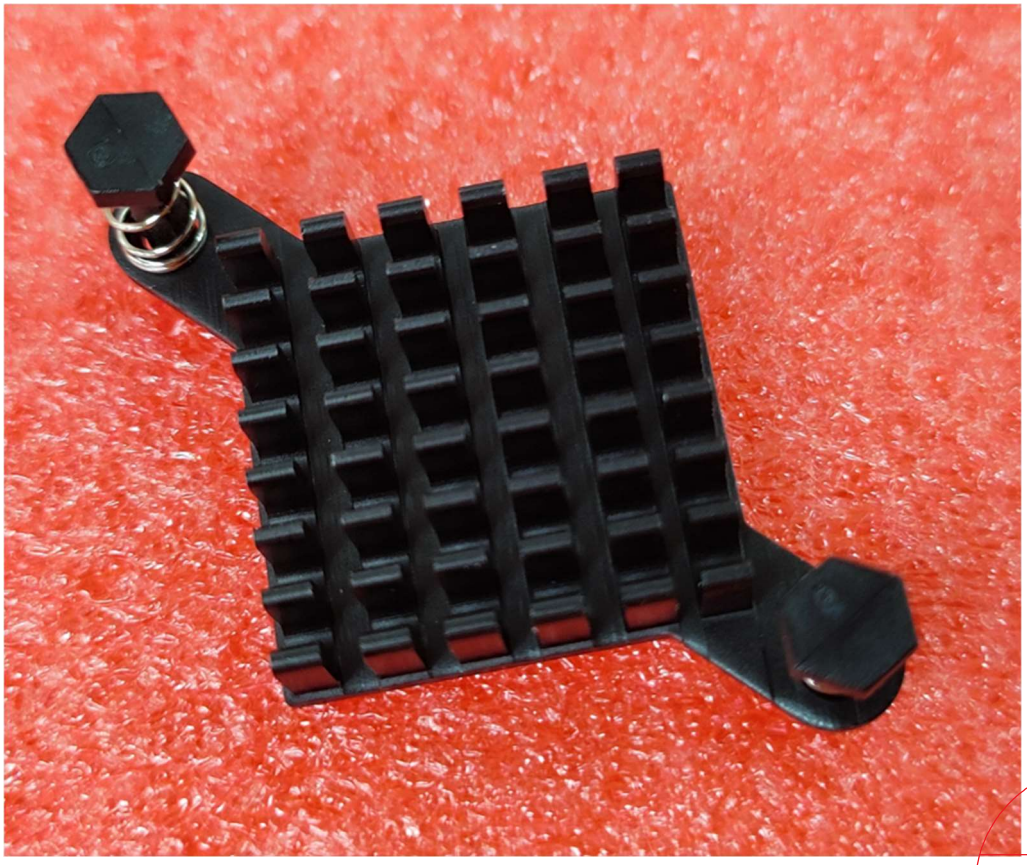
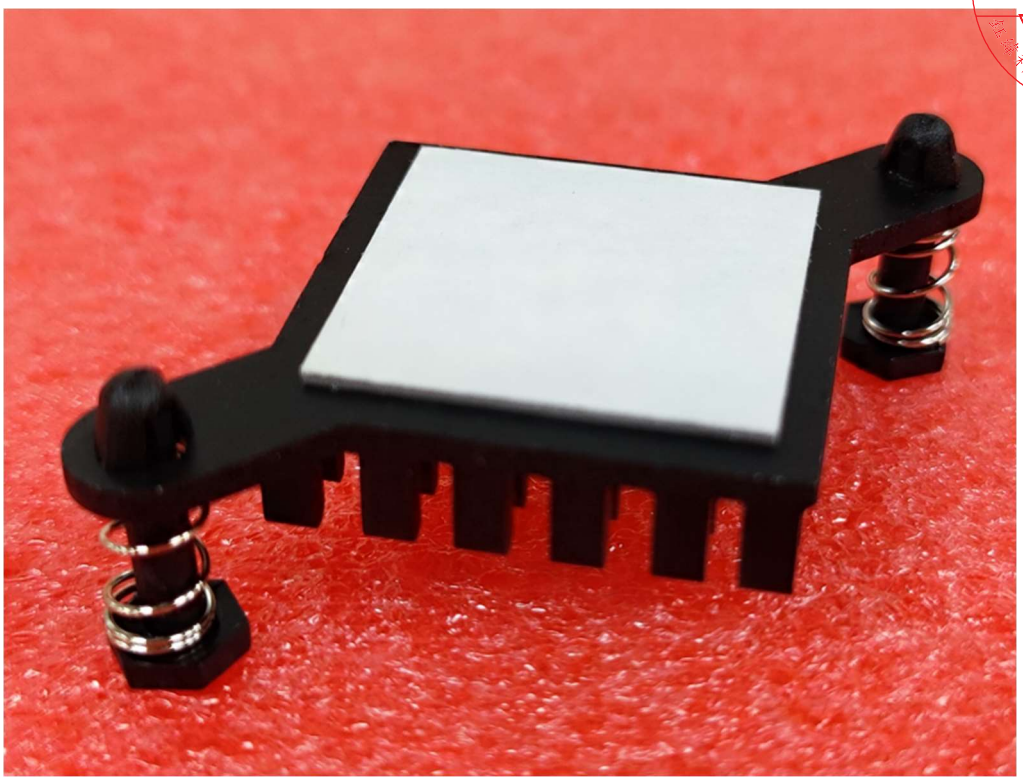




設計驗證
工程課
2024 -05- 03
發行

# 承　認　書
# SPECIFICATIONS

| | |
|---|---|
| 客　戶：<br>CUSTOMER | 鈺緯科技開發股份有限公司 |
| 貨品編號：<br>ACE MODEL NO. | CM470005 |
| 貨品名稱：<br>DESCRIPTION | Heat Sink |
| 客戶料號：<br>COUSTOMER | 3H070002200 (H0215) |
| 製作日期：<br>DATE | 2024/02/15 |
| 尺　寸：<br>SIZE | 22.0 x 6.5 x 22.0 mm |

設計驗證 工程課 2024-05-03 發行 鈺緯科技開發股份有限公司

承　認　者　簽　章

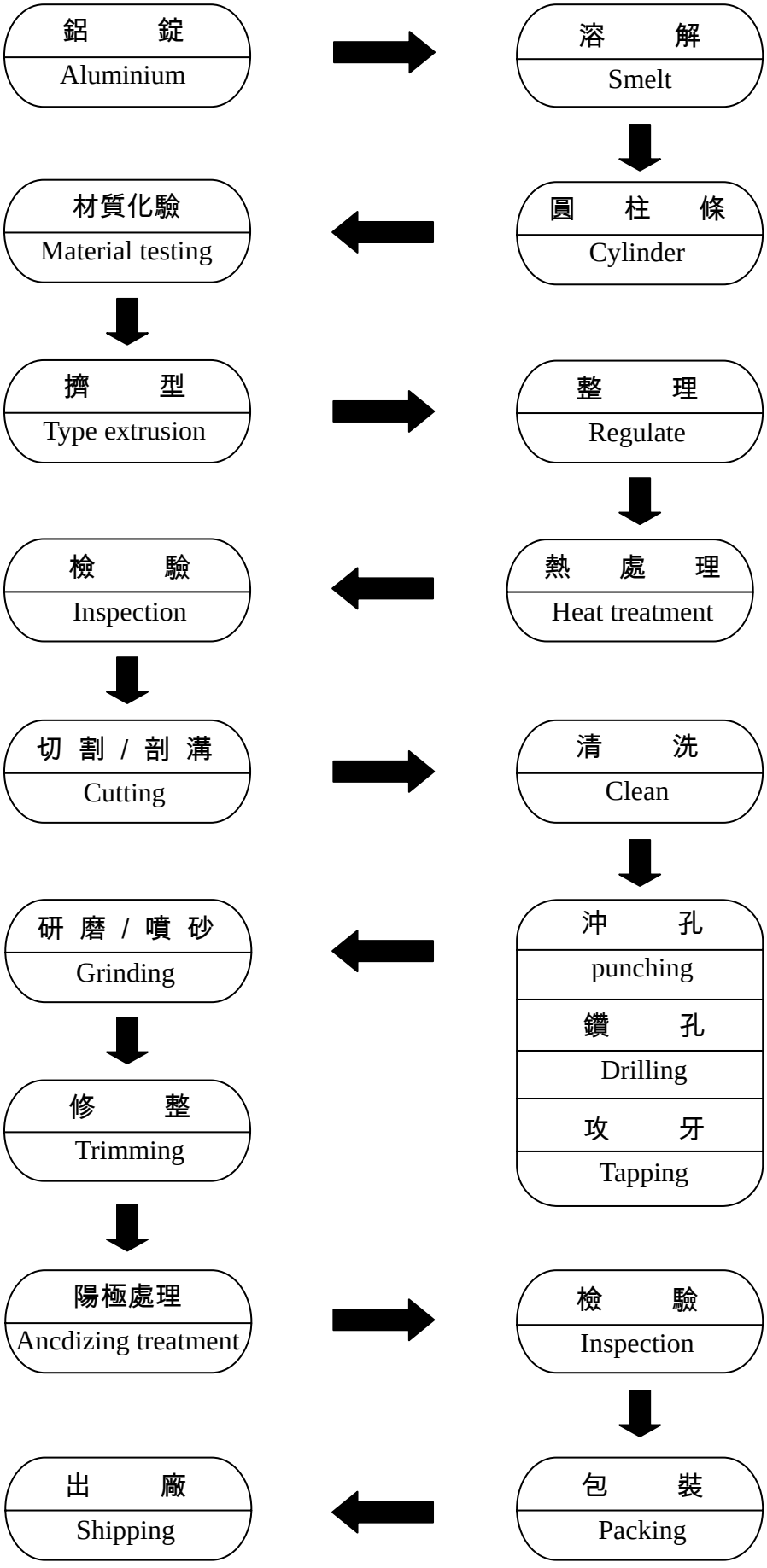
APPROVED　SIGNATURES

| | APPROVED | CHECKED | CHECKED | PREPARED |
|---|---|---|---|---|
| 研發<br>工程部 | | | 核准 業務工程部 陳昭宇 | 吳士凡 |

備註：

承認書的產品規格都經由雙方同意而承認，若產品於使用中發生任何問題，未告知我司或未經我司同意而自行重工，所產生之重工費用，我司一律不負責。

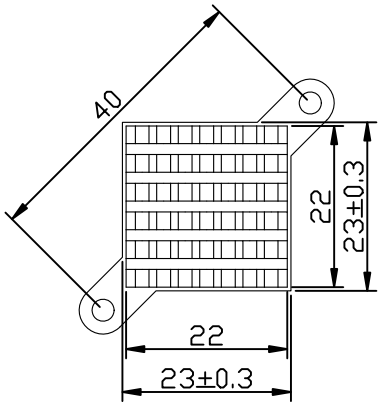
Ace

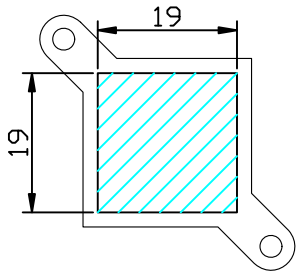

鋁 錠
Aluminium
溶 解
Smelt
圓 柱 條
Cylinder
材質化驗
Material testing
擠 型
Type extrusion
整 理
Regulate
熱 處 理
Heat treatment
檢 驗
Inspection
切 割 / 剖 溝
Cutting
清 洗
Clean
沖 孔
punching
鑽 孔
Drilling
攻 牙
Tapping
研 磨 / 噴 砂
Grinding
修 整
Trimming
陽極處理
Ancdizing treatment
檢 驗
Inspection
包 裝
Packing
出 廠
Shipping

# 真空成型盤包裝

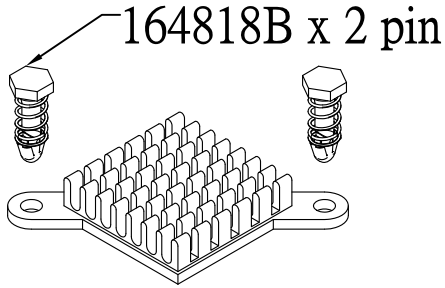
## 配 件 表 單

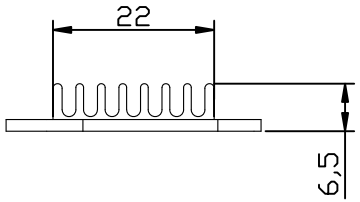
| 項目 | 配件料號 | 配件名稱 | 規格敘述 | 數量 |
|---|---|---|---|---|
| 1 | HACM470002 | HACM470 | HEAT SINK 22.0x6.5x22.0 | 1PCS |
| 2 | O2SU02000003 | 扣具 | 164818B | 2PCS |
| 3 | C2SU00400305 | 背膠 | TM320 19x19x0.5t(雙背) | 1PCS |

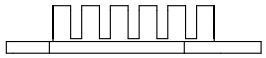



TM320 19x19x0.5t(雙背)



3H070002200(H0215)

設計驗證
工程課
2024-05-03
發行
鈺鐘科技開發股份有限公司

| 版次 | 日期 | 設變說明 |
|---|---|---|
| 3 | | |
| 2 | | |
| 1 | 105.04.12 | 新製 |

外觀處理： 陽極電鍍黑色

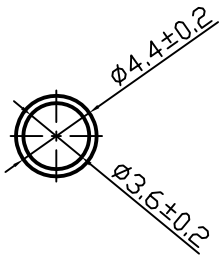
=亞晶電腦企業有限公司=

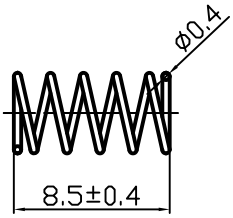
ASIACRYSTAL COMPUTER ENTERPRISE CO., LTD.
11F.,NO.120-11 CHUNG SHAN ROAD,SEC.3,
CHUNG HO CITY,TAIPEI HSIEN,TAIWAN,R.O.C

Acε
TEL:886-2-2226-4717
FAX:886-2-2226-4714

| | | | | | |
|---|---|---|---|---|---|
| 使模用號 | GO-8G881 | | | 亞料晶號 | CM470005 |
| 單位 | mm | SIZE | A4 | 品名規格 | CM470,B,TM320 |
| 版本 | A | 比例 | 1:1 | | |
| 日期 | 2016/04/12 | | | 材質 | AL-6063-T5 |
| 製圖確認 | 製圖員 | | | 文管中心 | TOLERANCES : ±0.3mm |
| KAI | VIC | | | VIC | |

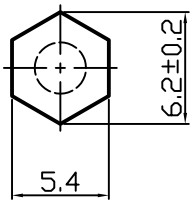
# 1.彈簧



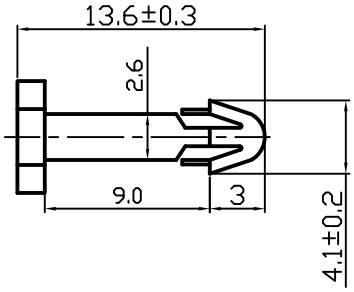



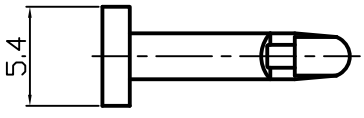

D

# 2.塑膠扣具




B




Model:164818A
164818B

專利號碼 : 164818
194762

誤差值 : ±0.2 mm

For : P.C.B ϕ3.0 ~ ϕ3.2

**164818V-V1 彈力測試表**

| | | |
|---|---|---|
| 1 | 5.00mm | 424.9gf |
| No | 9 | |
| 1 | 5.00mm | 430.4gf |
| No | 8 | |
| 1 | 5.00mm | 417.5gf |
| No | 7 | |
| 1 | 5.00mm | 397.1gf |
| No | 6 | |
| 1 | 5.00mm | 423.5gf |
| No | 5 | |
| 1 | 5.00mm | 407.2gf |
| No | 4 | |
| 1 | 5.00mm | 429.2gf |
| No | 3 | |
| 1 | 5.00mm | 421.6gf |
| No | 2 | |
| 1 | 5.00mm | 403.3gf |
| No | 1 | |

# 國揚鋁業股份有限公司

GO YANG ALUMINUM CO., LTD.

## 材質證明書

Material Certification

Material：Aluminum 6063 T5
Chemical Composition：

| 矽 Si | 鐵 Fe | 銅 Cu | 錳 Mn | 鋅 Zn |
|---|---|---|---|---|
| 0.20%~0.60% | 0.35% | 0.1% | 0.1% | 0.1% |

| 鎂 Mg | 鉻 Cr | 鈦 Ti | 其它元素 | 鋁 Al |
|---|---|---|---|---|
| 0.45%~0.90% | 0.10% | 0.1% | 0.15% | Other |

茲證明本公司所生產之鋁擠型符合上述標準

供應商：國揚鋁業股份有限公司
負責人：劉永樂
地址：台北縣三峽鎮成福路 105 巷 23 號
電話：02-26726233

# 物質安全資料表

序　號：130　　

## 一、 物品與廠商資料

| |
|---|
| 物品名稱：鋁(ALUMINUM) |
| 物品編號：— |
| 製造商或供應商名稱、地址及電話：—國揚鋁業股份有限公司 台北縣三峽鎮成福路105巷23號 |
| 緊急聯絡電話/傳真電話：— 02-26726233 / 02-26681566 |

## 二、 成分辨識資料

純物質：

| |
|---|
| 中英文名稱：鋁(ALUMINUM) |
| 同義名稱：(ALUMINIUM FLAKE、METANA、NORAL ALUMINUM、ALUMINUM 27) |
| 化學文摘社登記號碼（CAS No.）：07429-90-5 |
| 危害物質成分（成分百分比）：100 |

## 三、 危害辨識資料

| | |
|---|---|
| 最重要危害與效應 | 健康危害效應：大粒子會因磨擦而對眼睛產生刺激感。食入大量粉塵會造成胃及腸之磨擦刺激感。 |
| | 環境影響：— |
| | 物理性及化學性危害：反應快之可燃物質，潮濕的鋁粉在空氣中可能被引燃。可燃性之粉塵，與水、強酸、強鹼或醇類、胺類接觸會釋放易燃性的氫氣，與許多無機和有機化學品皆會起激烈或爆炸性的反應。 |
| | 特殊危害：— |
| 主要症狀：刺激感、肺組織之創傷(肺纖維素症)、呼吸困難、咳嗽、困倦、食慾減弱、呼吸急促。 | |
| 物品危害分類：4.3(禁水性物質) | |

## 四、 急救措施

不同暴露途徑之急救方法：

吸　　入：1.移走污染源或將患者移至新鮮空氣處。2.即刻就醫。

皮膚接觸：迅速輕拭掉附著於皮膚上之鋁。

眼睛接觸：1.打開眼皮，立即用溫水緩和沖洗 10 分鐘。2.即刻就醫。

食　　入：1.若患者即將或已失去意識，或痙攣，勿餵食。2.切勿催吐。3.給患者喝下 240～300 ml 水，以稀釋胃中物質。4.立即送醫。

最重要症狀及危害效應：會因摩擦而產生刺激

對急救人員之防護：應穿著 C 級防護裝備在安全區實施急救。

對醫師之提示：—

國揚鋁業股份有限公司 統一發票專用章 統一編號 01864524 負責人：劉水樂 TEL:26726233 台北縣 三峽鎮成福路105巷23號

## 五、 滅火措施

適用滅火劑：1.小火：砂、滑石、氯化鈉。2.大火：隔離火場並允許其繼續燃燒至完。

滅火時可能遭遇之特殊危害：1.粉塵於空氣中會形成爆炸性混合物。2.堆積的鋁粉，若潮濕時會自熱；粒子減小，危害性增加。

特殊滅火程序：1.勿用水滅火。2. 安全情況下將容器搬離火場。3. 自安全距離或受保護區域滅火。4.燃燒中的

# 物質安全資料表



| |
|---|
| 鋁粉末會與二氧化碳、鹵素滅火劑。5.可能的話，利用窒息法滅火。6.大火可能需隔離災區，任其燃燒。 |
| 消防人員之特殊防護裝備：配戴空氣呼吸器及防護手套、消防衣。 |

## 六、 洩漏處理方法

| |
|---|
| 個人應注意事項：1.在污染區尚未完全清理乾淨前，限制人員接近該區。2.確定清理工作是由受過訓練的人員負責。3.穿戴適當的個人防護裝備。 |
| 環境注意事項：1.對該區域進行通風換氣。2.撲滅或除去所有發火源。3.通知政府安全衛生與環保相關單位。 |
| 清理方法：1.移除所有引火源。2.配戴個人合適之防護裝備。3.勿碰觸外洩物。4.若無危險，設法阻漏。5.將外洩物鏟入乾淨且乾燥之容器內，加蓋並加標示。6.用水清洗外洩區。7.可燃物(紙、木材、油、衣服等)須遠離外洩物。 |

## 七、 安全處置與儲存方法

| |
|---|
| 處置：<br>1.遠離熱源、引火源及不相容物。<br>2.避免遭受碰撞。<br>3.保持粉末鋁產品乾燥。<br>4.時常清掃，避免粉塵之增加。 |
| 儲存：<br>1.儲存於陰涼、乾燥且通風良好處，避免陽光直射。<br>2.貯於能防粉塵溢出之容器內，並加標示，不用或空容器須蓋緊。 |

## 八、 暴露預防措施

工程控制：1.局部排氣裝置或整體換氣裝置。2.使用不會產生火花，接地之通風系統，並遠離其他排氣通風系統。

控 制 參 數

| 八小時日時量平均容許濃度 TWA | 短時間時量平均容許濃度 STEL | 最高容許濃度 CEILING | 生物指標 BEIs |
|---|---|---|---|
| — | — | — | — |

個人防護設備：

呼吸防護：防粉塵的呼吸防護具

手部防護：—

眼睛防護：化學安全護目鏡。

皮膚及身體防護：連身式工作服。

衛生措施：1.工作後儘速脫掉污染之衣物，洗淨後才可再穿戴或丟棄，且須告知洗衣人員污染物之危害性。2.工作場所嚴禁抽煙或飲食。3.處理此物後，須徹底洗手。4.維持作業場所清潔。

國揚鋁業股份有限公司
統一發票專用章
統一編號
01864524
負責人：劉永樂
TEL:26726233
台北縣
三峽鎮成福路105巷23號

## 九、 物理及化學性質

# 物質安全資料表



| | |
|---|---|
| 物質狀態：粉末 | 形狀：無味亮銀白色之軟質金屬粉末 |
| 顏色：亮銀白色之軟質金屬 | 氣味：無味 |
| pH 值：/ | 沸點/沸點範圍：2,467 ℃ |
| 分解溫度：— | 閃火點：　粉塵會爆炸<br>測試方法：　( )　開杯　( )　閉杯 |
| 自燃溫度：760℃ | 爆炸界限：— |
| 蒸氣壓：1 mm Hg @1284℃ | 蒸氣密度：/ |
| 密度：2.698@25℃(水=1) | 溶解度：不溶(水) |

## 十、 安定性及反應性

| |
|---|
| 安定性：正常狀況下安定 |
| 特殊狀況下可能之危害反應：1.強鹼(如氫氧化鈉)：釋出易燃性氫氣。2.強酸(如硫酸、鹽酸)：形成可溶性鹽類並放出氫氣。3.金屬(如鐵、鋅)：潮濕時會迅速腐蝕。4.金屬氧化物(如氧化鐵)：與鋁粉之混合物(鋁熱劑)，當著火時會起激烈反應，溫度會達 2200℃。5. 鹵素(如溴、氯、碘、氯化碘等)：會起火。6.氧化劑(氧、過氧化鈉、鉻酸)：起激烈反應或起火。7.醇(如丙醇、丁醇)：加熱時會起反應，生成 alkoxide。8.鹵化碳氫化合物(四氯化碳)，加熱或磨擦會起爆炸性反應。9.水：堆積的鋁粉潮濕時會自熱，產生氫氣；鋁粉與水之混合物若引爆會爆炸。 |
| 應避免之狀況：粉塵產生、濕氣、熱、火花、引火源 |
| 應避免之物質：1.強鹼(如氫氧化鈉)。2.強酸(如硫酸、鹽酸)。3.金屬(如鐵、鋅)。4.金屬氧化物(如氧化鐵)。5. 鹵素(如溴、氯、碘、氯化碘等)。6.氧化劑(氧、過氧化鈉、鉻酸)。7.醇(如丙醇、丁醇) 8.鹵化碳氫化合物(四氯化碳)。9.水。 |
| 危害分解物：— |

## 十一、毒性資料

| |
|---|
| 急毒性：吸入：1.高濃度之粉塵會造成物理性之磨擦，亦會沉積於鼻子之通路。<br>眼睛：1.粉塵會附著於眼睛上，一般而言不會產生刺激。2.大粒子會因磨擦而對眼睛產生刺激感。<br>皮膚：粉塵不會刺激皮膚，但會因磨擦而產生刺激感。<br>食入：1.食入鋁不會有中毒現象。2.食入大量粉塵會造成胃及腸之磨擦刺激感。<br>LD50(測試動物、暴露途徑)：-<br>LC50(測試動物、暴露途徑)：- |
| 局部效應：— |
| 致敏感性：— |
| 慢毒性或長期毒性：1.細微鋁粉會造成肺組織之創傷(肺纖維素症)，其傷害肺的程度依粒子大小、濃度暴露時間及其他污染物而有所不同，會引起呼吸困難、咳嗽、困倦、食慾減弱及呼吸急促，以及類似氣喘之症狀。2.暴露於粉塵中除了肺組織受到傷害外，腦亦會受到傷害。3.鋁與腦早期老邁有關，但是目前還有爭論且未證實。4.食入鋁會迅速排泄出，小量會被吸收，但會由尿中排出；食入鋁粒子會沉積於肺中。 |
| 特殊效應：— |

國揚鋁業股份有限公司 統一發票專用章 統一編號 01864524 負責人：劉永樂 TEL:26726233 台北縣 三峽鎮成福路105巷23號

# 物質安全資料表

序　號：130



## 十二、生態資料

可能之環境影響/環境流佈：

1.鋁在地球上的蘊藏量，分佈很廣，以各種金屬的鋁矽酸鹽的型態構成岩石及土壤的主要成分。

2.在大氣中會氧化生成膜而增強抗侵蝕性。

3.在常溫下與純水接觸會生成氫氧化物的膜而不被侵蝕，但與含氧的普通水接觸會被緩慢侵蝕。

4.鋁為兩性元素故溶於酸及鹼溶液中。

## 十三、廢棄處置方法

廢棄處置方法：

1.處理前，參考現行法規。2.依儲存條件來儲存廢棄物。3.掩埋。4.精製回收。

## 十四、運送資料

| |
|---|
| 國際運送規定：1.DOT 49 CFR 將之列為第 4.3 類禁水性物質，包裝等級Ⅱ。(美國交通部)<br>2.IATA/ICAO 分級：4.3。(國際航運組織)<br>3.IMDG 分級：4.3。(國際海運組織) |
| 聯合國編號：1396 |
| 國內運輸規定：1.道路交通安全規則第 84 條<br>2.船舶危險品裝載規則<br>3.台灣鐵路局危險品裝卸運輸實施細則 |
| 特殊運送方法及注意事項：— |

## 十五、法規資料

適用法規：

| | |
|---|---|
| 勞工安全衛生設施規則 | 危險物及有害物通識規則 |
| 勞工作業環境空氣中有害物容許濃度標準 | 道路交通安全規則 |
| 事業廢棄物貯存清除處理方法及設施標準 | 公共危險物品及可燃性高壓氣體設置暨安全管理辦法 |

## 十六、其他資料

| | | |
|---|---|---|
| 參考文獻 | 1.CHEMINFO 資料庫，CCINFO 光碟，98-2<br>2.HSDB 資料庫，TOMES PLUS 光碟，Vol.41，1999 | |
| 製表者單位 | 名稱：國揚鋁業股份有限公司<br>地址/電話台北縣三峽鎮成福路105巷23號 | |
| 製表人 | 職稱： | 姓名(簽章)： |
| 製表日期 | 990420 | |
| 備　　註 | 上述資料中符號"—"代表目前查無相關資料，而符號"/"代表此欄位對該物質並不適用。 | |

國揚鋁業股份有限公司
統一發票專用章
統一編號
01864524
負責人：劉永樂
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台北縣
三峽鎮成福路105巷23號

# 測試報告
# Test Report

號碼(No.): ETR23605429　　日期(Date): 06-Jul-2023　　

國揚鋁業股份有限公司 (GOYANG ALUMINUM CO., LTD.)
新北市三峽區成福路105巷23號 (NO. 23, LANE 105, CHENFU RD., SANXIA DIST., NEW TAIPEI CITY, TAIWAN, 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 the applicant as)：**

| | | |
|---|---|---|
| 送樣廠商(Sample Submitted By) | : | 國揚鋁業股份有限公司 (GOYANG ALUMINUM CO., LTD.) |
| 樣品名稱(Sample Name) | : | 鋁擠型 |
| 樣品型號(Style/Item No.) | : | 6063 |

==========

| | | |
|---|---|---|
| 收件日(Sample Receiving Date) | : | 29-Jun-2023 |
| 測試期間(Testing Period) | : | 29-Jun-2023 to 06-Jul-2023 |

**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 / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT
PIN CODE: 996A0DD4

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# 測試報告
# Test Report



國揚鋁業股份有限公司 (GOYANG ALUMINUM CO., LTD.)
新北市三峽區成福路105巷23號 (NO. 23, LANE 105, CHENFU RD., SANXIA DIST., NEW TAIPEI CITY, TAIWAN, R. O. C.)

**測試部位敘述 (Test Part Description)**

No.1 : 銀色金屬 (SILVER COLORED METAL)

**測試結果 (Test Results)**

| 測試項目 (Test Items) | 測試方法 (Method) | 單位 (Unit) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| 鎘 (Cd) (Cadmium (Cd)) | 參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.) | mg/kg | 2 | n.d. | 100 |
| 鉛 (Pb) (Lead (Pb)) | 參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.) | mg/kg | 2 | 20.3 | 1000 |
| 汞 (Hg) (Mercury (Hg)) | 參考IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.) | mg/kg | 2 | n.d. | 1000 |
| 六價鉻 (Hexavalent Chromium) Cr(VI) (#2) | 參考IEC 62321-7-1: 2015，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.) | μg/cm² | 0.1 | n.d. | - |
| 一溴聯苯 (Monobromobiphenyl) | 參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.) | 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. | - |
| **多溴聯苯總和 (Sum of PBBs)** | | mg/kg | - | n.d. | 1000 |

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| 測試項目 (Test Items) | 測試方法 (Method) | 單位 (Unit) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| 一溴聯苯醚 (Monobromodiphenyl ether) | 參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.) | 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. | - |
| **多溴聯苯醚總和 (Sum of PBDEs)** | | mg/kg | - | n.d. | 1000 |
| 鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP)) | 參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.) | mg/kg | 50 | n.d. | 1000 |
| 鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP)) | | mg/kg | 50 | n.d. | 1000 |
| 鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) | | mg/kg | 50 | n.d. | 1000 |
| 鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) | | mg/kg | 50 | n.d. | 1000 |
| 鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1) | | mg/kg | 50 | n.d. | - |
| 鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (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 (DNOP)) (CAS No.: 117-84-0) | | mg/kg | 50 | n.d. | - |
| 全氟辛烷磺酸及其鹽類 (PFOS and its salts) (CAS No.: 1763-23-1 and its salts) | 參考CEN/TS 15968: 2010，以液相層析串聯質譜儀分析。(With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.) | mg/kg | 0.01 | n.d. | - |
| 全氟辛酸及其鹽類 (PFOA and its salts) (CAS No.: 335-67-1 and its salts) | | mg/kg | 0.01 | n.d. | - |


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| 測試項目 (Test Items) | 測試方法 (Method) | 單位 (Unit) | MDL | 結果 (Result) No.1 | 限值 (Limit) |
|---|---|---|---|---|---|
| 氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8) | 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.) | mg/kg | 50 | n.d. | - |
| 氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1) | | mg/kg | 50 | n.d. | - |
| 溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2) | | mg/kg | 50 | n.d. | - |
| 碘 (I) (Iodine (I)) (CAS No.: 14362-44-8) | | mg/kg | 50 | n.d. | - |

**備註(Note)：**

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)；小於MDL / Less than MDL
4. "-" = Not Regulated (無規格值)
5. 全氟辛烷磺酸及其鹽類包含等物質 (PFOS and its salts including)：
   CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
6. 全氟辛酸及其鹽類包含等物質 (PFOA and its salts including)：
   CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
7. (#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.)
8. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)

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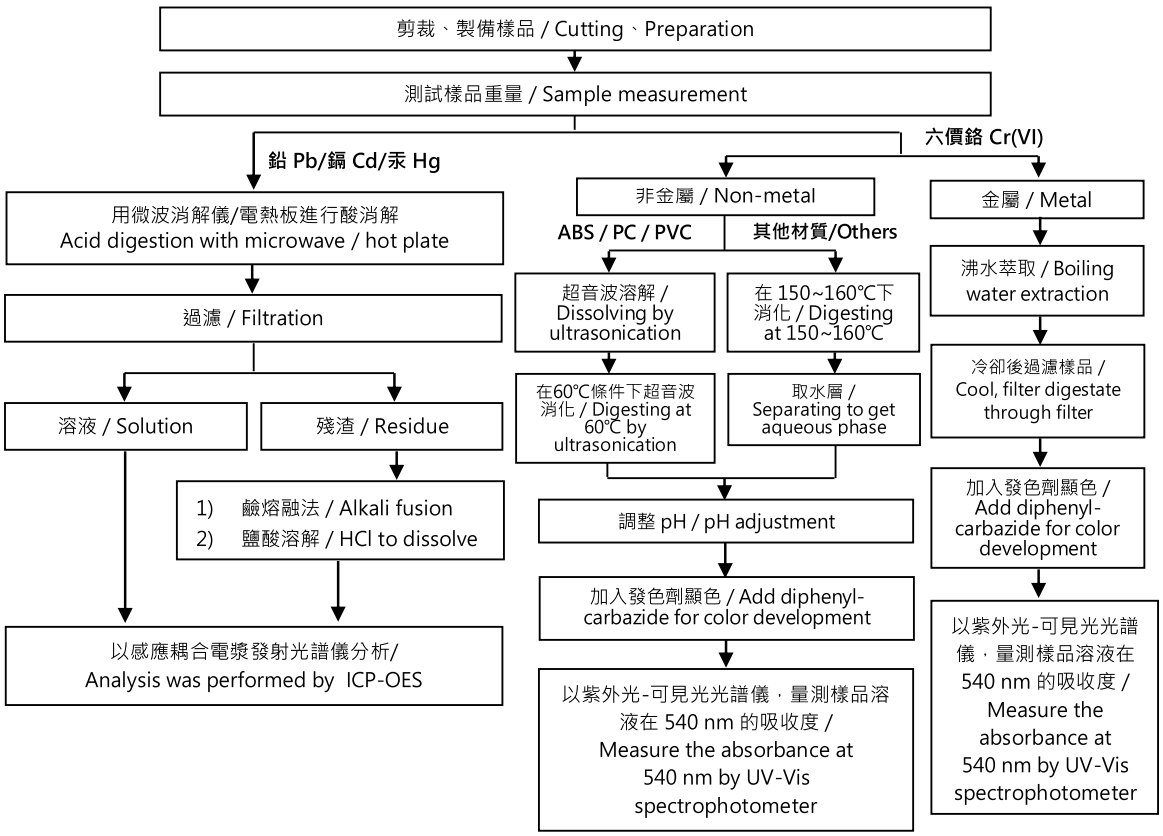
## 重金屬流程圖 / Analytical flow chart of heavy metal

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）





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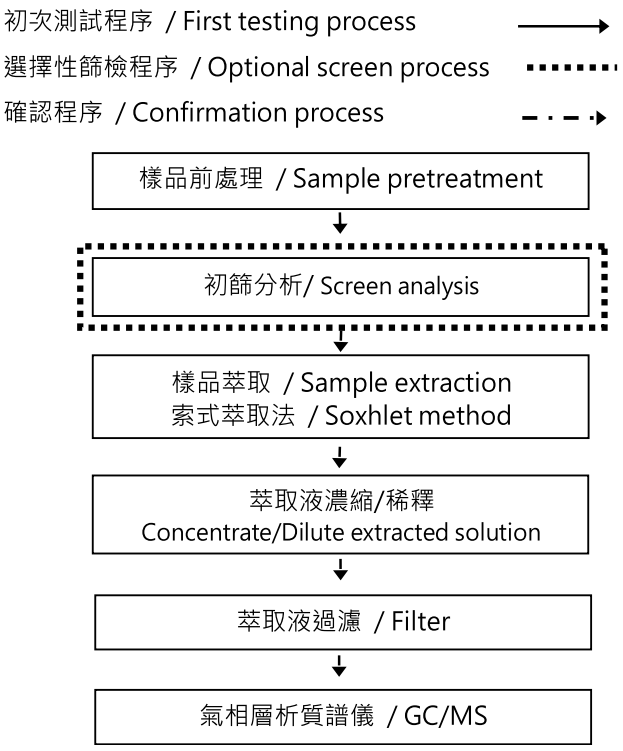
**多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs**

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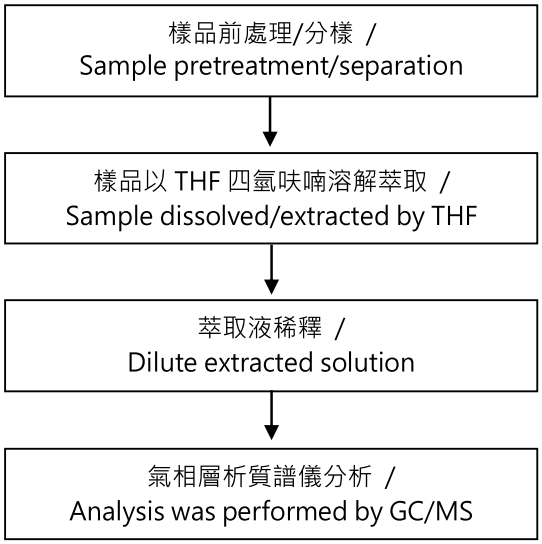
**可塑劑分析流程圖 / Analytical flow chart - Phthalate**

**【測試方法/Test method: IEC 62321-8】**

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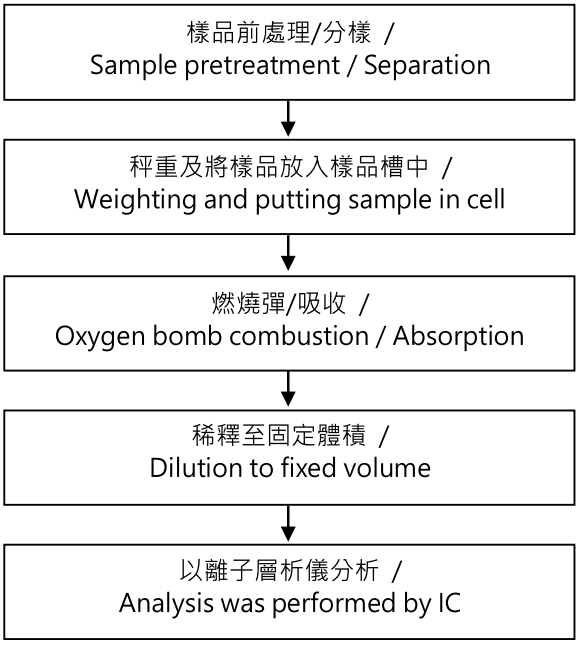
國揚鋁業股份有限公司 (GOYANG ALUMINUM CO., LTD.)
新北市三峽區成福路105巷23號 (NO. 23, LANE 105, CHENFU RD., SANXIA DIST., NEW TAIPEI CITY, TAIWAN, R. O. C.)

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

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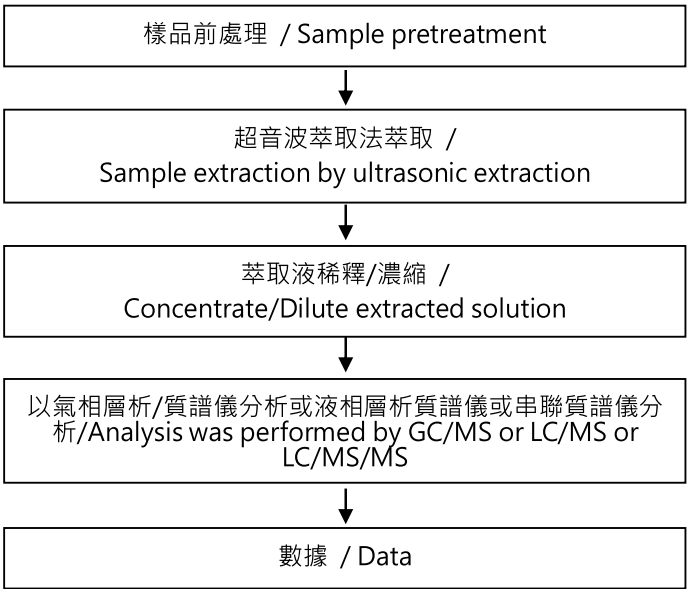
**全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)**

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# 測試報告
# Test Report

號碼(No.): ETR23605429　　日期(Date): 06-Jul-2023　　

國揚鋁業股份有限公司 (GOYANG ALUMINUM CO., LTD.)
新北市三峽區成福路105巷23號 (NO. 23, LANE 105, CHENFU RD., SANXIA DIST., NEW TAIPEI CITY, TAIWAN, R. O. C.)

*** 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.)**

**ETR23605429**




** 報告結尾 (End of Report) **

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