

Report No. 報告號: 238539448a 001

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Client 客戶: Formosa Chemicals & Fibre Corporation/台灣化學纖維股份有限公司
201, Tung Hwa N. Rd., Taipei 105, Taiwan / 台灣105台北市敦化北路201號

Test item(s) 測試樣品: GPPS

Identification/Model No(s): TAIRIREX GP5000, GP5350, GP535A, GP535N, GP560N, GP5250, GP525N,
樣品描述/規格: GP5500, GP550N

Sample obtaining method: Sending by customer
樣品獲取方式:

Condition at delivery: Test item complete and undamaged.
樣品接收狀態:

Sample receiving date: 2022-01-18; 2022-01-28
收樣日期:

Testing period: 2022-01-18 – 2022-01-26 ; 2022-02-09 – 2022-02-18
測試週期:

Place of testing: TÜV Rheinland (Shanghai) Co. Ltd.
測試地點:

Test specification 測試要求:

Test result 測試結果:

According to RoHS (recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU Annex II and its amendment Directive (EU) 2015/863: Total Content of Lead, Cadmium, Mercury, Chromium VI, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers; and Benzylbutyl phthalate (BBP), Dibutyl phthalate (DBP), Bis(2-ethylhexyl) phthalate (DEHP), Diisobutyl phthalate (DIBP) / 依據電機電子設備限用有害物質指令(RoHS 2011/65/EU) 附錄 II 及其修正指令 (EU) 2015/863: 鉛、鎘、汞、六價鉻、多溴聯苯、多溴二苯醚、鄰苯二甲酸苯基丁酯、鄰苯二甲酸二丁酯、鄰苯二甲酸二(2-乙基己基)酯、鄰苯二甲酸二異丁酯 之總含量

Pass/合格

For and on behalf of
TÜV Rheinland Taiwan Ltd.




2022-02-24 Yueh-Li Lin/Senior Project Coordinator
Date 日期 Name/Position 姓名/職位

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.

This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

"Decision Rule" document announced in our website (<https://www.tuv.com/landingpage/en/qm-gcn/>) describes the statement of conformity and its rule of enforcement for test results are applicable throughout this test report.

樣品信息由客戶提供。測試結果根據所做測試的種類和範圍而得出。本測試報告僅對來樣負責。未經本測試中心許可，測試報告不得部分複製。不能根據此報告在上述產品或類似產品上使用任何安全標誌。本測試報告中，描述符合性聲明所應用的判定規則發佈在我司官網 <https://www.tuv.com/landingpage/en/qm-gcn/>。

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Sample list/樣品清單

Mat. No./ 材料號碼	Description/敘述	Material/材質	Color/顏色	Lab.-No./實驗室編號
1	GP5250	plastic/塑膠	transparent/透明	TCL220118-03
2	GP525N	plastic/塑膠	transparent/透明	TCL220118-04
3	GP5500	plastic/塑膠	transparent/透明	TCL220118-05
4	GP550N	plastic/塑膠	transparent/透明	TCL220118-06
5	GP5000	plastic/塑膠	transparent/透明	TCL220128-57
6	GP5350	plastic/塑膠	transparent/透明	TCL220128-58
7	GP535A	plastic/塑膠	transparent/透明	TCL220128-59
8	GP535N	plastic/塑膠	transparent/透明	TCL220128-60
9	GP560N	plastic/塑膠	transparent/透明	TCL220128-61

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Test Method/測試方法 : Total Cadmium/鎘, Lead/鉛, Mercury/汞, Chromium/鉻
 - Ref. to/參考 IEC 62321-4:2013 and IEC 62321-5:2013
 Chromium (VI)/六價鉻
 - For Metal material/金屬 - Ref. to IEC 62321-7-1:2015
 - For Plastic or Electronic material/塑膠或電子材料 - Ref. to IEC 62321-7-2:2017
 - For Leather material/皮料 - Ref. to EN ISO 17075-1:2017
 PBBs/多溴聯苯, PBDEs/多溴二苯醚 - Ref. to/參考 IEC 62321-6:2015

Sample no./樣品編號		RL	1	2	3	4
Cadmium (Cd) / 鎘	mg/kg	2	< RL	< RL	< RL	< RL
Lead (Pb) / 鉛	mg/kg	2	< RL	< RL	< RL	< RL
Mercury (Hg) / 汞	mg/kg	2	< RL	< RL	< RL	< RL
Chromium VI (Cr VI) / 六價鉻*	mg/kg	8	< RL	< RL	< RL	< RL
Sum of Polybrominated biphenyls (PBBs) / 多溴聯苯	mg/kg	-	< RL	< RL	< RL	< RL
Monobromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Dibromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Tribromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Tetrabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Pentabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Hexabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Heptabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Octabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Nonabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Decabromobiphenyl	mg/kg	5	< RL	< RL	< RL	< RL
Sum of Polybrominated diphenyl ethers (PBDEs) / 多溴二苯醚	mg/kg	-	< RL	< RL	< RL	< RL
Monobromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Dibromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Tribromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Tetrabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Pentabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Hexabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Heptabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Octabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Nonabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL
Decabromodiphenyl ether	mg/kg	5	< RL	< RL	< RL	< RL

Notes/ 註釋:

- < = less than/小於 ; - RL = Reporting Limit/報告極限值 ; - N.A. = Not Applicable/不適用
- mg/kg = milligram per kilogram/毫克每公斤
- * Once the total Cr content in metal/ plastic or electronic sample is found to be exceeded the limit, the Cr (VI) content will be confirmed with reference to IEC 62321-7-1:2015/ IEC 62321-7-2:2017/ 一旦金屬/塑膠/電子樣品內總鉻含量超過最大允許限值，六價鉻含量將依照 IEC 62321-7-1:2015/ IEC 62321-7-2:2017 進行確認。

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Test Method/測試方法 : Total Cadmium/鎘, Lead/鉛, Mercury/汞, Chromium/鉻
 - Ref. to/參考 IEC 62321-4:2013 and IEC 62321-5:2013
 Chromium (VI)/六價鉻
 - For Metal material/金屬 - Ref. to IEC 62321-7-1:2015
 - For Plastic or Electronic material/塑膠或電子材料 - Ref. to IEC 62321-7-2:2017
 - For Leather material/皮料 - Ref. to EN ISO 17075-1:2017
 PBBs/多溴聯苯, PBDEs/多溴二苯醚 - Ref. to/參考 IEC 62321-6:2015

Sample no./樣品編號	RL	5	6	7	8
Cadmium (Cd) / 鎘 mg/kg	2	< RL	< RL	< RL	< RL
Lead (Pb) / 鉛 mg/kg	2	< RL	< RL	< RL	< RL
Mercury (Hg) / 汞 mg/kg	2	< RL	< RL	< RL	< RL
Chromium VI (Cr VI) / 六價鉻* mg/kg	8	< RL	< RL	< RL	< RL
Sum of Polybrominated biphenyls (PBBs) / 多溴聯苯 mg/kg	-	< RL	< RL	< RL	< RL
Monobromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Dibromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Tribromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Tetrabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Pentabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Hexabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Heptabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Octabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Nonabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Decabromobiphenyl mg/kg	5	< RL	< RL	< RL	< RL
Sum of Polybrominated diphenyl ethers (PBDEs) / 多溴二苯醚 mg/kg	-	< RL	< RL	< RL	< RL
Monobromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Dibromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Tribromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Tetrabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Pentabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Hexabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Heptabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Octabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Nonabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL
Decabromodiphenyl ether mg/kg	5	< RL	< RL	< RL	< RL

Notes/ 註釋:

- < = less than/小於 ; - RL = Reporting Limit/報告極限值 ; - N.A. = Not Applicable/不適用
- mg/kg = milligram per kilogram/毫克每公斤
- * Once the total Cr content in metal/ plastic or electronic sample is found to be exceeded the limit, the Cr (VI) content will be confirmed with reference to IEC 62321-7-1:2015/ IEC 62321-7-2:2017/ 一旦金屬/塑膠/電子樣品內總鉻含量超過最大允許限值，六價鉻含量將依照 IEC 62321-7-1:2015/ IEC 62321-7-2:2017 進行確認。

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Test Method/測試方法 : Total Cadmium/鎘, Lead/鉛, Mercury/汞, Chromium/鉻
 - Ref. to/參考 IEC 62321-4:2013 and IEC 62321-5:2013
 Chromium (VI)/六價鉻
 - For Metal material/金屬 - Ref. to IEC 62321-7-1:2015
 - For Plastic or Electronic material/塑膠或電子材料 - Ref. to IEC 62321-7-2:2017
 - For Leather material/皮料 - Ref. to EN ISO 17075-1:2017
 PBBs/多溴聯苯, PBDEs/多溴二苯醚 - Ref. to/參考 IEC 62321-6:2015

Sample no./樣品編號		RL	9
Cadmium (Cd) / 鎘	mg/kg	2	< RL
Lead (Pb) / 鉛	mg/kg	2	< RL
Mercury (Hg) / 汞	mg/kg	2	< RL
Chromium VI (Cr VI) / 六價鉻*	mg/kg	8	< RL
Sum of Polybrominated biphenyls (PBBs) / 多溴聯苯	mg/kg	-	< RL
Monobromobiphenyl	mg/kg	5	< RL
Dibromobiphenyl	mg/kg	5	< RL
Tribromobiphenyl	mg/kg	5	< RL
Tetrabromobiphenyl	mg/kg	5	< RL
Pentabromobiphenyl	mg/kg	5	< RL
Hexabromobiphenyl	mg/kg	5	< RL
Heptabromobiphenyl	mg/kg	5	< RL
Octabromobiphenyl	mg/kg	5	< RL
Nonabromobiphenyl	mg/kg	5	< RL
Decabromobiphenyl	mg/kg	5	< RL
Sum of Polybrominated diphenyl ethers (PBDEs) / 多溴二苯醚	mg/kg	-	< RL
Monobromodiphenyl ether	mg/kg	5	< RL
Dibromodiphenyl ether	mg/kg	5	< RL
Tribromodiphenyl ether	mg/kg	5	< RL
Tetrabromodiphenyl ether	mg/kg	5	< RL
Pentabromodiphenyl ether	mg/kg	5	< RL
Hexabromodiphenyl ether	mg/kg	5	< RL
Heptabromodiphenyl ether	mg/kg	5	< RL
Octabromodiphenyl ether	mg/kg	5	< RL
Nonabromodiphenyl ether	mg/kg	5	< RL
Decabromodiphenyl ether	mg/kg	5	< RL

Notes/ 註釋:

- < = less than/小於 ; - RL = Reporting Limit/報告極限值 ; - N.A. = Not Applicable/不適用
- mg/kg = milligram per kilogram/毫克每公斤
- * Once the total Cr content in metal/ plastic or electronic sample is found to be exceeded the limit, the Cr (VI) content will be confirmed with reference to IEC 62321-7-1:2015/ IEC 62321-7-2:2017/ 一旦金屬/塑膠/電子樣品內總鉻含量超過最大允許限值，六價鉻含量將依照 IEC 62321-7-1:2015/ IEC 62321-7-2:2017 進行確認。

	Cd/鎘	Cr(VI)/六價鉻	Pb/鉛	Hg/汞	PBBs/多溴聯苯	PBDEs/多溴二苯醚
Maximum permissible Limit acc. to 2011/65/EU (mg/kg) / 允許限值	100	1000	1000	1000	1000	1000

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Test Method/測試方法 : BBP/DBP/DEHP/DIBP - Ref. to IEC 62321-8:2017 / 參考 IEC 62321-8:2017

Sample no./樣品編號	RL	1	2	3	4	
Benzylbutylphthalate (BBP) /鄰苯二甲酸苯基丁酯	mg/kg	50	< RL	< RL	< RL	< RL
Dibutylphthalate (DBP) /鄰苯二甲酸二丁酯	mg/kg	50	< RL	< RL	< RL	< RL
Diethylhexylphthalate (DEHP) /鄰苯二甲酸二(2-乙基己基)酯	mg/kg	50	< RL	< RL	< RL	< RL
Diisobutylphthalate (DIBP) /鄰苯二甲酸二異丁酯	mg/kg	50	< RL	< RL	< RL	< RL

Sample no./樣品編號	RL	5	6	7	8	
Benzylbutylphthalate (BBP) /鄰苯二甲酸苯基丁酯	mg/kg	50	< RL	< RL	< RL	< RL
Dibutylphthalate (DBP) /鄰苯二甲酸二丁酯	mg/kg	50	< RL	< RL	< RL	< RL
Diethylhexylphthalate (DEHP) /鄰苯二甲酸二(2-乙基己基)酯	mg/kg	50	< RL	< RL	< RL	< RL
Diisobutylphthalate (DIBP) /鄰苯二甲酸二異丁酯	mg/kg	50	< RL	< RL	< RL	< RL

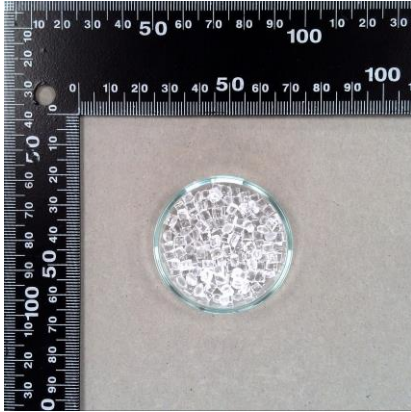
Sample no./樣品編號	RL	9	
Benzylbutylphthalate (BBP) /鄰苯二甲酸苯基丁酯	mg/kg	50	< RL
Dibutylphthalate (DBP) /鄰苯二甲酸二丁酯	mg/kg	50	< RL
Diethylhexylphthalate (DEHP) /鄰苯二甲酸二(2-乙基己基)酯	mg/kg	50	< RL
Diisobutylphthalate (DIBP) /鄰苯二甲酸二異丁酯	mg/kg	50	< RL

Notes/ 註釋:

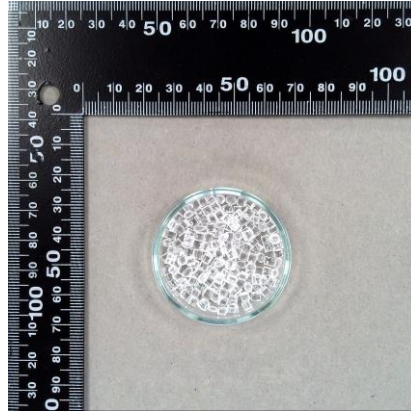
- < = less than/小於
- RL = Reporting Limit/報告極限值
- N.A. = Not Applicable/不適用
- mg/kg = milligram per kilogram/毫克每公斤

	BBP 鄰苯二甲酸 苯基丁酯	DBP 鄰苯二甲酸 二丁酯	DEHP 鄰苯二甲酸二 (2-乙基己基)酯	DIBP 鄰苯二甲酸 二異丁酯
Maximum permissible Limit acc. to (EU) 2015/863 (mg/kg) / 允許限值	1000	1000	1000	1000

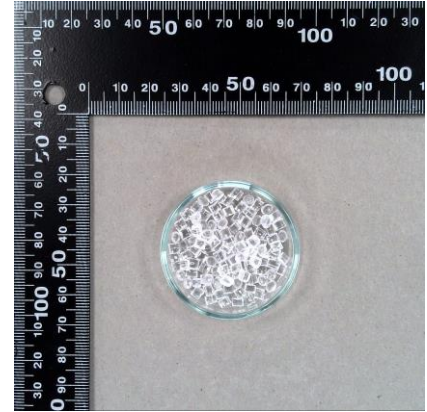
Test Sample/測試樣品



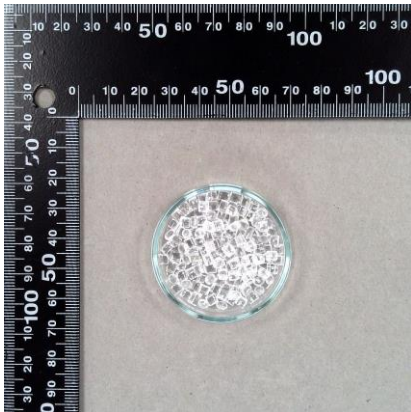
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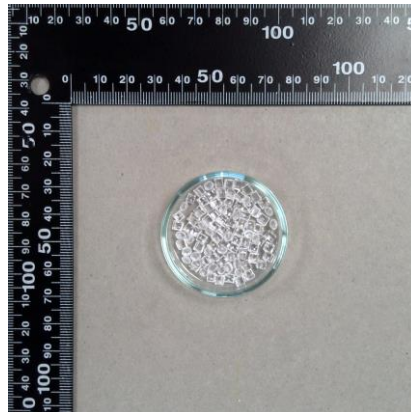
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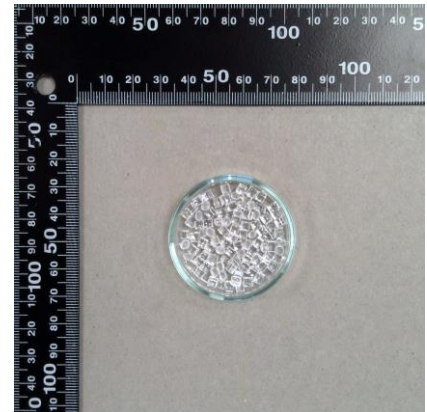
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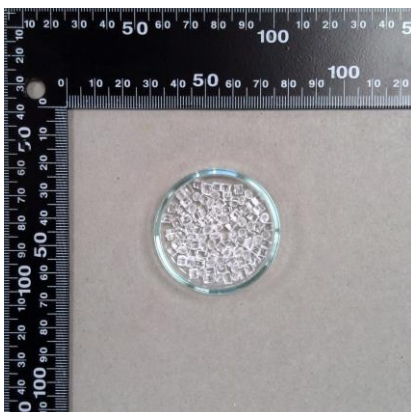
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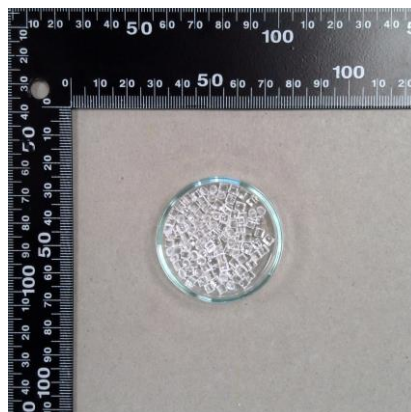
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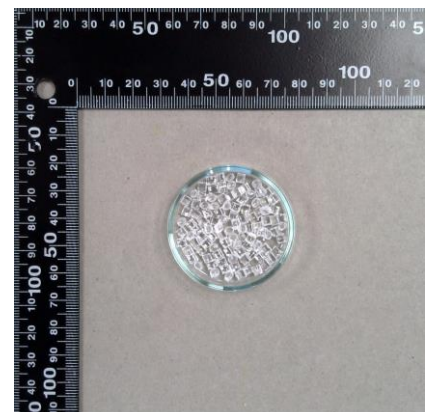
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7



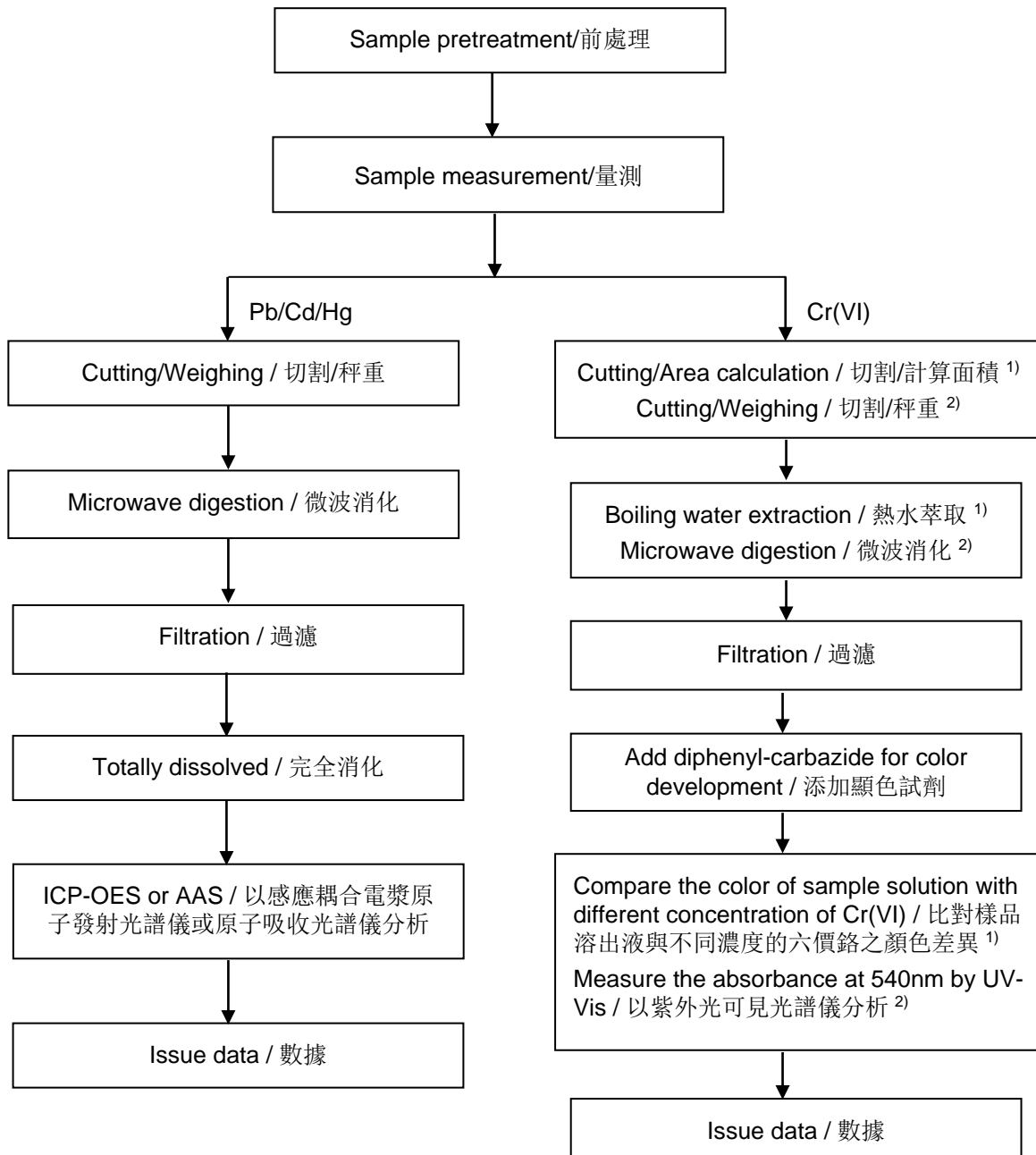
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9

Testing procedure / 測試流程圖:

RoHS (Pb/鉛, Cd/鎘, Hg/汞, Cr(VI)/六價鉻)

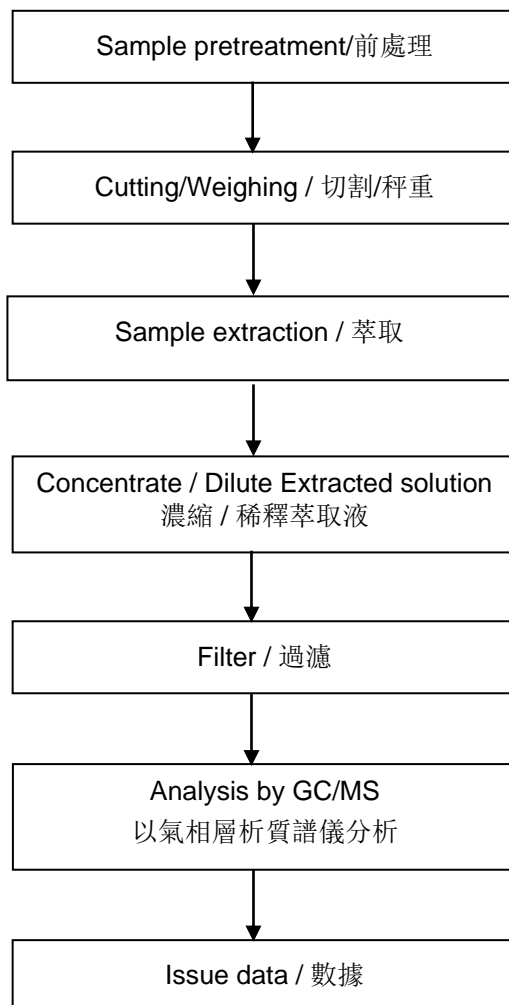
Notes/ 註釋: ¹⁾ For metallic material / 用於金屬物質²⁾ For non-metallic material / 用於非金屬物質

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Testing procedure / 測試流程圖 :

RoHS (PBBs/多溴聯苯, PBDEs/多溴二苯醚, BBP/鄰苯二甲酸苯基丁酯、DBP/鄰苯二甲酸二丁酯、DEHP/鄰苯二甲酸二(2-乙基己基)酯、DIBP/鄰苯二甲酸二異丁酯)



--- End of Test-Report / 此報告結束---