



Mag Layers Scientific-Technics., Co., Ltd

Material Description

Mag. Layers certify below statement for material description.

Component type

Ultra High Current Power Inductors MMD-N 、 H / MLD / MMF / FPD SERIES

Description:

- Comply with Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).
- Comply with the request for Halogen Free limit.

The limit as below :

Cl : 900 ppm

Br : 900 ppm

Total halogens contained : 1500 ppm

Material:

Name of material	Pb	Cd	Hg	Cr+6	PBBs	PBDEs	Br	Cl	Report NO
CORE	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	CE/2014/64358
WIRE	N.D	N.D	N.D	Negative	N.D	N.D	--	--	CE/2014/B2065
BASE	12ppm	N.D	N.D	Negative	N.D	N.D	N.D	N.D	WUXH00022508
INK	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	ECL01G031248004R1 ECL01G031248006

測試報告 Test Report

號碼(No.) : CE/2014/64358

日期(Date) : 2014/06/30

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美磊科技股份有限公司

MAG. LAYERS SCIENTIFIC-TECHNICS CO., LTD.

新竹縣湖口鄉新竹工業區自強路18號

18 TZ-CHIANG RD., HSIN-CHU INDUSTRIAL PARK, HUKOU, HSIN-CHU, TAIWAN 303, 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) : 美磊科技股份有限公司 (MAG. LAYERS SCIENTIFIC-TECHNICS CO., LTD.)
 樣品名稱(Sample Description) : POWDER-N / C6 TYPE
 樣品型號(Style/Item No.) : MMD-N、H/MLV/MVI/MLD/MMF/FPD/SPV/MGA
 收件日期(Sample Receiving Date) : 2014/06/23
 測試期間(Testing Period) : 2014/06/23 TO 2014/06/30

=====
 測試需求(Test Requested) : (1) 依據客戶要求, 參考RoHS 2011/65/EU Annex II 指令進行鎘, 鉛, 汞, 六價鉻, 多溴聯苯, 多溴聯苯醚測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.)
 (2) 依據客戶指定, 進行鹵素-氯、溴測試. (As specified by client, to test Halogen-Chlorine, Bromine contents in the submitted sample.)

測試方法(Test Method) : 請見下一頁 (Please refer to next pages).

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

結論(Conclusion) : (1) 根據客戶所提供的樣品, 其鎘, 鉛, 汞, 六價鉻, 多溴聯苯, 多溴聯苯醚的測試結果符合RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)


 Edison Chang / Sr. Supervisor
 Signed for and on behalf of
 SGS TAIWAN LTD.
 Chemical Laboratory – Taipei

測試報告

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美磊科技股份有限公司

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測試結果(Test Results)

測試部位(PART NAME) No.1 : 灰色粉末 (GRAY POWDER)

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)	法規 限值 (Limit)
				No.1	
鎘 / Cadmium (Cd)	mg/kg	參考 IEC 62321-5: 2013 方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	100
鉛 / Lead (Pb)	mg/kg	參考 IEC 62321-5: 2013 方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	1000
汞 / Mercury (Hg)	mg/kg	參考 IEC 62321-4: 2013 方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考 IEC 62321: 2008 方法, 以 UV-VIS 檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	1000
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg	參考 BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.	-
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	參考 BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.	-

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美磊科技股份有限公司

MAG. LAYERS SCIENTIFIC-TECHNICS CO., LTD.

新竹縣湖口鄉新竹工業區自強路18號

18 TZ-CHIANG RD., HSIN-CHU INDUSTRIAL PARK, HUKOU, HSIN-CHU, TAIWAN 303, R. O. C.



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	法規 限值 (Limit)
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法，以氣相層析/質譜儀檢測。 / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	1000
一溴聯苯 / Monobromobiphenyl			5	n.d.	-
二溴聯苯 / Dibromobiphenyl			5	n.d.	-
三溴聯苯 / Tribromobiphenyl			5	n.d.	-
四溴聯苯 / Tetrabromobiphenyl			5	n.d.	-
五溴聯苯 / Pentabromobiphenyl			5	n.d.	-
六溴聯苯 / Hexabromobiphenyl			5	n.d.	-
七溴聯苯 / Heptabromobiphenyl			5	n.d.	-
八溴聯苯 / Octabromobiphenyl			5	n.d.	-
九溴聯苯 / Nonabromobiphenyl			5	n.d.	-
十溴聯苯 / Decabromobiphenyl			5	n.d.	-
多溴聯苯醚總和 / Sum of PBDEs			-	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.	-
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.	-
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.	-

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. "-" = Not Regulated (無規格值)

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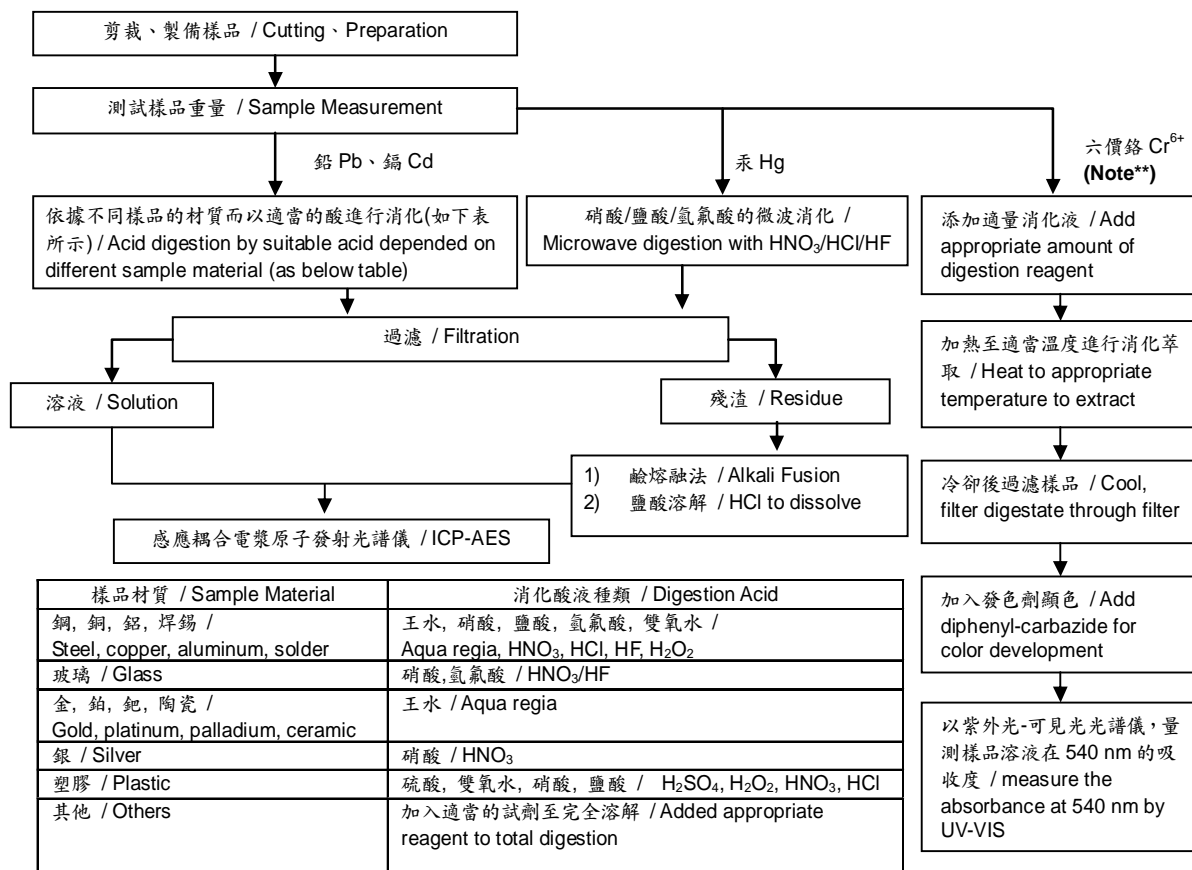
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張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



Note:** (1) 針對非金屬材料加入鹼性消化液, 加熱至 90~95°C 萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.
(2) 針對金屬材料加入純水, 加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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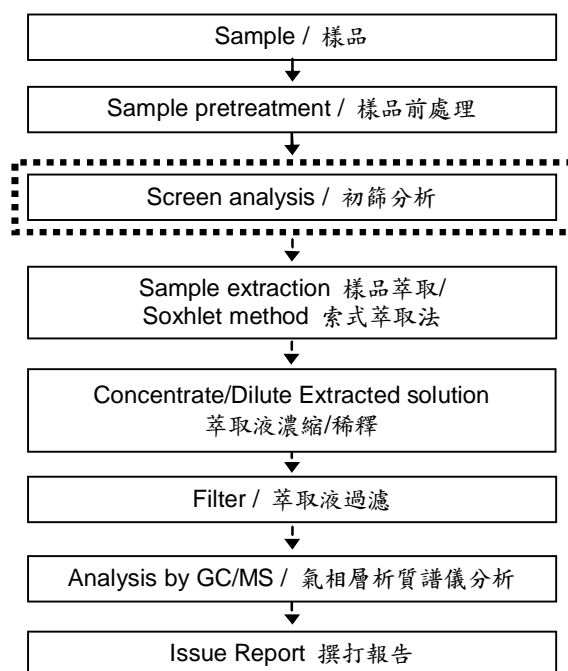
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 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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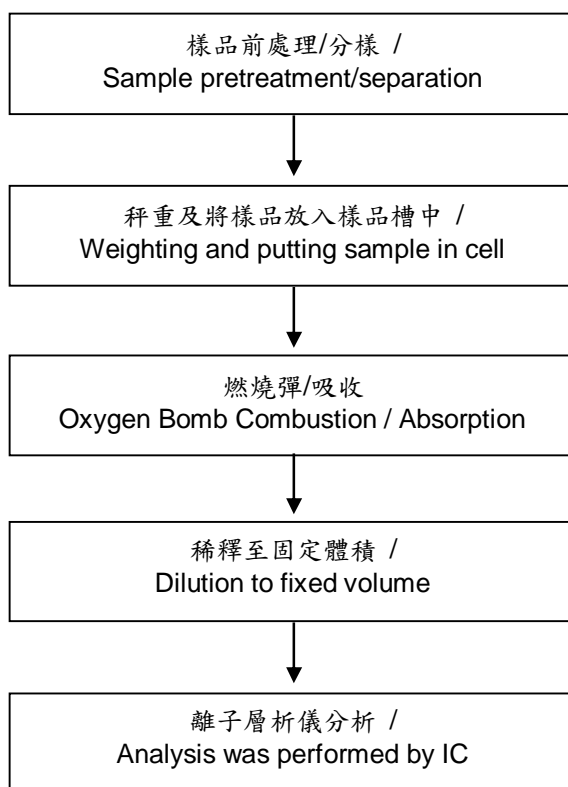
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鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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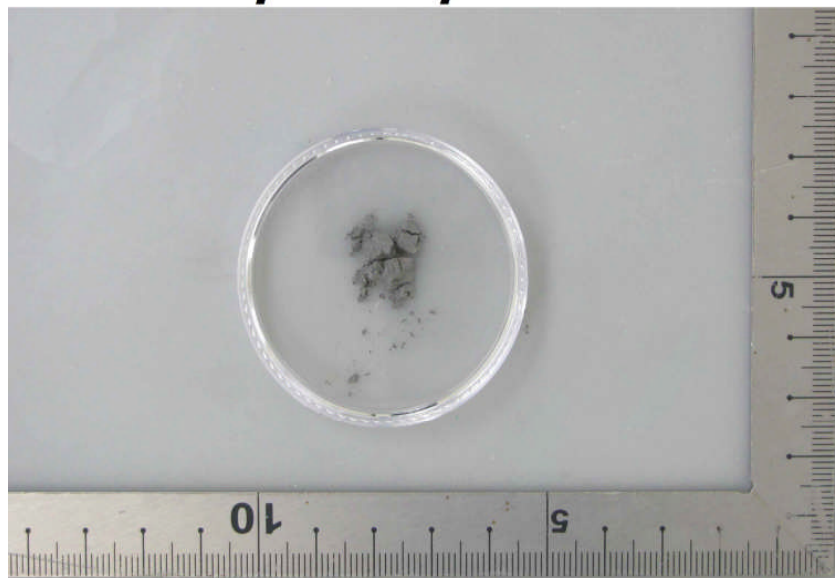
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* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。*
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2014/64358



** 報告結尾(End of Report) **

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測試報告

號碼(No.) : CE/2014/B2065

日期(Date) : 2014/12/01

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Test Report

太平洋電線電纜股份有限公司-ME

PACIFIC ELECTRIC WIRE & CABLE CO., LTD.

桃園縣大溪鎮南興里仁和路二段269號

25F., NO.95, SEC.2, DUNHUA S. RD., DA-AN DISTRICT, TAIPEI, CITY 106. TAIWAN



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) : 太平洋電線電纜股份有限公司 (PACIFIC ELECTRIC WIRE & CABLE CO., LTD.)

樣品名稱(Sample Description) : COPPER ROD (銅條)

樣品型號(Style/Item No.) : $\phi 8$ mm

收件日期(Sample Receiving Date) : 2014/11/25

測試期間(Testing Period) : 2014/11/25 TO 2014/12/01

=====
測試需求(Test Requested) : 依據客戶要求, 參考RoHS 2011/65/EU Annex II 指令進行鎘, 鉛, 汞, 六價鉻, 多溴聯苯, 多溴聯苯醚測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.)

測試方法(Test Method) : 請見下一頁 (Please refer to next pages).

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


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

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Test Report

太平洋電線電纜股份有限公司-ME

PACIFIC ELECTRIC WIRE & CABLE CO., LTD.

桃園縣大溪鎮南興里仁和路二段269號

25F., NO.95, SEC.2, DUNHUA S. RD., DA-AN DISTRICT, TAIPEI, CITY 106. TAIWAN



測試結果(Test Results)

測試部位(PART NAME)No.1 : 銅色金屬 (COPPER COLORED METAL)

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
鎘 / Cadmium (Cd)	mg/kg	參考 IEC 62321-5: 2013 方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考 IEC 62321-5: 2013 方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考 IEC 62321-4: 2013 方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	**	參考 IEC 62321: 2008 方法, 以沸水萃取法檢測. / With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative
多溴聯苯總和 / Sum of PBBs	mg/kg	參考 IEC 62321: 2008 方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
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	mg/kg		5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.
八溴聯苯 / Octabromobiphenyl	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.

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PACIFIC ELECTRIC WIRE & CABLE CO., LTD.

桃園縣大溪鎮南興里仁和路二段269號

25F., NO.95, SEC.2,DUNHUA S. RD., DA-AN DISTRICT, TAIPEI, CITY 106. TAIWAN



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
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	參考 IEC 62321: 2008 方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
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	mg/kg		5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether	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.

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. "-" = Not Regulated (無規格值)
5. ** = Qualitative analysis (No Unit) 定性分析(無單位)
6. # =
 - a. Positive means the presence of CrVI on the tested areas
(Positive表示測試區域偵測到六價鉻)
 - b. Negative means the absence of CrVI on the tested areas
(Negative表示測試區域未偵測到六價鉻)

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² tested areas. / 該溶液濃度 \geq 0.02 mg/kg with 50 cm² (tested areas)

測試報告

號碼(No.) : CE/2014/B2065

日期(Date) : 2014/12/01

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Test Report

太平洋電線電纜股份有限公司-ME

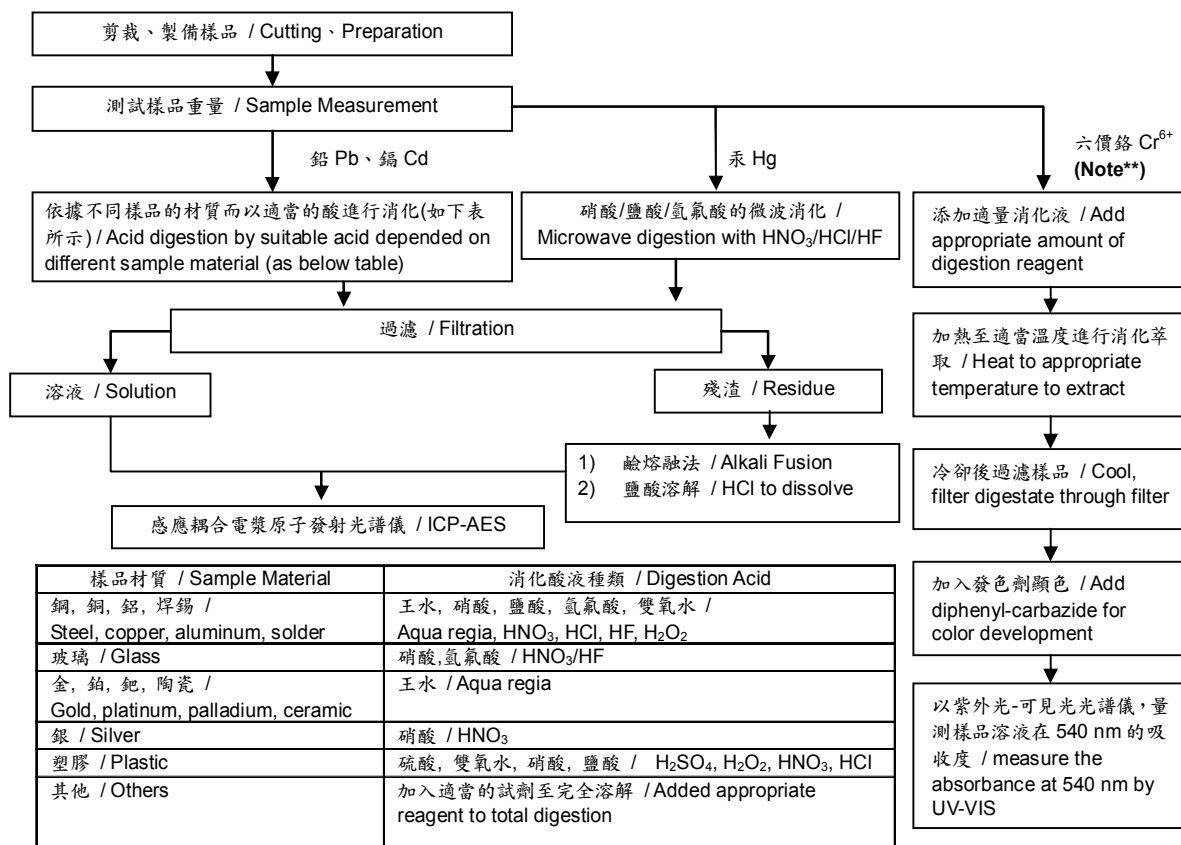
PACIFIC ELECTRIC WIRE & CABLE CO., LTD.

桃園縣大溪鎮南興里仁和路二段269號

25F., NO.95, SEC.2, DUNHUA S. RD., DA-AN DISTRICT, TAIPEI, CITY 106. TAIWAN



- 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



Note:** (1) 針對非金屬材料加入鹼性消化液，加熱至 90~95℃ 萃取。 / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
 (2) 針對金屬材料加入純水，加熱至沸騰萃取。 / For metallic material, add pure water and heat to boiling.

測試報告

Test Report

號碼(No.) : CE/2014/B2065

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太平洋電線電纜股份有限公司-ME

PACIFIC ELECTRIC WIRE & CABLE CO., LTD.

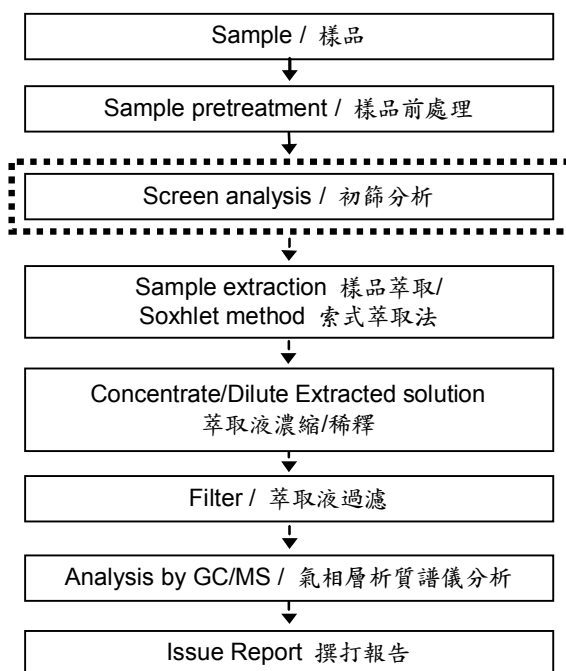
桃園縣大溪鎮南興里仁和路二段269號

25F., NO.95, SEC.2,DUNHUA S. RD., DA-AN DISTRICT, TAIPEI, CITY 106. TAIWAN



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

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 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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測試報告

Test Report

號碼(No.) : CE/2014/B2065

日期(Date) : 2014/12/01

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太平洋電線電纜股份有限公司-ME

PACIFIC ELECTRIC WIRE & CABLE CO., LTD.

桃園縣大溪鎮南興里仁和路二段269號

25F., NO.95, SEC.2, DUNHUA S. RD., DA-AN DISTRICT, TAIPEI, CITY 106. TAIWAN



* 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.)

CE/2014/B2065



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Number : WUXH00022508

Applicant : KUN SHAN GANG YU ELECTRONICS CO.,LTD
NO.01, JINHUA VILLAGE, ZHANGPU
TOWN, KUNSHAN CITY, JIANGSU, CHINA
Attn : LI TANGYUN

Date : May 30, 2014

Sample Description As Declared:
Four(4) Pieces Of Submitted Sample Said To Be : **Metal With White Plating.**
Item Name : Base & Clip Series.
Material : C1100, Ni, Sn.

Tests Conducted:
As Requested By The Applicant, For Details Refer To Attached Pages

Conclusion:		
<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Sample	Restriction Of The Use Of Certain Hazardous Substance In Electrical And Electronic Equipment (RoHS Directive 2011/65/EU)	Pass

Prepared And Checked By:
For Intertek Testing Services Wuxi Ltd.

Jessica Lu
General Manager



Tests Conducted (As Requested By The Applicant)

1 RoHS Directives Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	12
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr ⁶⁺) Result (By Boiling Water Extraction On Metal) (mg/kg With 50cm ²)	N
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Sum Of PBBs	ND
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND
Sum Of PBDEs	ND

Remark:

mg/kg = Milligram Per Kilogram = ppm

mg/kg With 50cm² = Milligram Per Kilogram With 50 Square Centimeter

ND = Not Detected

N=Negative

Number : WUXH00022508

Tests Conducted (As Requested By The Applicant)

(B)RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

The Above Limits Were Quoted From RoHS Directive 2011/65/EU For Homogeneous Material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd)Content	With Reference To IEC 62321 Edition 1.0: 2013, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Lead (Pb)Content	With Reference To IEC 62321 Edition 1.0: 2013, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Mercury (Hg)Content	With Reference To IEC 62321 Edition 1.0: 2013, By Acid Digestion Until The Tested Sample Was Totally Dissolved, And Determined By ICP-OES.	2 mg/kg
Chromium (VI) (Cr ⁶⁺) Content (For Metal)	With Reference To IEC 62321 Edition 1.0: 2008, By Boiling Water Extraction And Determined By UV-VIS Spectrophotometer.	Positive/Negative (Threshold Of 0.02mg/Kg With 50cm ²)
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With Reference To IEC 62321 Edition 1.0: 2008, By Solvent Extraction And Determined By GC/MS And Further HPLC Confirmation When Necessary.	5 mg/kg

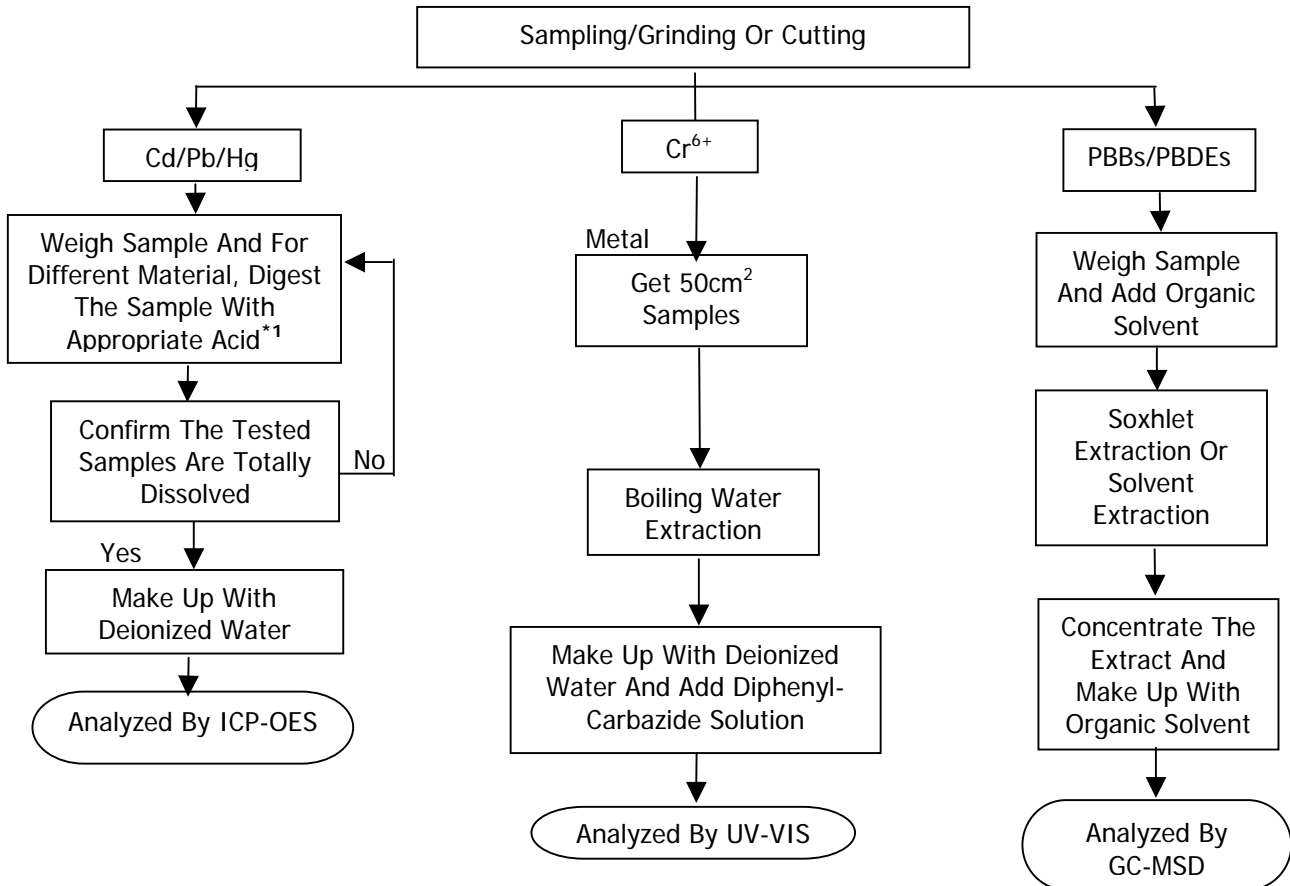
Date Sample Received: Mar 05, 2014

Testing Period: Mar 05, 2014 To Mar 10, 2014

Tests Conducted (As Requested By The Applicant)

(D) Measurement Flowchart:

Reference Standard: IEC 62321 Edition 1.0: 2008 & 2013



Remarks:

*1: List Of Appropriate Acid:

Material	Acid Added For Digestion
Polymers	HNO ₃ , HCL, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCL, HF
Electronics	HNO ₃ , HCL, H ₂ O ₂ , HBF ₄

Number : WUXH00022508

Tests Conducted (As Requested By The Applicant)

2 Halogen Test

(I) Test Result Summary :

Halogen Content:

<u>Testing Item</u>	<u>Result (ppm)</u>
Fluorine (F) Content	ND
Chlorine (Cl) Content	ND
Bromine (Br) Content	ND
Iodine (I) Content	ND

Remarks : ppm = Parts Per Million = mg/kg

ND = Not Detected

Date Sample Receive: May 27, 2014

Test Period: May 27, 2014 To May 29, 2014

(II) Test Method :

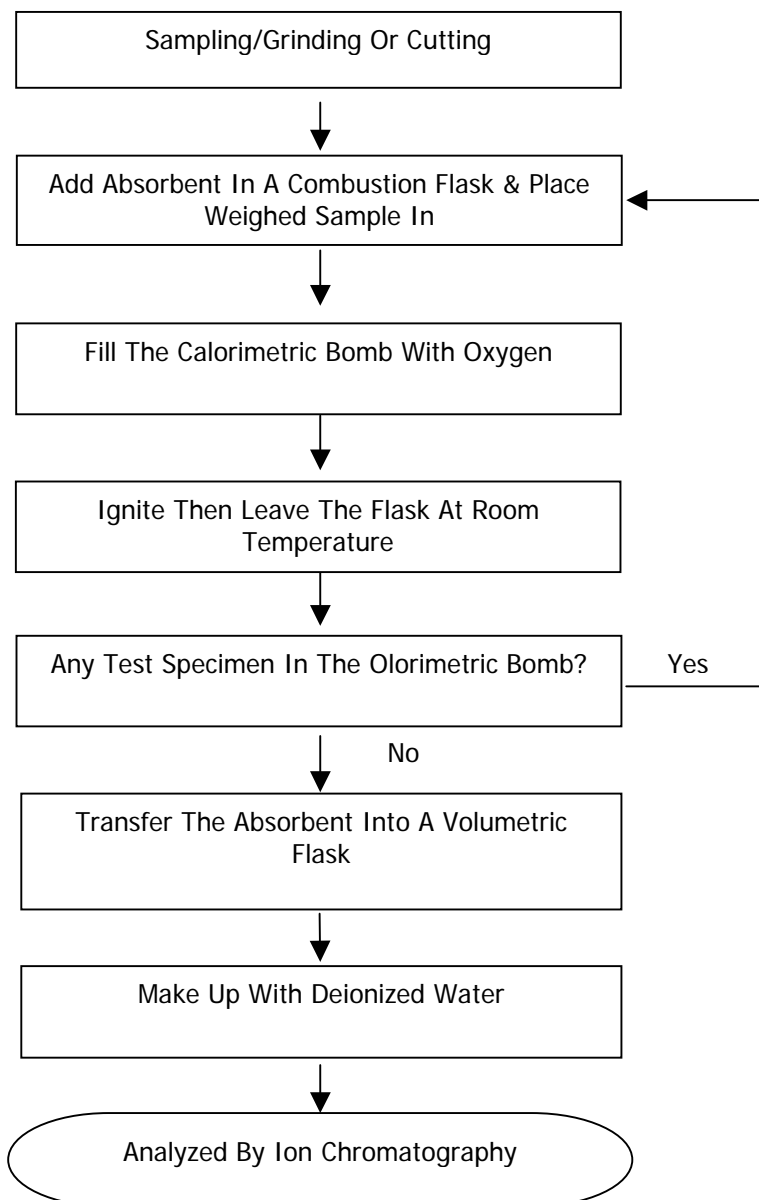
<u>Testing Item</u>	<u>Testing Method</u>	<u>Reporting Limit</u>
Halogen (F, Cl, Br, I) Content	With Reference To EN 14582:2007 By Combustion In A Calorimetric Bomb And Determined By Ion Chromatography	50 ppm

Remarks : Reporting Limit = Quantitation Limit Of Analyte In Sample

Tests Conducted (As Requested By The Applicant)

(III) Measurement Flowchart:

Test For Halogen Content Reference Method: EN 14582:2007



Chemist: Eve Deng

Number : WUXH00022508

Tests Conducted (As Requested By The Applicant)

Photo



This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.

Test Report

Report No. ECL01G031248004R1

Page 1 of 4

Applicant MARKEM-IMAJE S.A.S

Address 9 RUE GASPARD MONGE – BP 110, 26501 BOURG – LES – VALENCE CEDEX

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name 5157E/9155E/9175/MB175

Item/Lot No. CN14390118

Color black

Material ink

Sample Received Date Dec. 13, 2014

Testing Period Dec. 13, 2014 to Dec. 18, 2014

Test Requested As specified by client and RoHS Directive 2011/65/EU, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	Refer to DIN EN ISO 17075:2008	UV-Vis
Polybrominated Biphenyl(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS

Test Result(s) Please refer to the following page(s).

Tested by Tang shi hui

Reviewed by Xu Jing

Approved by Su Hongwei

Date Dec. 24, 2014

Su Hongwei
Senior Laboratory Manager

No. R108721915

Centre Testing International Co., Ltd. Shanghai Branch

No.1996, New Jinqiao Road, Pudong District, Shanghai, China

Test Report

Report No. ECL01G031248004R1

Page 2 of 4

Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	3 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Biphenyl(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Sample/Part Description Black ink

Note: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.
 -MDL = Method Detection Limit
 -N.D. = Not Detected (<MDL)
 -mg/kg = ppm = parts per million
This testing report displaces the original report of No. ECL01G031248004, and the original one No. ECL01G031248004 was invalid since the date of this testing report released. The end sign of report number R1 represents the revised version.

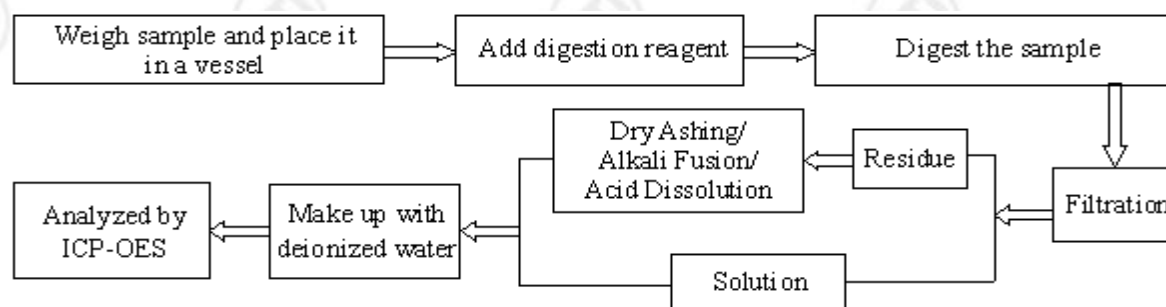
Test Report

Report No. ECL01G031248004R1

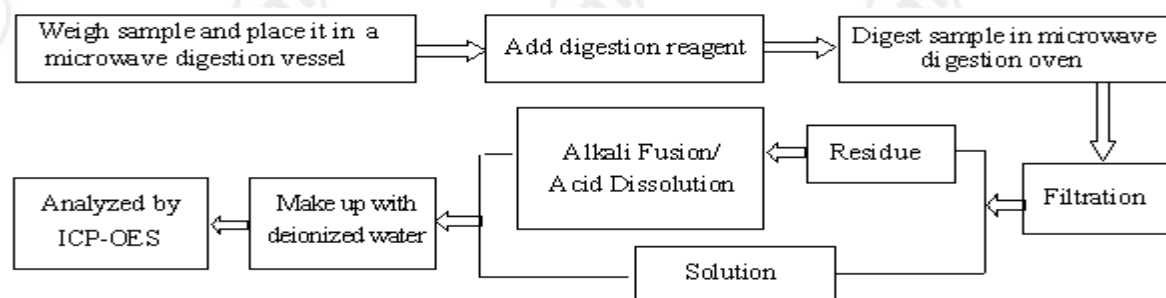
Page 3 of 4

Test Process

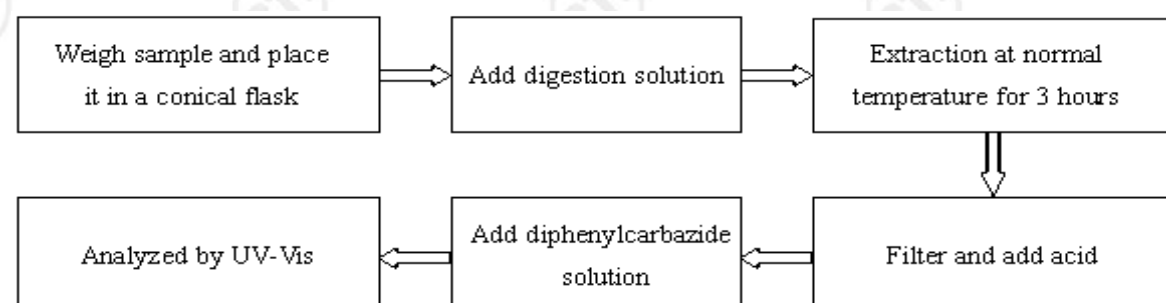
1. Lead (Pb), Cadmium (Cd)



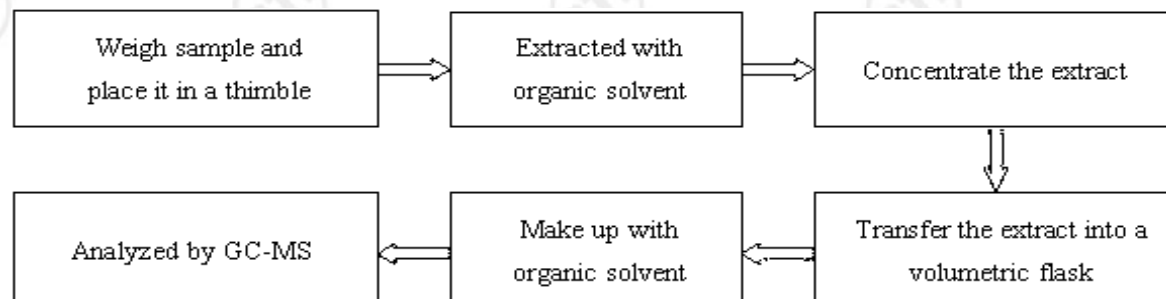
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyl(PBBs) , Polybrominated Diphenyl Ethers(PBDEs)



Test Report

Report No. ECL01G031248004R1

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Photo(s) of the sample(s)



*** End of report ***

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Test Report

Report No. ECL01G031248006

Page 1 of 3

Applicant MARKEM-IMAJE S.A.S

Address 9 RUE GASPARD MONGE – BP 110, 26501 BOURG – LES – VALENCE CEDEX

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name 5157E/9155E/9175/MB175

Item/Lot No. CN14390118

Color black

Material ink

Sample Received Date Dec. 13, 2014

Testing Period Dec. 13, 2014 to Dec. 18, 2014

Test Requested As specified by client, to test Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Fluorine(F)	Refer to BS EN 14582:2007	IC
Chlorine(Cl)	Refer to BS EN 14582:2007	IC
Bromine(Br)	Refer to BS EN 14582:2007	IC
Iodine(I)	Refer to BS EN 14582:2007	IC

Test Result(s) Please refer to the following page(s).

Tested by

Tang shi hui

Reviewed by

Xu Jing

Approved by

Su Hongwei

Date

Dec. 18, 2014

Su Hongwei

Senior Laboratory Manager

No. R108721915

Centre Testing International Co.,Ltd. Shanghai Branch

No.1996,New Jinqiao Road, Pudong District,Shanghai,China

Test Report

Report No. ECL01G031248006

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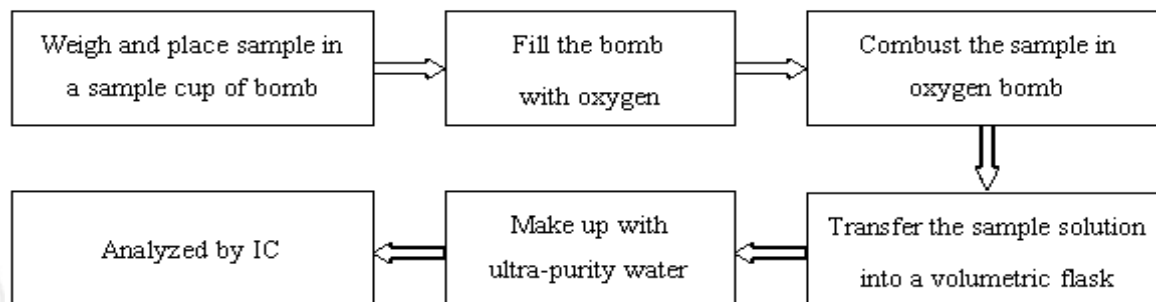
Test Result(s)

Tested Item(s)	Result	MDL
Halogen(s)		
Fluorine(F)	N.D.	10 mg/kg
Chlorine(Cl)	N.D.	10 mg/kg
Bromine(Br)	N.D.	10 mg/kg
Iodine(I)	N.D.	10 mg/kg

Tested Sample/Part Description Black ink

Note:
 -MDL = Method Detection Limit
 -N.D. = Not Detected (<MDL)
 -mg/kg = ppm = parts per million

Test Process



Test Report

Report No. ECL01G031248006

Page 3 of 3

Photo(s) of the sample(s)



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