

Laboratory Perspectives on Testing RSL Substances

Guidance for RSL Implementation
– AFIRM Vendor Event 2007

Bureau Veritas Consumer Products Services
法国国际检验局消费品服务部

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**BUREAU
VERITAS**

For the benefit of business and people



CORROSIVE
腐蝕性



TOXIC / VERY TOXIC
有毒 / 非常毒

What are they and
how they get into
my products?
為什麼它們會出現在
我的產品中？



HARMFUL / IRRITANT
有害 / 刺激性



Dangerous to Environment
危害環境

WHAT ARE THEY? 它們是什麼?



CORROSIVE
腐蝕性



TOXIC / VERY TOXIC
有毒 / 非常毒

Constituent Materials 建構材料

- PVC 聚氯乙烯
- Nickel in metal 金屬中的鎳
- Chrome VI in tanned leathers

Dyestuffs 染料

- Azodyes 偶氮染料
- Disperse Dyes 擴散性染料
- Cadmium 鎘
- Heavy metals 重金屬



HARMFUL / IRRITANT
有害 / 刺激性



Dangerous to Environment
危害環境



COMMON RESTRICTED SUBSTANCES 常見受管物質

Additives 添加劑

- Organotins 有機錫
- Lead 鉛
- Cadmium 鎘
- Heavy Metals 重金屬
- DSDMAC 二硬脂酰二甲基氯化胺
- AP (OP & NP) 烷基酚
- Phenols 苯酚
- Biocides 生物活躍度

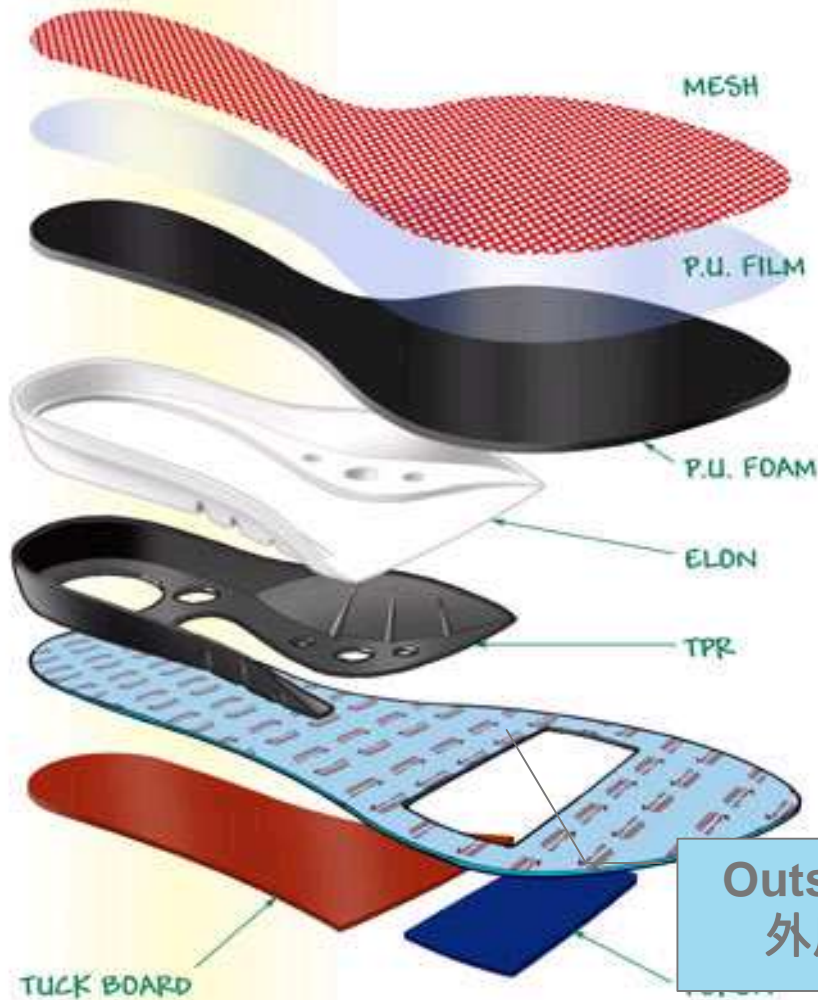
Contaminants 污染物

- Pesticides 殺蟲劑
- Phenols 苯酚
- Flame Retardants 阻燃劑
- PAH/PAK
- Isocyanates
- PCB 多氯聯苯

Process Chemicals 加工用的化學品

- Chromium VI 六價鉻
- Formaldehyde 甲醛
- Phthalates 鄰苯二甲酸鹽
- Chloroparaffins (SCCP)
- APEO 烷基酚乙氧基醇
- PFOS/PFOA
- Solvents
- Chlorine carriers

WHAT ARE THEY? 它們是什麼?



Upper materials
上部材料
Lining 襯裡
Inter Lining 間襯裡
Reinforcements
加固物
Counters 主跟,後幫
Toe Puffs 腳尖墊
Insoles 鞋內底;軟墊
Cover sole 蓋子
Bands 鬆緊帶
Decorations 裝飾
Labels 標籤
Elastics 橡皮帶
Laces 鞋帶
Zippers 拉鍊
Velcro-closures
魔術貼
Etc. 等

Outsole
外底

Outsole 外底
Mid sole 中底
Heel 鞋跟
Top Lift 頂面

MATERIALS 材料

Leather 皮革
Synthetic PU 合成聚氨酯
Textiles 紡織品
Sockliners 襪襯墊
Latex 乳膠
Rubber 橡膠
EVA Foam
乙基乙烯基醋酸鹽 泡沫橡膠
Plastics 塑料
Ink/Paints 油墨 / 油漆
Adhesives 膠黏劑
Metals 金屬
Others 其他

Material specific RS (High Risk)

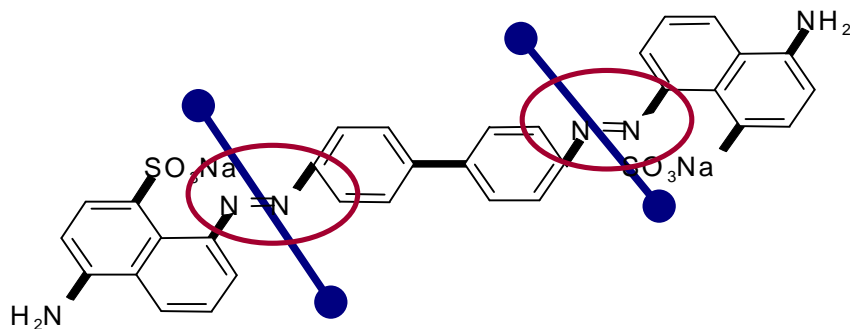
THIS IS ONLY AN EXAMPLE!!	Material Type							
	Natural material ¹ 天然物料	Synthetic and Blend material ² 人工合成及混合物料	Leather 皮革	PU flake leather 聚氨酯假皮革	Print 圖案	Metal 金屬	Hard plastic 硬膠	Soft plastic 軟膠
Cr (VI) 六價鉻			X					
APEO 烷基酚乙氧基醇	X	X	X	X	X		X	X
PCP/TeCP/TriCP/O PP五氯苯酚/四氯 苯酚/三氯苯酚/磷 本基酚	X	X	X		X			
Azo dyes 偶氮染料	X	X	X	X	X			
Carcinogenic Dyes 致癌染料	X	X	X	X	X		X	
Allergenic Dyes 致敏染料		X		X	X			X
Chloro-organic carrier content 氯化有机傳遞劑	X	X	X	X	X			
Organotins 有機錫	X	X	X	X	X		X	X
Nickel Release 鎳釋放量						X		
Lead 鉛				X		X		



An example of RS

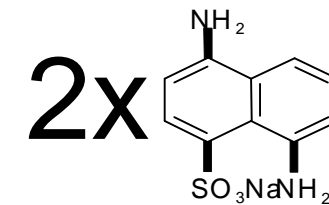
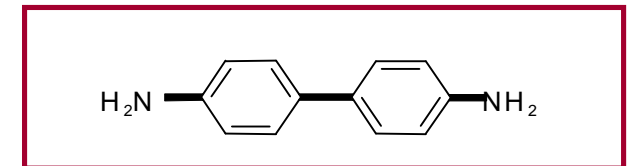
- Azo dyes incorporate one or several azo group (-N=N-) bound with aromatic compounds. Some of the amines (22 EC banned) cleavage from azo colorants may be carcinogenic or potential carcinogens.
偶氮染料是指在其化學結構中具有一組或多於一組偶氮組(N=N)。不是所有偶氮染料都是禁用的，只有那些經過分裂過程而產生出有致癌物質的胺化合物(22種)才受到管制

Congo red 剛果紅



Sodium
Dithionite
REDUCTION →

Benzidine: (Carcinogenic 致癌)



Related Legislations 相關法例

- 2002/61/EC - Maximum permissible limit 最高可允許的限制: 30 mg/kg (ppm)
- GB 18401 - Maximum permissible limit 最高可允許的限制: 20 mg/kg (ppm)

Test methods 測試方法

- EN 14362-1: 2003(紡織品) GB/T 17592.1 (GCMS)
- EN 14362-2: 2003 (人造纖維)
- ISO 17234: 2003 (染色皮革品)

Solution 解決方案

- Review ingredients 檢閱成份

Inductively Coupled Plasma Spectroscopy (ICP)

Heavy metals 重金屬

e.g., Lead鉛, Cadmium鎘, Mercury汞, Chromium鉻, Nickel鎳, & etc.



Misc. (UV, FTIR)

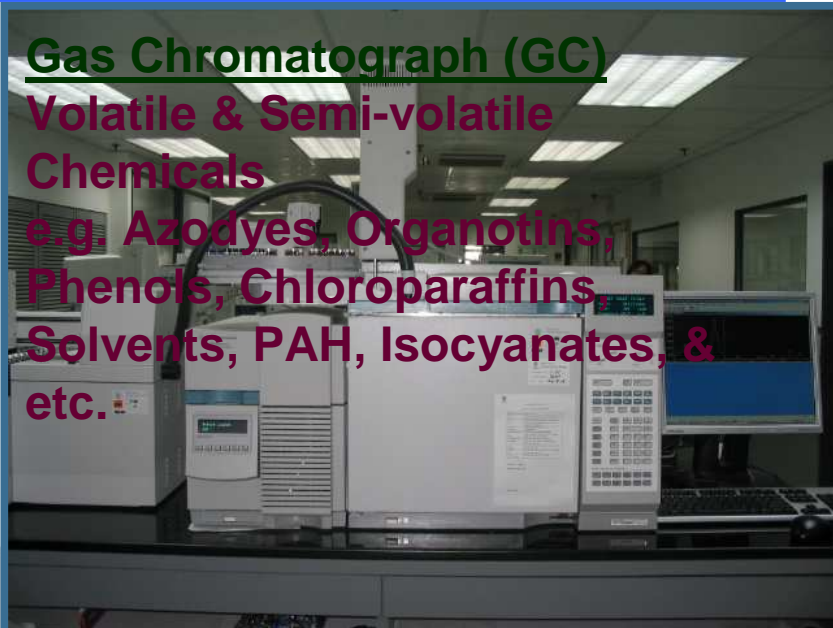
Formadehyde 甲醛, PVC 聚氯乙烯, & etc.



Gas Chromatograph (GC)

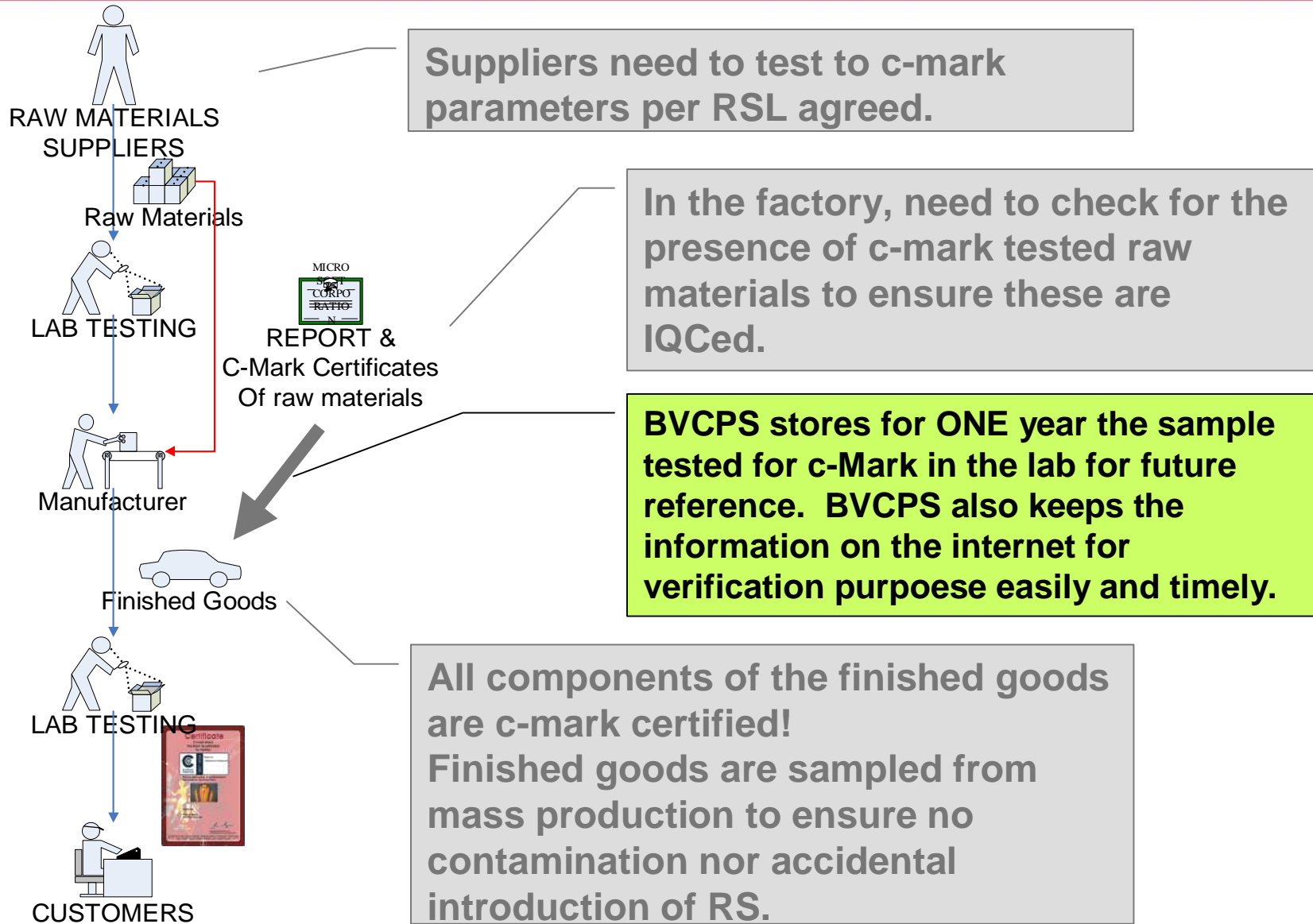
Volatile & Semi-volatile Chemicals

e.g. Azodyes, Organotins, Phenols, Chloroparaffins, Solvents, PAH, Isocyanates, & etc.



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C-mark Certification Process



C-mark Certification Process

RAW MATERIALS SUPPLIERS

供應商需按“受管制物质列表”內之項目進行 c-mark 測試。

Raw Materials

在工廠內，所有已進行c-mark 測試之原料必須接受檢查，以確保它們合乎進口品質監控要求

LAB TESTING

MICRO REPORT & C-Mark Certificates Of raw materials

立德國際會把各進行c-mark測試之樣辦保留一年以供將來參考之用，並會把資料上載到互聯網以提供方便快捷的認證方法

Manufacturer

Finished Goods

所有成品之組件均獲得c-mark 認可資格！各測試用之成品樣辦均由主生產線中抽取，以確保各生產之成品沒有玷污或偶然的受限物質存在。

LAB TESTING

CUSTOMERS



BUREAU VERITAS

C-Mark Certification

- ▶ **Quality label of Bureau Veritas for consumer products, 立
德國際之品質標籤**
- ▶ **Apply on all types of products including apparel, footwear
and electrical products,**
應用於各種產品, 如服裝, 鞋類 及 電子產品
- ▶ **Composes of two levels, c-Marks Black and Red**
兩個組成的標準, c-Marks 黑和紅
 - Black – covers the important restricted substances laws and
corresponding regulations;
黑 – 覆蓋各種嚴重受限物質之法規及相關條例
 - Red – covers more sophisticated restricted substances and
eco requirements;
紅 - 覆蓋各種更複雜精密之受限物質及環境規定
- ▶ **C-Mark can apply on both raw materials, components and
finished products.**




c-mark 可應用於原材料, 組件 及 成品.


C-Mark Example

- ▶ **c-mark certification process is done according to the production lot (c-mark 檢定过程在產品生產中完成)**
- ▶ **The c-mark label contains the manufacturer code, certification no., date of certification, and category of certification, c-mark 標籤包含製造公司代號, 證書號碼, 簽發日期 及 種類**
- ▶ **Certificate will be issued after the whole process completed, 證書会在所有程序完成後簽發**
- ▶ **The c-mark number is uniquely coded and can be searched on internet to ensure traceability. c-mark 編號是個獨特地編碼的, 並可以從互聯網中搜尋以確保可追蹤得到**


Certificate
C-mark black
The Basic Qualitylabel
for Textiles

 BUREAU VERITAS	DE07 - 001200	Tested for: - Hazardous Substances
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Product Description of Certified Batch:
Raw Material: Synthetic Fibre



Applicant:
Date of issue:
Valid for one year


Signature
www.cps.bureauveritas.com
C-MarkMail@de.bureauveritas.com

THE AMERICAS: Canada • Dominican Republic • Guatemala • Mexico • The United States EUROPE: France
Germany • Turkey • United Kingdom ASIA: Australia • Bangladesh • China • Hong Kong • India • Indonesia
Japan • Korea • Phillipines • Singapore • Sri Lanka • Taiwan • Thailand • Vietnam

Need to know what're in your products

必須知道你的產品內含有什麼

- Need to understand what risk of RS each material brings in
必須知道各物料之受管制物质的潛藏危險性
- Once identified, need to set up QA program to control so by
一經鑑定, 必須成立品質保證計劃以作控制
 - » Looking for chemical replacements that would help to eliminate the targeted RS 找尋合適之化學代替品以減少已規定的受管制物质指標
 - » Testing scheduled to get information about potential RS contamination for 安排測試以搜集以下產品受管制物质潛在污染的资料
 - Raw materials (c-mark program) 原材料 (c-mark 計劃)
 - Finished goods (During Production check) 製成品 (在生產過程中進行檢查)
 - » Implement chemical management system in manufacturing processes to reduce chance of having RS
在生產過程中推行化學品管理系統以減少含有受管制物质的机会

Peace of mind from the due diligence done

盡職審查, 便能心安理得

