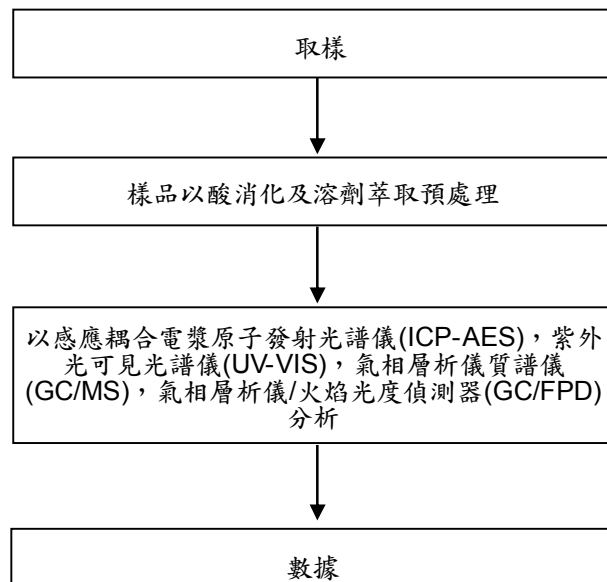
頁數：5 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



SVHC 分析流程圖

- 1) 測試人員：翁賜彬/傅莉雅/周穗華/楊登偉
- 2) 測試負責人：龔振裕



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report 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 instructions, 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. 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.

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

頁數：6 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report 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 instructions, 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. 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.

測試報告

號碼：CR/2009/C0192A

日期：2009/12/25

頁數：7 of 7

台灣化學纖維股份有限公司
台北市敦化北路201號



附錄 A

- 15項SVHC化學分析，依歐洲化學總署(ECHA)於2008年10月28日所公佈的清單(請參照以下網址內容)，藉由現有的分析技術進行篩檢，這清單是由ECHA所評估且未來可受更改。
請參照 http://echa.europa.eu/consultations/authorisation/svhc/svhc_cons_en.asp.
- 依照REACH規範(EC) No 1907/2006 第31條之1，一物質或製備的提供者應提供一物質或製備的領受者依據附錄II編輯的安全資料表：
 - 其中該物質或製備依照Directive 67/548/EEC或1999/45/EC符合分類為危險物質的標準；或
 - 其中該物質依照附錄十三設定的標準為PBT或vPvB物質；或
 - 其中該物質是以(a)及(b)項外的其它理由，列在依照第59(1)所立的清單中。
- 依照REACH規範(EC) No 1907/2006 第31條之3，提供者應提供領受者依據附錄II 編輯的安全資料表，其中某些製備不符合依照Directive1999/45/EC第五、六及七條所設的分類為危險物質的標準，但包含：
 - 在其非氣相製備(個別重量百分比 $\geq 1\%$)或氣相製備(個別體積百分比 $\geq 0.2\%$)中至少一種對人體或環境危害的物質；或
 - 在其非氣相製備(個別重量百分比 $\geq 0.1\%$)中至少一種依附錄十三設定的標準認定為PBT或vPvT的物質，或以(a)項所提及之外的理由已包含在依照第59(1)條建立的清單中之物質；或
 - 具有共同體工作場所暴露限制的物質。
- 倘若SVHC超過限值，建議客戶確認含有該SVHC的零件，並要求實驗室進一步的定量分析而取得SVHC的確切濃度。

** 報告結尾 **

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部分複製。

This Test Report is issued by the Company under its General Conditions of Service printed overleaf or available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report 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 instructions, 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. 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.