

測試報告 Test Report

號碼(No.): CE/2011/16255

日期(Date): 2011/02/08

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HITACHI CABLE, LTD. TSUCHIURA WORKS

3550 KIDAMARI-CHO TSUCHIURA-SHI IBARAKI JAPAN



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 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : COPPER BASE METAL;HCL-12S(12SOFC)/HITACHI CABLE
收件日期(Sample Receiving Date) : 2011/01/28
測試期間(Testing Period) : 2011/01/28 TO 2011/02/08

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測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修定指令要求. (In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).

測試方法(Test Method) : 參考 IEC 62321: 2008 方法檢測. (With reference to IEC 62321: 2008. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).

- (1) 以感應耦合電漿原子發射光譜儀檢測鎘含量. / Determination of Cadmium by ICP-AES.
- (2) 以感應耦合電漿原子發射光譜儀檢測鉛含量. / Determination of Lead by ICP-AES.
- (3) 以感應耦合電漿原子發射光譜儀檢測汞含量. / Determination of Mercury by ICP-AES.
- (4) 以 Spot test / boiling water extraction 方法檢測六價鉻含量. / Determination of Hexavalent Chromium by Spot test / boiling water extraction Method.
- (5) 以氣相層析儀/質譜儀檢測多溴聯苯和多溴聯苯醚含量. / Determination of PBB and PBDE by GC/MS.

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所提供樣品的測試結果，符合RoHS(2002/95/EC)及其修定指令之要求 (Based upon the performed tests by submitted samples, the test results comply with the limits of RoHS Directive 2002/95/EC and its subsequent amendments).


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

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測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method (Refer to)	結果 (Result)	方法偵測 極限值 (MDL)	RoHS 限值 (Limit)
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	n.d.	2	1000
汞 / Mercury (Hg)	(3)	n.d.	2	1000
六價鉻 / Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(4)	Negative	See Note 4	#
多溴聯苯總和 / Sum of PBBs	(5)	n.d.	-	1000
一溴聯苯 / Monobromobiphenyl		n.d.	5	-
二溴聯苯 / Dibromobiphenyl		n.d.	5	-
三溴聯苯 / Tribromobiphenyl		n.d.	5	-
四溴聯苯 / Tetrabromobiphenyl		n.d.	5	-
五溴聯苯 / Pentabromobiphenyl		n.d.	5	-
六溴聯苯 / Hexabromobiphenyl		n.d.	5	-
七溴聯苯 / Heptabromobiphenyl		n.d.	5	-
八溴聯苯 / Octabromobiphenyl		n.d.	5	-
九溴聯苯 / Nonabromobiphenyl		n.d.	5	-
十溴聯苯 / Decabromobiphenyl		n.d.	5	-
多溴聯苯醚總和 / Sum of PBDEs		n.d.	-	1000
一溴聯苯醚 / Monobromodiphenyl ether		n.d.	5	-
二溴聯苯醚 / Dibromodiphenyl ether		n.d.	5	-
三溴聯苯醚 / Tribromodiphenyl ether		n.d.	5	-
四溴聯苯醚 / Tetrabromodiphenyl ether		n.d.	5	-
五溴聯苯醚 / Pentabromodiphenyl ether		n.d.	5	-
六溴聯苯醚 / Hexabromodiphenyl ether		n.d.	5	-
七溴聯苯醚 / Heptabromodiphenyl ether		n.d.	5	-
八溴聯苯醚 / Octabromodiphenyl ether		n.d.	5	-
九溴聯苯醚 / Nonabromodiphenyl ether	n.d.	5	-	
十溴聯苯醚 / Decabromodiphenyl ether	n.d.	5	-	

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測試部位描述 (TEST PART DESCRIPTION):

No.1 : 銅色金屬片 (COPPER COLORED METAL SHEET)

備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. Spot-test:
 - Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
 - Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
 - The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed. (當該測項無法確認時, 測試樣品可藉由boiling-water-extraction測試方法進一步確認)
- Boiling-water-extraction:
 - Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
 - Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
 - The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area. / 該溶液濃度 \geq 0.02 mg/kg with 50 cm² (sample surface area)
5. # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as not comply with RoHS requirement. (Positive表示測試區域之六價鉻不符合RoHS要求)
 - Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as comply with RoHS requirement. (Negative表示測試區域之六價鉻符合RoHS要求)
6. "-" = Not Regulated (無規格值)

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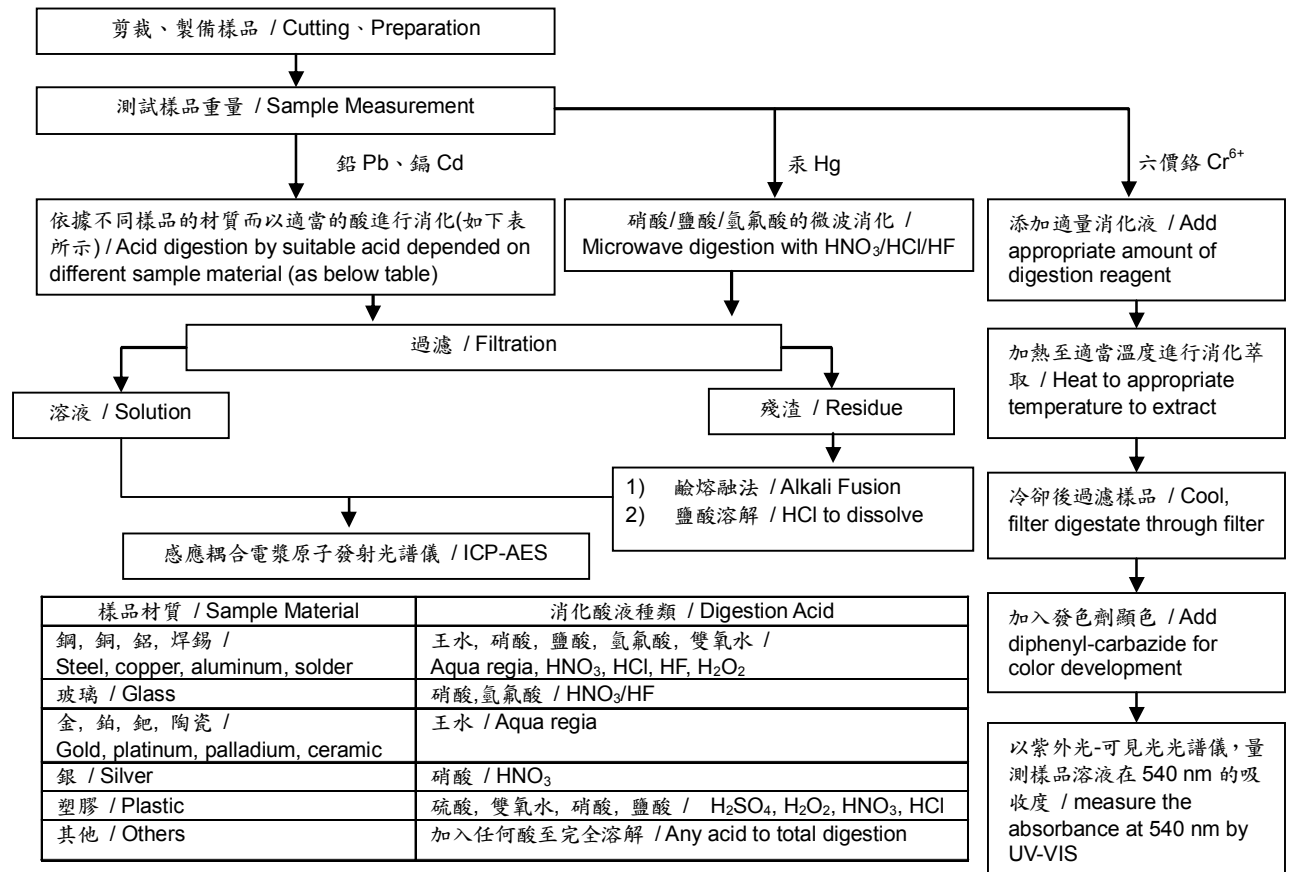
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- 1) 根據以下的流程圖之條件, 樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員: 楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人: 張啓興 / Name of the person in charge of measurement: Troy Chang



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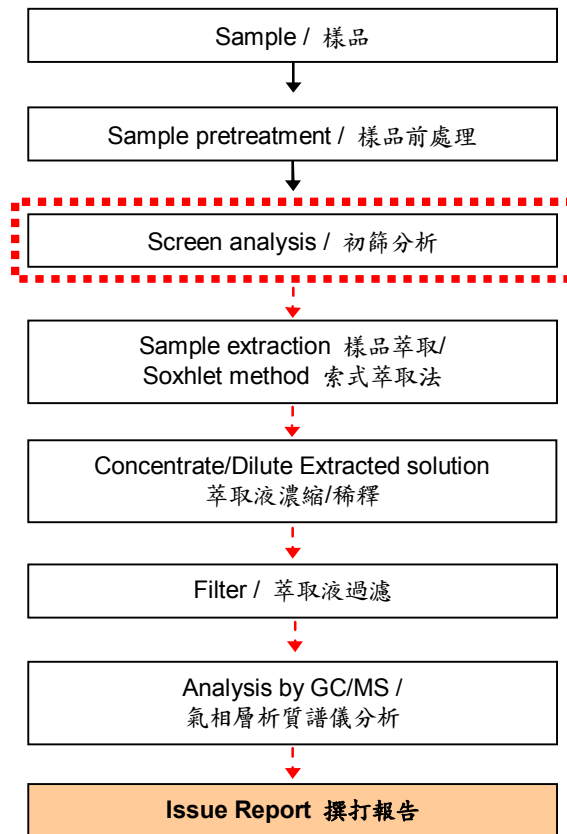
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 1) 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 2) 測試負責人: 張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process —————>

選擇性篩檢程序 / Optional screen process>

確認程序 / Confirmation process - - - - ->



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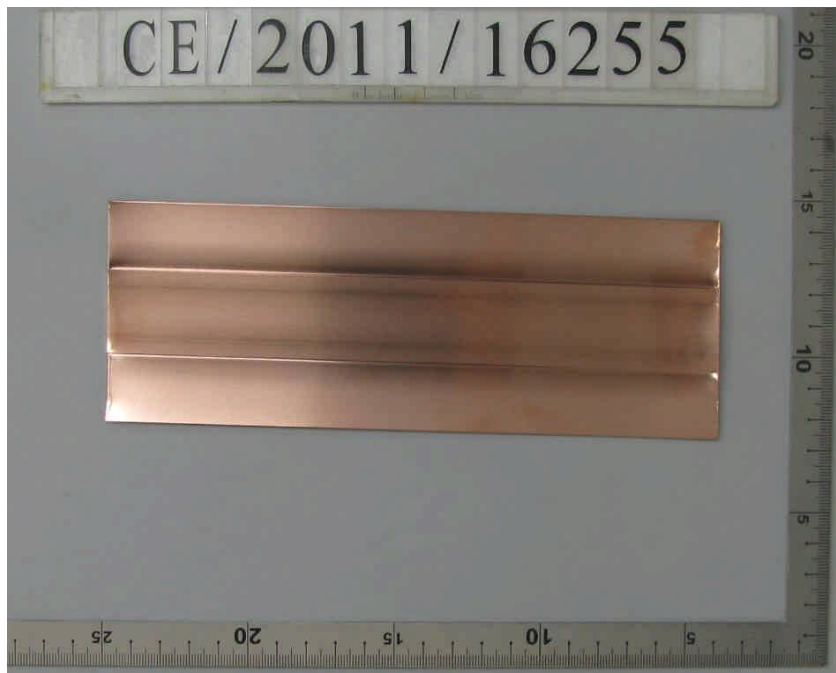
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** 報告結尾(End of Report) **

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