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# 測試報告
# Test Report

號碼(No.) : CE/2019/A0961　　日期(Date) : 2019/10/16　　頁數(Page): 1 of 25

MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**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) | : | MAGNETICS DIVISION OF SPANG & COMPANY |
| 樣品名稱(Sample Description) | : | FERRITE CORE |
| 收件日期(Sample Receiving Date) | : | 2019/10/05 |
| 測試期間(Testing Period) | : | 2019/10/05 to 2019/10/16 |

==========

**測試需求(Test Requested):**

(1) 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP. (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

(2) 其他測試項目請見下一頁 . (Please refer to next pages for the other item(s).)

**測試結果(Test Results)** : 請參閱下一頁 (Please refer to following 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, DBP, BBP, DEHP, DIBP 的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求. (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

Troy Chang / Manager - Tec
Signed for and behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT

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110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**測試結果(Test Results)**

測試部位(PART NAME)No.1 : 鐵灰色金屬 (IRON-GRAY METAL)

| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| 鎘 / Cadmium (Cd) | mg/kg | 參考IEC 62321-5 (2013)，以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-OES. | 2 | n.d. | 100 |
| 鉛 / Lead (Pb) | mg/kg | | 2 | n.d. | 1000 |
| 汞 / Mercury (Hg) | mg/kg | 參考IEC 62321-4:2013+ AMD1:2017，以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-OES. | 2 | n.d. | 1000 |
| 六價鉻 / Hexavalent Chromium Cr(VI)(#2) | $\mu g/cm^2$ | 參考IEC 62321-7-1 (2015)，以UV-VIS檢測. / With reference to IEC 62321-7-1 (2015) and performed by UV-VIS. | 0.10 | n.d. | - |
| **多溴聯苯總和 / Sum of PBBs** | mg/kg | 參考IEC 62321-6 (2015)，以氣相層析/質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed by GC/MS. | - | n.d. | 1000 |
| 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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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| **多溴聯苯醚總和 / Sum of PBDEs** | mg/kg | 參考IEC 62321-6 (2015)，以氣相層析/質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed by GC/MS. | - | n.d. | 1000 |
| 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. | - |
| 鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2) | mg/kg | 參考IEC 62321-8 (2017)，以氣相層析/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. | 1000 |
| 鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7) | mg/kg | | 50 | n.d. | 1000 |
| 鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | mg/kg | | 50 | n.d. | 1000 |
| 鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1) | mg/kg | | 50 | n.d. | - |
| 鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0) | mg/kg | | 50 | n.d. | - |
| 鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0) | mg/kg | | 50 | n.d. | - |
| 鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5) | mg/kg | | 50 | n.d. | 1000 |

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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| **鹵素 / Halogen** | | | | | |
| 鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8) | mg/kg | 參考BS EN 14582 (2016)，以離子層析儀分析. / With reference to BS EN 14582 (2016). Analysis was performed by IC. | 50 | n.d. | - |
| 鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1) | mg/kg | | 50 | n.d. | - |
| 鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2) | mg/kg | | 50 | n.d. | - |
| 鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8) | mg/kg | | 50 | n.d. | - |
| 全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide) | mg/kg | 參考CEN/TS 15968 (2010)，以液相層析/質譜儀檢測. / With reference to CEN/TS 15968 (2010). Analysis was performed by LC/MS. | 0.01 | n.d. | - |
| 全氟辛酸 / PFOA (CAS No.: 335-67-1) | mg/kg | 參考CEN/TS 15968 (2010)，以液相層析/質譜儀檢測. / With reference to CEN/TS 15968 (2010). Analysis was performed by LC/MS. | 0.01 | n.d. | - |
| 多氯聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3) | mg/kg | 參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS. | 0.5 | n.d. | - |
| 多氯奈 / Polychlorinated Naphthalene (PCNs) | mg/kg | 參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS. | 5 | n.d. | - |
| 多氯三聯苯 / Polychlorinated Terphenyls (PCTs) | mg/kg | 參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS. | 0.5 | n.d. | - |

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|---|---|---|---|---|---|
| 四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7) | mg/kg | 參考Global SOP RSTS-E&E-121 (2012)，以液相層析/質譜儀分析. / With reference to Global SOP RSTS-E&E-121 (2012). Analysis was performed by LC/MS. | 10 | n.d. | - |
| 富馬酸二甲酯 / Dimethyl Fumarate (CAS No.: 624-49-7) | mg/kg | 參考US EPA 3550C (2007)，以氣相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by GC/MS. | 0.1 | n.d. | - |
| **偶氮 (AZO)** | | | | | |
| 1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No.: 92-67-1) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 2): 聯苯胺 / BENZIDINE (CAS No.: 92-87-5) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 3): 4-氯鄰甲苯胺 / 4-CHLORO-O-TOLUIDINE (CAS No.: 95-69-2) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 4): 2-萘胺 / 2-NAPHTHYLAMINE (CAS No.: 91-59-8) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 5): 鄰氨基二甲基偶氮 / O-AMINOAZOTOLUENE (CAS No.: 97-56-3) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |

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|---|---|---|---|---|---|
| 6): 對硝基鄰甲苯胺 / 2-AMINO-4-NITROTOLUENE (CAS No.: 99-55-8) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 7): 對氯苯胺 / P-CHLOROANILINE (CAS No.: 106-47-8) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 8): 4-甲氧基-間苯二胺 / 2,4-DIAMINOANISOLE (CAS No.: 615-05-4) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 9): 4,4'-二氨基二苯甲烷 / 4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 101-77-9) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 10): 3,3'-二氯聯苯胺 / 3,3'-DICHLOROBENZIDINE (CAS No.: 91-94-1) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 11): 3,3'-二甲氧基聯苯胺 / 3,3'-DIMETHOXYBENZIDINE (CAS No.: 119-90-4) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 12): 3,3'-二甲基聯苯胺 / 3,3'-DIMETHYLBENZIDINE (CAS No.: 119-93-7) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |

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|---|---|---|---|---|---|
| 13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 838-88-0) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 120-71-8) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 15): 4,4'-亞甲基雙 (氯苯胺) / 4,4'-METHYLENE-BIS-(2-CHLOROANILINE) (CAS No.: 101-14-4) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 16): 4,4'-氧化雙苯胺 / 4,4'-OXYDIANILINE (CAS No.: 101-80-4) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 17): 4,4'-硫代雙苯胺 / 4,4'-THIODIANILINE (CAS No.: 139-65-1) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 18): 鄰甲苯胺 / O-TOLUIDINE (CAS No.: 95-53-4) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 19): 2,4-二氨基甲苯 / 2,4-TOLUYLENEDIAMINE (CAS No.: 95-80-7) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |

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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| 20): 2,4,5-三甲基苯胺 / 2,4,5-TRIMETHYLANILINE (CAS No.: 137-17-7) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No.: 90-04-0) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 22): 對氨基偶氮苯 / 4-AMINOAZOBENZENE (CAS No.: 60-09-3) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No.: 95-68-1) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No.: 87-62-7) | mg/kg | 參考LFGB 82.02-2 (2013)，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2 (2013). Analysis was performed by GC/MS. | 3 | n.d. | - |
| 聚氯乙烯 / PVC | ** | 以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test. | - | Negative | - |

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# 測試報告
# Test Report



MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| 紅磷 / Red phosphorus | ** | 以熱裂解-氣相層析/質譜儀分析. / Analysis was performed by Pyrolyzer-GC/MS. | - | Negative | - |
| 鈹 / Beryllium (Be) | mg/kg | 參考US EPA 3050B (1996)，以感應耦合電漿發射光譜儀檢測. / With reference to US EPA 3050B (1996). Analysis was performed by ICP-OES. | 2 | n.d. | - |
| **石綿 / Asbestos** | | | | | |
| 溫石綿(白石綿) / Chrysotile (CAS No.: 12001-29-5) | % | 參考EPA 600/R-93/116 (1993) / 立體顯微鏡 (SM), 分散染色式偏光顯微鏡(DS-PLM)及X光繞射光譜分析法 (XRD) / With reference to EPA 600/R-93/116 (1993). Analysis was performed by Stereo Microscope (SM), Dispersion Staining Polarized Light Microscope (DS-PLM) and X-ray Diffraction Spectrometer (XRD). | - | Negative | - |
| 鐵石綿(褐石綿) / Amosite (CAS No.: 12172-73-5) | % | | - | Negative | - |
| 青石綿 / Crocidolite (CAS No.: 12001-28-4) | % | | - | Negative | - |
| 斜方角閃石綿 / Anthophyllite (CAS No.: 77536-67-5) | % | | - | Negative | - |
| 透閃石綿 / Tremolite (CAS No.: 77536-68-6) | % | | - | Negative | - |
| 陽起石綿 / Actinolite (CAS No.: 77536-66-4) | % | | - | Negative | - |

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# 測試報告
# Test Report



MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**備註(Note)：**

1. mg/kg = ppm；0.1wt% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)
4. "-" = Not Regulated (無規格值)
5. **= Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. 石綿定性分析試驗範圍： <0.1%~100%，石綿鑑定的判定基準是以檢出含有石綿纖維為『Positive』，未檢出石綿纖維為『Negative』。/ Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".
8. (#2) =
   a. 當六價鉻結果大於0.13 μg/cm²，表示樣品表層含有六價鉻. / The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).
   b. 當六價鉻結果為n.d. (濃度小於0.10 μg/cm²)，表示表層不含六價鉻. / The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating
   c. 當六價鉻結果介於 0.10 及 0.13 μg/cm² 時，無法確定塗層是否含有六價鉻. / The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.

**PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 2019/1021**

PFOS濃度在物質或製備中不得超過0.001%(10ppm)，在半成品、成品或零部件中不得超過0.1%(1000ppm)，在紡織品或塗層材料中不得超過1μg/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m².)

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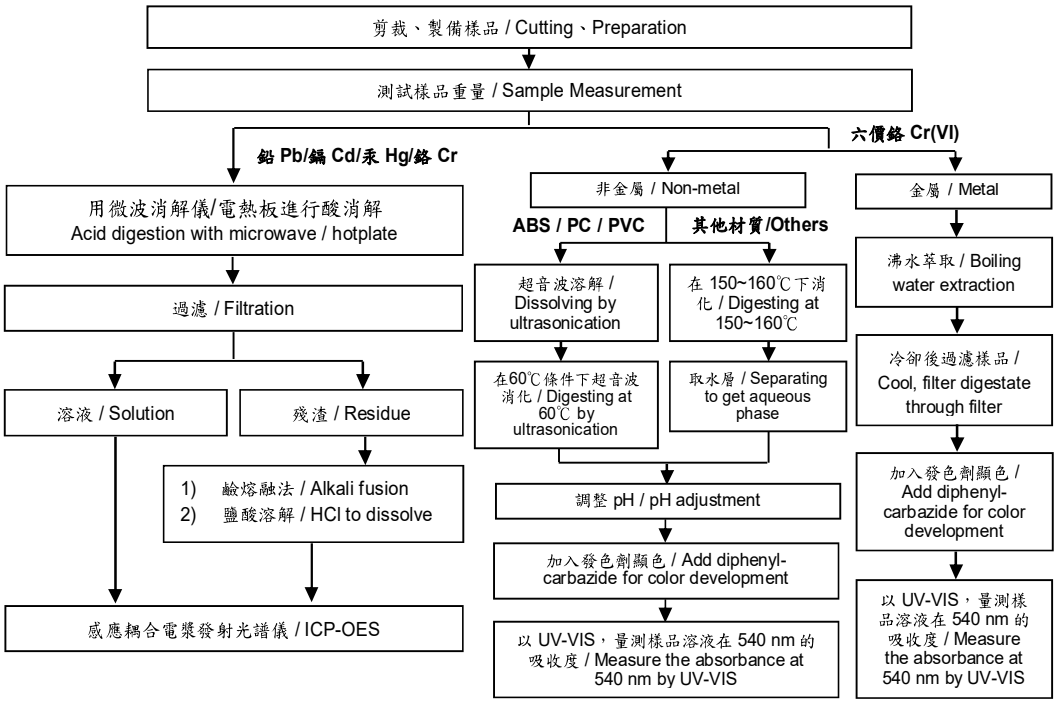
MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

## 重金屬流程圖 / Analytical flow chart of Heavy Metal

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.（$Cr^{6+}$ test method excluded）

- 測試人員：陳恩臻 / Technician : Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang

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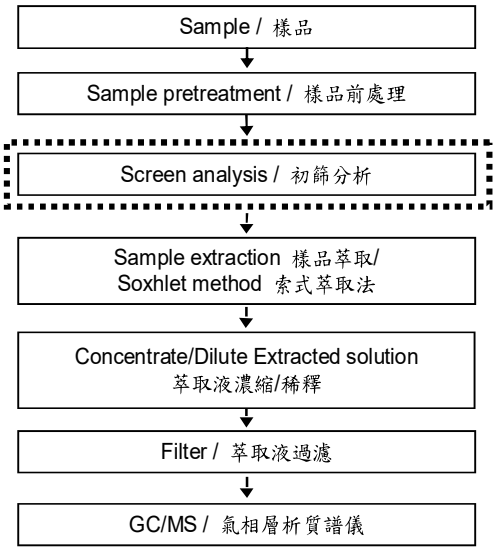
MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: 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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MAGNETICS DIVISION OF SPANG & COMPANY

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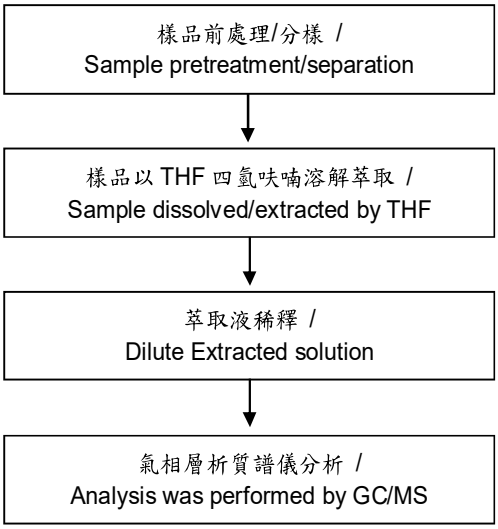
**可塑劑分析流程圖 / Analytical flow chart - Phthalate**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor : Troy Chang

**【測試方法/Test method: IEC 62321-8】**

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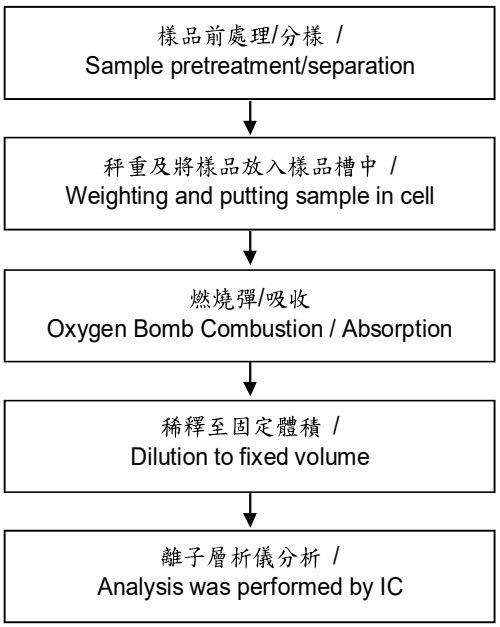
**鹵素分析流程圖 / Analytical flow chart - Halogen**

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang

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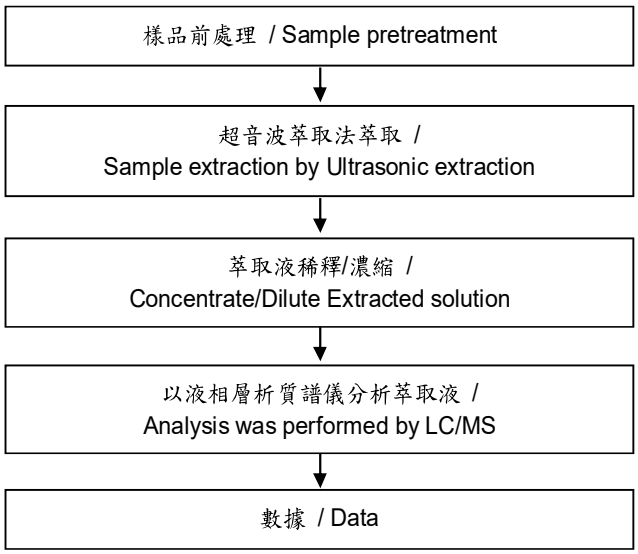
**全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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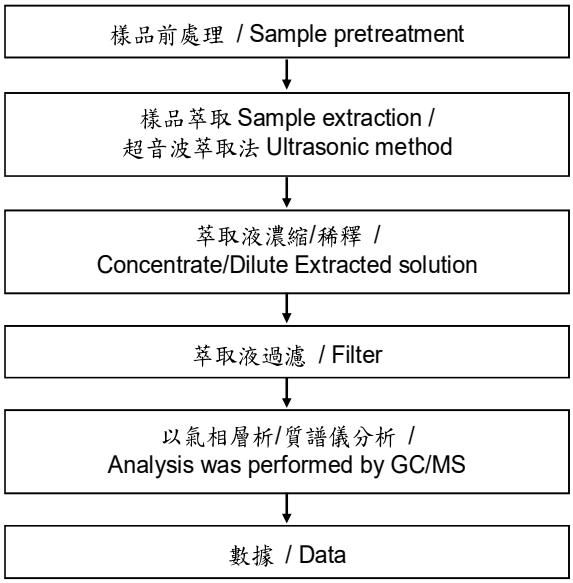
**多氯聯苯分析流程圖 / Analytical flow chart - PCBs**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor : Troy Chang

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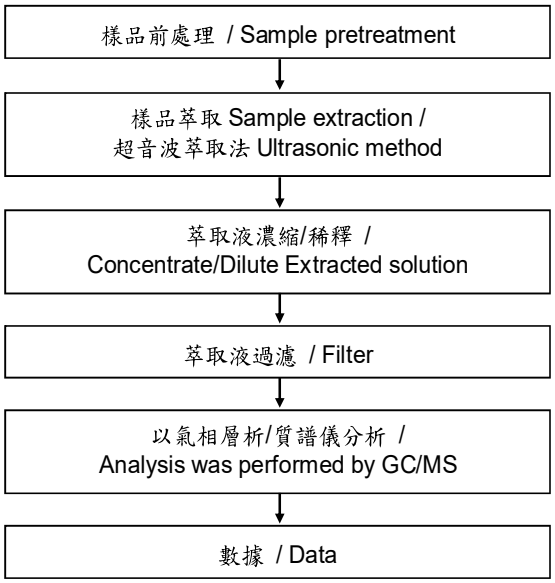
**多氯奈分析流程圖 / Analytical flow chart - PCNs**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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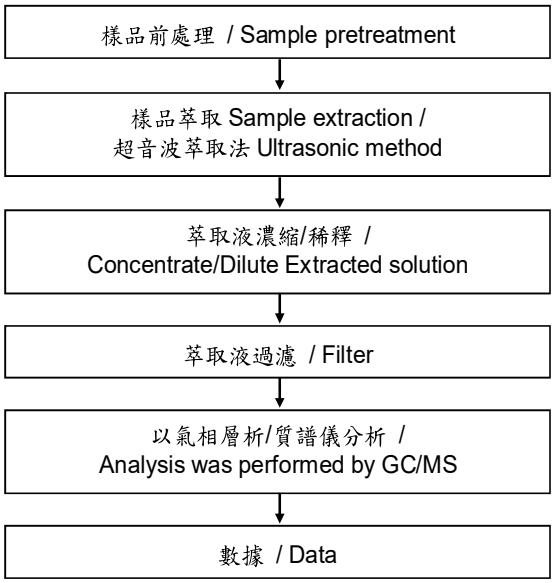
**多氯三聯苯分析流程圖 / Analytical flow chart - PCTs**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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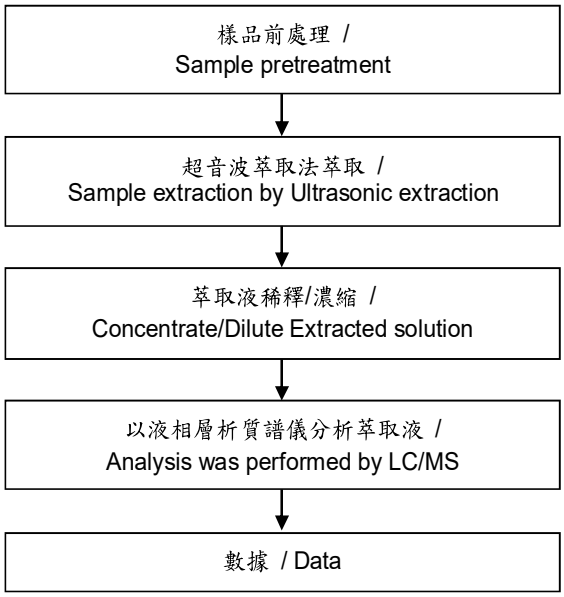
**四溴雙酚-A 分析流程圖 / Analytical flow chart - TBBP-A**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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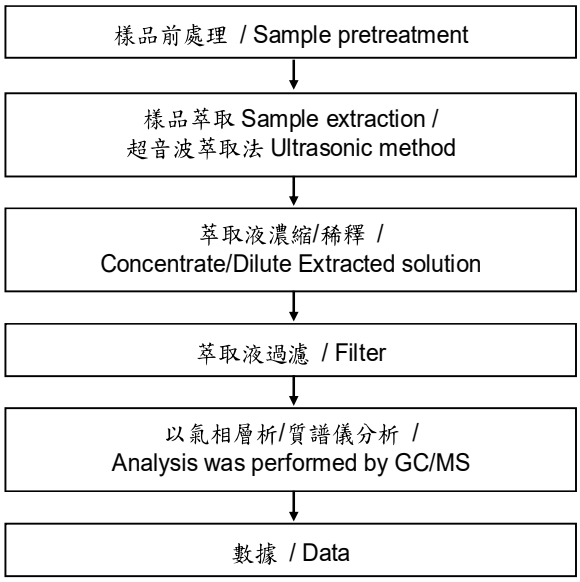
MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**富馬酸二甲酯分析流程圖 / Analytical flow chart - Dimethyl Fumarate**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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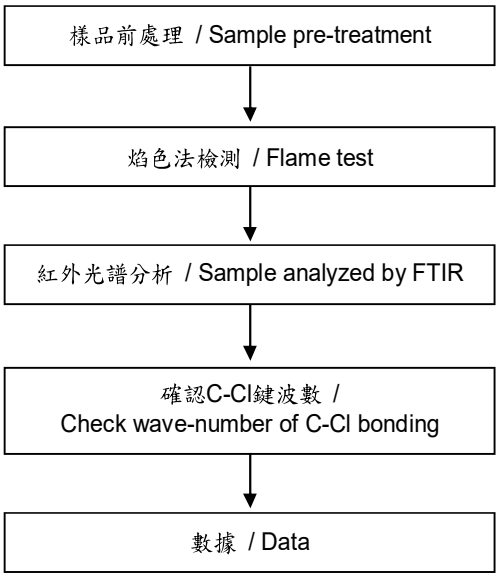
110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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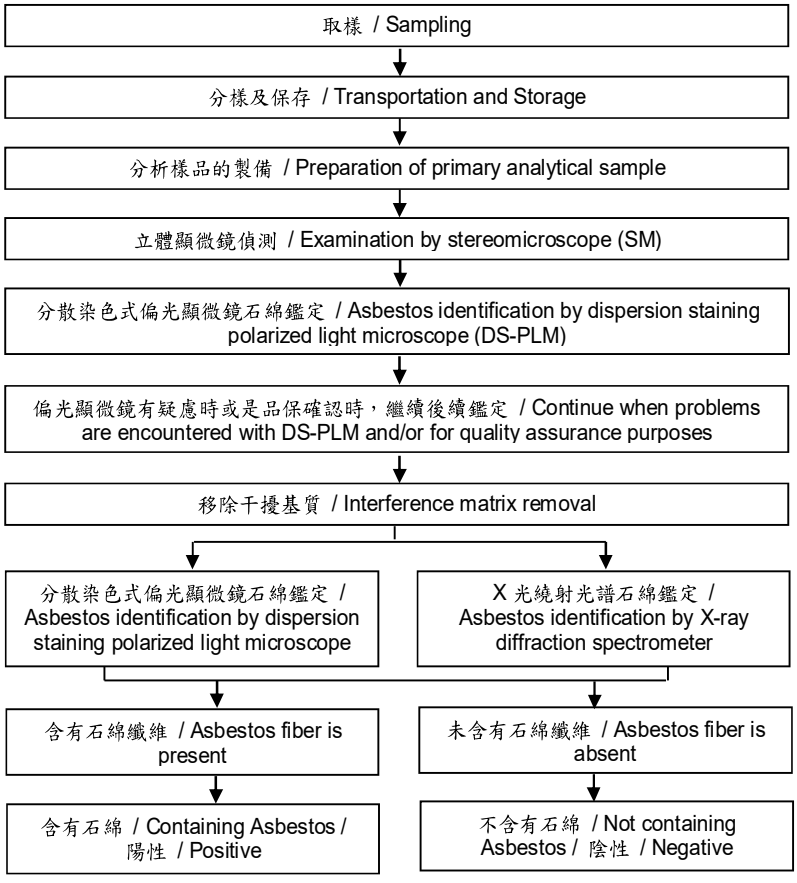
MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

**石綿鑑定分析流程圖 / Analysis flow chart for determination of Asbestos**

- 測試人員：高鍵忠 / Technician: Victor Kao
- 測試負責人：魏明芬 / Supervisor: Wendy Wei

**【參考方法(Reference method): EPA 600/R-93/116】**

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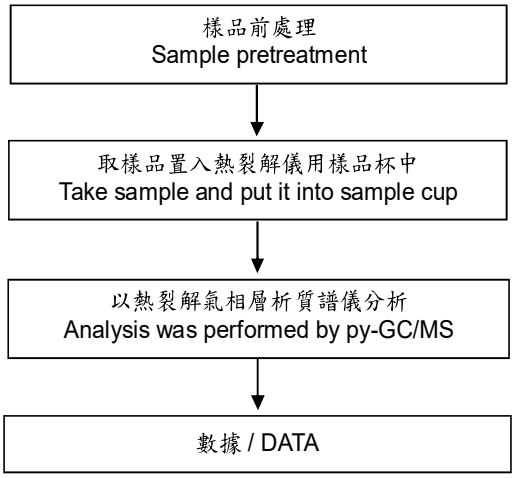
**紅磷分析流程 / Analytical flow chart - Red phosphorus**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

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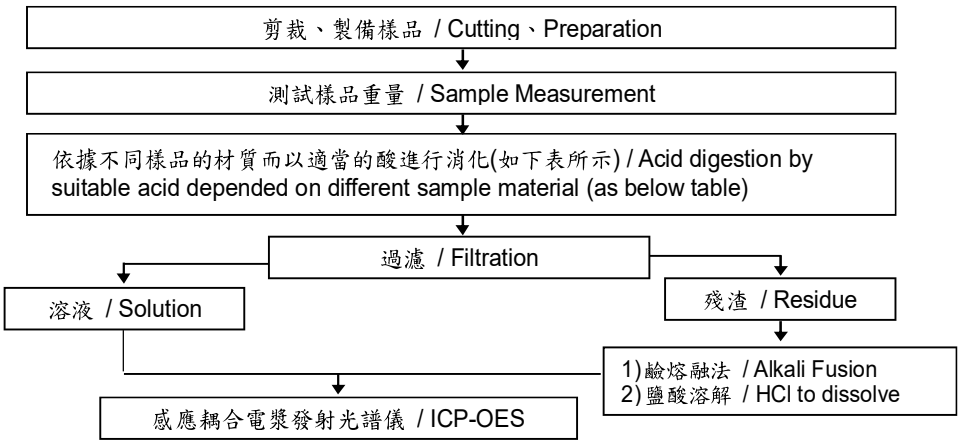
根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang

**元素以 ICP-OES 分析的消化流程圖**
**(Flow Chart of digestion for the elements analysis performed by ICP-OES)**




| | |
|---|---|
| 鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder | 王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, $HNO_3$, HCl, HF, $H_2O_2$ |
| 玻璃 / Glass | 硝酸,氫氟酸 / $HNO_3$/HF |
| 金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic | 王水 / Aqua regia |
| 銀 / Silver | 硝酸 / $HNO_3$ |
| 塑膠 / Plastic | 硫酸,雙氧水,硝酸,鹽酸 / $H_2SO_4$, $H_2O_2$, $HNO_3$, HCl |
| 其他 / Others | 加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion |

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# 測試報告
# Test Report

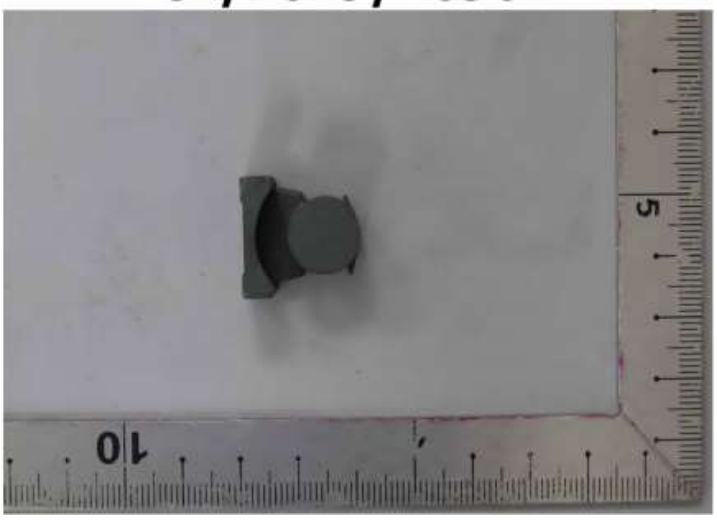


MAGNETICS DIVISION OF SPANG & COMPANY

110 DELTA DRIVE PITTSBURGH, PENNSYLVANIA USA 15238

＊ 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/2019/A0961



** 報告結尾 (End of Report) **

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