

**PC key三大類型：正面噴塗 key / PC key type: Hard-coating key**



**問題點 Problem**

會造成背面污染，膠材接著於噴塗污染金油上面，加上金油為增加耐磨及光滑亮度，會增加接著困難

Spraying for hard-coating on surface will pollute backside which increase difficulty for bonding.

**解決方式 Solution**

用溶劑如酒精，正己烷擦拭污染面，或改用侵蝕性較強的壓克力系接著劑來滲透接著表面，可提升接著力

Use ethanol or hexane with cloth to wipe out pollutant surface. Or use acrylic adhesive which can penetrate the pollution layer and form better bonding.

**PC key三大類型：背面噴塗 key / PC key type: Back-printing ink key**



**問題點 Problem**

印刷塗料的強度，會影響整體P+R的強度，印刷油墨強度不足，會使油墨層被組裝膠材剝離

Ink's bonding strength will influence the performance of adhesive.

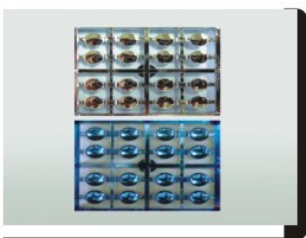
Normally ink-coating layer will be peeled by adhesive.

**解決方式 Solution**

檢討印刷油墨的問題，改用耐化型PU/壓克力油墨，並提升油墨接著強度

Use PU or acrylic type ink which has better chemical resistance

**PC key三大類型：PC 電鍍 key / PC key type : PC sputtering**



**問題點 Problem**

雙面鍍鎳，完全無法黏接，PC key背面做防鍍處理，才能完全解決接著問題

Double side sputtering forms hard-bonding surface. Chemical pre-treatment for one side sputtering is required.

檢討印刷油墨的問題，改用耐化型 PU/壓克力油墨，並提升油墨接著強度

**解決方式 Solution**

用酒精或正己烷擦拭防鍍層，並選擇對PC用侵蝕力較強的壓克力系接著劑

Use ethanol or hexane with cloth to wipe out chemical pollutant. Select adhesive that can penetrate PC surface and form better bonding.

**拉力測試 Tensile test**

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正向拉拔力超過2kg以上

Tensile strength over 2 kgs

**測試方式 Test method**

上夾具夾住key，下夾具夾住Rubber/TPU，用5mm/min拉速測試破裂強度

Tensile rate at 5 mm/min between key and Rubber/TPU



## 高溫高濕測試 Humidity test



### 高溫高濕

85°C 85%RH 48小時

### Humidity test

85°C 85%RH 48 hours

## 溫度震盪測試 Thermal shock test



### 溫度震盪

-20°C~80°C 48 cycles

### Thermal shock

-20°C~80°C 48 cycles

## 防曬油/人工汗測試--Tanning oil / artificial sweat test

### 防曬油測試 Tanning oil test

高溫高濕加上防曬油/人工汗均勻塗佈於 key 表面及P+R接著面之間，再放入85°C 85%RH中48小時不掉key

Spraying tanning oil on the surface of keypad and put into the chamber of 85°C 85%RH for 48 hours

### 人工汗測試 Artificial sweat test

將乳酸，氯化鈉，蒸餾水配成溶液置入85°C 85%RH中48小時不掉key

Use lactic acid, sodium chloride and water solution to spray on the surface and put into the chamber of 85°C 85%RH for 48 hours



## P+R 膠材其他需求

### Other requirements for adhesive

#### 外觀測試 Appearance

上述環測後沒有黃化現象，並在環測後維持拉力2kg以上

No yellowing after thermal tests. The bonding strength is still above 2 kgs.

#### 印刷性能 Screen printing performance

於200目印刷機台上，可連續操作四小時以上

Consecutively printing for 4 hours on 200 mesh screen.

#### 點膠性能 Dispensing performance

不塞針頭，黏度約1000~3000 cps

Consecutive dispensing without needle-stuck.

#### 氣味低，無毒

Low odor, non toxic.

#### 符合歐盟RoHS規範

Satisfy RoHS green-partner's regulations.

(Pb, Cd, Hg, Cr6+, PBB, PBDE)

## P+R 認證膠材介紹 Adhesive for P+R

### 適用前處理製程 Physical treatment for rubber

火燄/Corona Flame or Corona

### 施膠方式 Dispensing method

點膠 Dispensing

### 黏度 Viscosity

1000 cps

### 可操作時間 Pot life

4小時 4 hours

### UV能量需求 UV Energy for curing

1500 mJ/cm<sup>2</sup>

### 可使用於 Suitable key form

- PC噴塗key PC hard-coating key
- PC油墨key PC ink-printing key
- PC電鍍key對 Silicon rubber的組裝 PC sputtering key to silicon rubber

### 膠材特色 Characters

- 低吸水性：Low water absorption  
80度水煮24小時<1.5%  
After 80 °C 24 hours, <1.5%
- 操作時間長: Long pot life  
混合後可操作時間至少四小時  
More than 4 hours after mixing
- 免噴Primer：No primer needs  
UV硬化冷卻後即可材破  
Rubber fails after UV exposure.
- 通過高溫高濕85/85 48 hr及-20/80  
48 cycle加上防曬油/人工汗測試  
Pass thermal cycle (-20/80 48 cycles)  
and humidity test (85/85 48 hours) with  
tanning oil and artificial sweat.
- 通過SGS認證 Pass SGS certificate.

## 按鍵組裝完整解決方案 Total solutions for keypad

- FG0901A/B: P+R泛用型，反應速度快，點膠 / 印刷  
FG0901A/B: General purpose, fast curing, for dispensing or screen-printing.
- FP4271A/B: 加強對PC接著，反應速度快，點膠  
FP4271A/B: Intensify PC bonding, fast curing, for dispensing.
- FP4274: 單組份，反應速度慢，網版印刷用  
FP4274: One component, slow curing, for screen printing
- FP42744: 單組份，反應速度快，點膠  
FP42744: One component, fast curing, for dispensing.

- FT1954: Rubber 改質用 Primer  
FT1954: Primer for silicon rubber
- FP161: TPU/PC用UV  
FP161: TPU/PC bonding UV
- FP1871: TPU/PC用UV  
FP1871: TPU/PC bonding UV.
- FZ012: TPU/PC/Stainless對LIMS co-mold用Primer  
FZ012: Co-mold primer for LIMS with TPU/PC/Stainless

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