



# **Material dissolution test**

## 測試報告 Test Report

號碼(No.) : CT/2016/C0056

日期(Date) : 2016/12/13

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禾凱科技有限公司

HO KAI TECHNOLOGY CO., LTD

台中市大雅區大楓里前村路208號1樓

1F., 208-1, QIANCUN RD., DAYA DIST., TAICHUNG CITY 428, 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)	: 禾凱科技有限公司 (HO KAI TECHNOLOGY CO., LTD)
樣品名稱(Sample Description)	: POLYLACTIC ACID TABLEWARE(CORN BASED)PLA聚乳酸餐具
樣品材質(Sample Material)	: PLA
原產國(Country of Origin)	: 台灣 (TAIWAN)
其他(Other Info.)	: 品牌: 蓮品® (Brand: 蓮品®)
收件日期(Sample Receiving Date)	: 2016/12/02
測試期間(Testing Period)	: 2016/12/02 TO 2016/12/13

### 測試需求(Test Requested) :

依據客戶指定, 參考中華民國食品器具容器包裝衛生標準 (102.08.20部授食字第1021350146號令修正)進行測試。測試項目請參閱測試結果表格。 / As specified by client, with reference to Sanitation Standard for Food Utensils, Containers and Packages (MOHW Food No. 1021350146 was amended on 2013/08/20) to conduct test. Please refer to result table for testing item(s).

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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### 測試結果(Test Results)

測試部位(PART NAME)No. 1 : 白色碗 (WHITE BOWL)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	定量 極限 (LOQ)	結果 (Result)	限值 (Limit)
				No. 1	
鉛 / Lead (Pb)	ppm	參考食品器具、容器、包裝檢驗方法-聚乳酸(PLA)塑膠類之檢驗(MOHWU0017.02, 104年10月29日部授食字第1041901888號公告), 以ICP-AES分析. / As described in Methods of Test for Food Utensils, Containers and Packages - Test of Polylactic Acid (PLA) Plastic Products (MOHWU0017.02, MOHW Food No. 1041901888 announced, October 29, 2015). Analysis was performance by ICP-AES.	5	n. d.	100
鎘 / Cadmium (Cd)	ppm	參考食品器具、容器、包裝檢驗方法-聚乳酸(PLA)塑膠類之檢驗(MOHWU0017.02, 104年10月29日部授食字第1041901888號公告). / As described in Methods of Test for Food Utensils, Containers and Packages - Test of Polylactic Acid (PLA) Plastic Products (MOHWU0017.02, MOHW Food No. 1041901888 announced, October 29, 2015).	0.5	n. d.	100
高錳酸鉀消耗量-(水, 60°C, 30分鐘) / Potassium permanganate consumption-(water, 60°C, 30 min)	ppm	參考食品器具、容器、包裝檢驗方法-聚乳酸(PLA)塑膠類之檢驗(MOHWU0017.02, 104年10月29日部授食字第1041901888號公告). / As described in Methods of Test for Food Utensils, Containers and Packages - Test of Polylactic Acid (PLA) Plastic Products (MOHWU0017.02, MOHW Food No. 1041901888 announced, October 29, 2015).	3	n. d.	10
重金屬(以鉛計)-(4%醋酸, 60°C, 30分鐘) / Heavy metal (as Pb)-(4% acetic acid, 60°C, 30 min)	ppm	參考食品器具、容器、包裝檢驗方法-聚乳酸(PLA)塑膠類之檢驗(MOHWU0017.02, 104年10月29日部授食字第1041901888號公告). / As described in Methods of Test for Food Utensils, Containers and Packages - Test of Polylactic Acid (PLA) Plastic Products (MOHWU0017.02, MOHW Food No. 1041901888 announced, October 29, 2015).	1	Negative	1

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	定量 極限 (LOQ)	結果 (Result) No. 1	限值 (Limit)
蒸發殘渣 (水, 60°C, 30分鐘) / Evaporation residue (water, 60°C, 30 min)	ppm	參考食品器具、容器、包裝檢驗方法-聚 乳酸(PLA)塑膠類之檢驗(MOHWU0017.02, 104年10月29日部授食字第1041901888號 公告). / As described in Methods of Test for Food Utensils, Containers and Packages - Test of Polylactic Acid (PLA) Plastic Products (MOHWU0017.02, MOHW Food No. 1041901888 announced, October 29, 2015).	10	n. d.	30
蒸發殘渣 (4%醋酸, 60°C, 30分鐘) / Evaporation residue (4% acetic acid, 60°C, 30 min)	ppm		10	n. d.	30
蒸發殘渣 (20%酒精, 60°C, 30分鐘) / Evaporation residue (20% alcohol, 60°C, 30 min)	ppm		10	n. d.	30
蒸發殘渣 (正庚烷, 25°C, 1小時) / Evaporation residue (n-Heptane, 25°C, 1 hr)	ppm		10	n. d.	30
總乳酸 (水, 60°C, 30分鐘) / Total lactic acid (water, 60°C, 30 min)	ppm		5	n. d.	30
鄰苯二甲酸二(2-乙基己基)酯 (正庚烷, 25°C, 1小時) / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No. : 117-81-7) (n- Heptane, 25°C, 1 hr)	ppm	參考食品器具、容器、包裝檢驗方法-塑 膠類之檢驗(102年11月13日部授食字第 1021950607號公告), 以氣相層析/質譜 儀檢測. / With reference to Sanitation Standard for Food Utensils, Containers and Packages- Plastics (MOHW Food No. 1021950607 announced, November 13, 2013). Analysis was performed by GC/MS.	0.05	n. d.	1.5
鄰苯二甲酸二丁酯 (正庚烷, 25°C, 1小時) / DBP (Di-n-butyl phthalate) (CAS No. : 84-74-2) (n-Heptane, 25°C, 1 hr)	ppm		0.05	n. d.	0.3
鄰苯二甲酸丁苄甲酯 (正庚烷, 25°C, 1小 時) / BBP (Butyl Benzyl phthalate) (CAS No. : 85-68-7) (n-Heptane, 25°C, 1 hr)	ppm		0.05	n. d.	30
鄰苯二甲酸二異癸酯 (正庚烷, 25°C, 1小 時) / DIDP (Diisodecyl phthalate) (CAS No. : 26761-40-0; 68515-49-1) (n- Heptane, 25°C, 1 hr)	ppm		0.5	n. d.	9

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	定量 極限 (LOQ)	結果 (Result) No. 1	限值 (Limit)
鄰苯二甲酸二異壬酯 (正庚烷, 25°C, 1小時) / DINP (Diisononyl phthalate) (CAS No. : 28553-12-0; 68515-48-0) (n-Heptane, 25°C, 1 hr)	ppm	參考食品器具、容器、包裝檢驗方法-塑膠類之檢驗(102年11月13日部授食字第1021950607號公告), 以氣相層析/質譜儀檢測。 / With reference to Sanitation Standard for Food Utensils, Containers and Packages-Plastics (MOHW Food No. 1021950607 announced, November 13, 2013). Analysis was performed by GC/MS.	0.5	n. d.	9
己二酸二(2-乙基己基)酯 (正庚烷, 25°C, 1小時) / DEHA (Di-2-ethylhexyl Adipate) (CAS No. : 103-23-1) (n-Heptane, 25°C, 1 hr)	ppm		0.05	n. d.	18

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	MDL	結果 (Result) No. 1	限值 (Limit)
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No. : 117-81-7)	%	參考CNS 15138-1 (民國101年), 以氣相層析/質譜儀檢測。 / With reference to CNS 15138-1 (2012). Analysis was performed by GC/MS.	0.003	n. d.	0.1
鄰苯二甲酸二丁酯 / DBP (Di-n-butyl phthalate) (CAS No. : 84-74-2)	%		0.003	n. d.	0.1
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No. : 85-68-7)	%		0.003	n. d.	0.1
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No. : 117-84-0)	%		0.003	n. d.	0.1
鄰苯二甲酸二異壬酯 / DINP (Diisononyl phthalate) (CAS No. : 28553-12-0; 68515-48-0)	%		0.01	n. d.	0.1
鄰苯二甲酸二甲酯 / DMP (Dimethyl phthalate) (CAS No. : 131-11-3)	%		0.003	n. d.	0.1
鄰苯二甲酸二異癸酯 / DIDP (Diisodecyl phthalate) (CAS No. : 26761-40-0; 68515-49-1)	%		0.01	n. d.	0.1
鄰苯二甲酸二乙酯 / DEP (Diethyl phthalate) (CAS No. : 84-66-2)	%		0.003	n. d.	0.1

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## 備註(Note) :

1. 0.1wt% = 1000ppm
2. LOQ = Limit of Quantification (定量極限); MDL = Method Detection Limit (方法偵測極限值)
3. n. d. = Not Detected = 小於 (less than) LOQ / MDL (未檢出)
4. 基於商業競爭及其他因素考量,除了第一頁的資料以外,顧客表示無法提供其餘與樣品相關的資料。/ Due to the commercial competition and other consideration the client can't provide information related to the submitted sample besides the information listed on the page one.
5. Negative = Undetectable (未檢出); Positive = Detectable (檢出)
6. 測試報告僅就委託測試者之委託事項提供測試結果,至若本產品之合法性,仍應由主管機關依法判斷。(The test report is the test result issued by the testing institutions as requested by the consignor. Regarding to the legitimacy of the product, it shall be determined by the authorities according to the law.)

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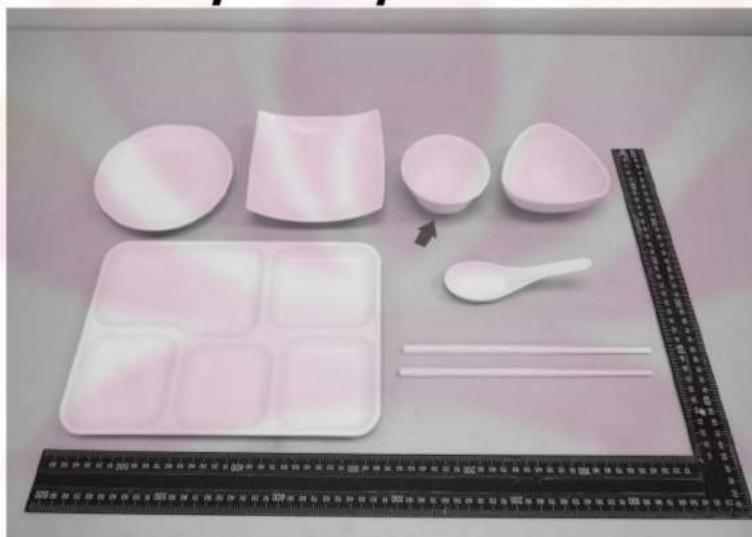
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\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。\*  
(The tested sample / part is marked by an arrow if it's shown on the photo.)

### CT/2016/C0056



\*\* 報告結尾 (End of Report) \*\*

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