

測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 1 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, 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/on behalf of the applicant as):

送樣廠商(Sample Submitted By) : 道全股份有限公司 (DC COMPONENTS CO., LTD.)
樣品名稱(Sample Description) : PLASTIC RECTIFIER
樣品型號(Style/Item No.) : R-1, A-405, DO-41, DO-15, R-3, DO-27, DO-201AE, R-6M, R-6, SOD-123, SOD-123F, SOD-323, SOD-323F, SOD-523, SOD-723, SOT-23, SOT-223, SOT-323, SOT-346, SOT-416, SOT-353, SOT-363, SOT-89, HVM, TO-220A, TO-220, TO-3, TO-3P, TO-92, TO-92S, TO-126, TO-126ML, TO-251, TO-252, TO-263, SMA, SMB, SMC, SM-1, SM-2, RA, RAS, 0603, 0805, 1005, 1006, 1206, 2010, 2114, DB-1, DB-1S, DB-1MS, RB-15, RC-2, WOM, RS-1, RS-2, RS-5, HBL, HBU, TBL, KBL, KBU, KBJ, KBK, KBP, KBPC-6/8/10, BR-3, BR-6, BR-25, BR-25L, BR-25W, MB-25, MB-25W, MBR-25, MBR-25W, MMB-25, MMB-25W, MP-6, MP-8, GBJ2, GBJ4-10, GBK, GBL, GBU, GBP, GBPC-6/8/10, TBS, MBFL, SMA-L, SMB-L, SOD-123FL, D3K, TO-247AC MODIFIED, ITO-220, ITO-220A, TBR, SMAFL, SMBFL, ABS, ABF, MBS, MBF, TO-277A, MBM, TO-277, SMA-L, TO-277B, 0805C, 1206C, 0603C, 0201C, 0402C, 2510C, 1210C, 2512C, DFN, QFN

收件日期(Sample Receiving Date) : 2019/06/21

測試期間(Testing Period) : 2019/06/21 to 2019/06/28

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).


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



測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 2 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

測試結果(Test Results)

測試部位(PART NAME)No. 1 : 黑色塑膠 (BLACK PLASTIC)

測試部位(PART NAME)No. 2 : 銀色金屬端子 (含鍍層) (SILVER COLORED METAL PIN (INCLUDING THE PLATING LAYER))

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)	
				No. 1	No. 2
鎘 / Cadmium (Cd)	mg/kg	參考 IEC 62321-5 (2013), 以感應耦合電漿原子發射光譜儀檢測. / With	2	n. d.	n. d.
鉛 / Lead (Pb)	mg/kg	reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	4.21	26.2
汞 / Mercury (Hg)	mg/kg	參考 IEC 62321-4:2013+ AMD1:2017, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-AES.	2	n. d.	n. d.
六價鉻 / Hexavalent Chromium Cr(VI) (◆)	mg/kg	參考 IEC 62321-7-2 (2017), 以UV-VIS檢測; 參考 IEC 62321-5 (2013), 以ICP-AES檢測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS. ; With reference to IEC 62321-5 (2013) and performed by ICP-AES.	8	n. d.	---
六價鉻 / Hexavalent Chromium Cr(VI)(#2)	µg/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.

測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 3 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)	
				No. 1	No. 2
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321-6 (2015), 以氣相層析儀/ 質譜儀檢測. / With reference to IEC 62321-6 (2015) 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.	---
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	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.	---	

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 4 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result)	
				No. 1	No. 2
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No. : 85-68-7)	mg/kg	參考IEC 62321-8 (2017), 以氣相層析儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n. d.	---
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No. : 84-74-2)	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.	---
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.	---
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.	---

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 5 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

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. "---" = Not Conducted (未測項目)

6. (#2) =

a. 當六價鉻結果大於 $0.13 \mu\text{g}/\text{cm}^2$ ，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 $0.13 \mu\text{g}/\text{cm}^2$. The sample coating is considered to contain Cr(VI).

b. 當六價鉻結果為n.d. (濃度小於 $0.10 \mu\text{g}/\text{cm}^2$)，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 $0.10 \mu\text{g}/\text{cm}^2$). The coating is considered a non-Cr(VI) based coating

c. 當六價鉻結果介於 0.10 及 $0.13 \mu\text{g}/\text{cm}^2$ 時，無法確定塗層是否含有六價鉻。 / The result between $0.10 \mu\text{g}/\text{cm}^2$ and $0.13 \mu\text{g}/\text{cm}^2$ is considered to be inconclusive - unavoidable coating variations may influence the determination.

7. (◆) :

若鉻含量小於六價鉻之方法偵測極限值，則六價鉻為n.d.，不須再測試六價鉻。

The result of Cr(VI) is "n.d." as the result of Chromium (Cr) is less than the MDL of Cr(VI), and confirmation test of Cr(VI) is not required.

若鉻含量未小於六價鉻之方法偵測極限值，需進行六價鉻測試。

If the Chromium (Cr) content is not less than the MDL of Cr(VI), confirmation test of Cr(VI) is required.

測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 6 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

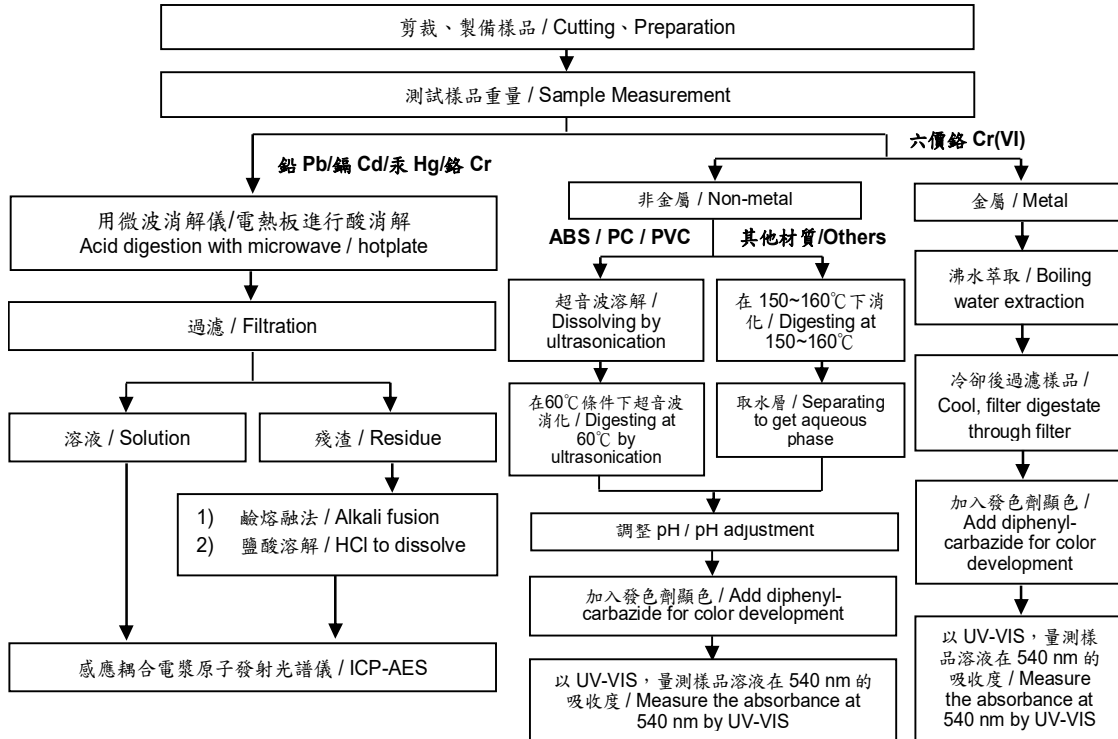
6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

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. (Cr⁶⁺ test method excluded)

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



測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 7 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

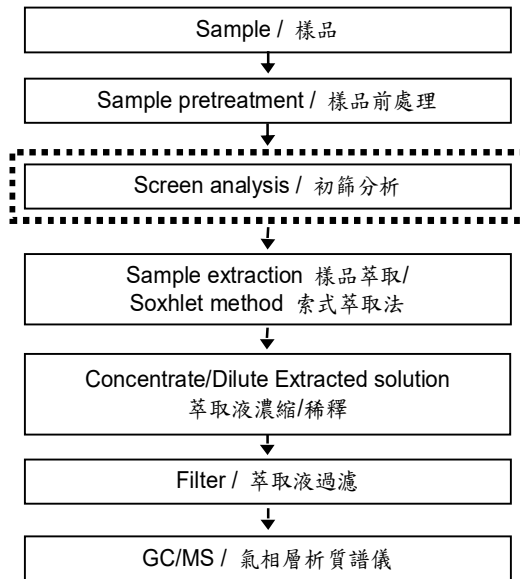
臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

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 - - ->



測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 8 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

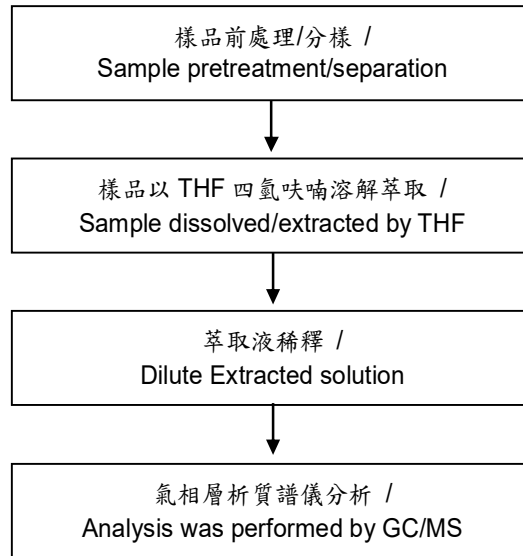
臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

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】



測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 9 of 10

道全股份有限公司

DC COMPONENTS CO., LTD.

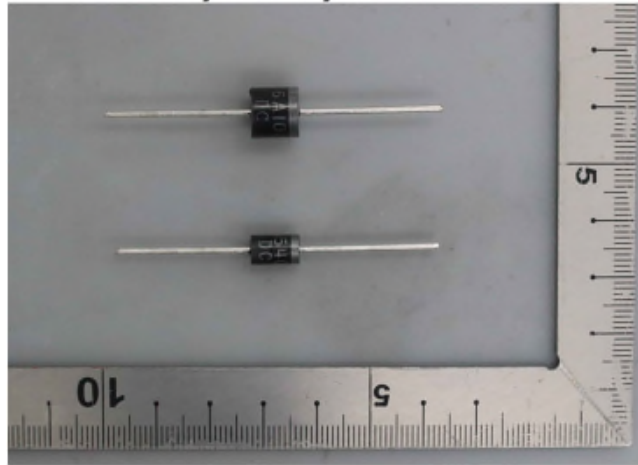
臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

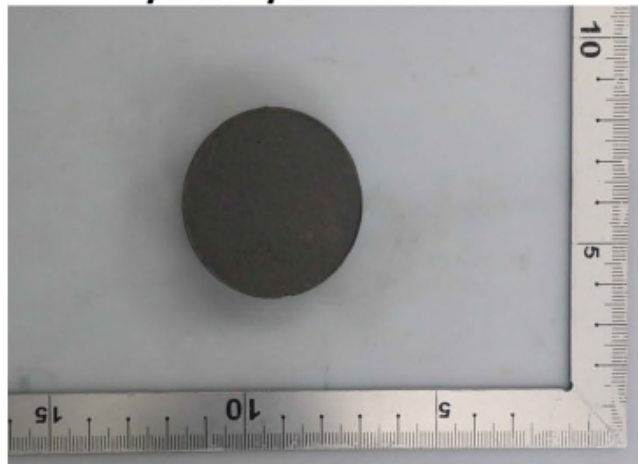
* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2019/63632



CE/2019/63632 NO.1



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com/en/terms-and-conditions/terms-e-document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

測試報告

Test Report

號碼(No.) : CE/2019/63632

日期(Date) : 2019/07/03

頁數(Page): 10 of 10

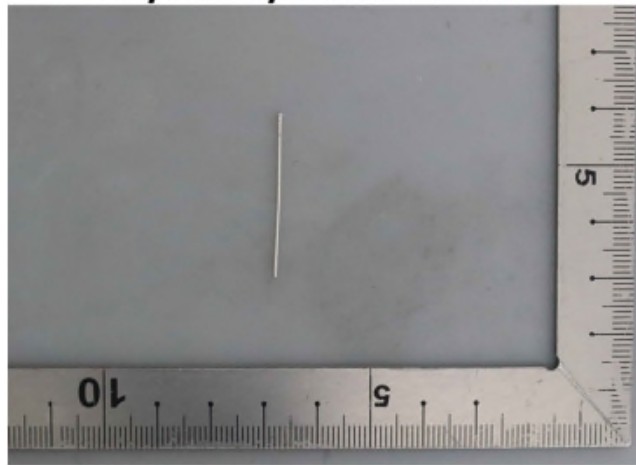
道全股份有限公司

DC COMPONENTS CO., LTD.

臺中市北屯區東山路一段308號6樓

6F., NO. 308, SEC. 1, DONGSHAN RD., TAICHUNG, TAIWAN, R. O. C.

CE/2019/63632 NO.2



** 報告結尾 (End of Report) **