

## 模塑互连器件电镀工艺

## Moulded Interconnect Device (MID) Plating Process



## 用于雷射直接成型

## For Laser Direct Structuring (LDS) Process

1

- 亲水剂 Conditioning
- **POP™** PC-300 亲水剂 Conditioner

2

- 化学沉铜(打底铜) Electroless Copper (Copper Strike)
- **CU-PPC** 46/47 化学沉铜 Electroless Copper Plating Process

3

- 低温高速化学沉铜 Low Temperature High Speed Electroless Copper
- **POP-PLUS MIDs** PPC-490 低温高速化学沉铜 Low Temperature High Speed Electroless Copper Plating Process

4

- 微蚀 Micro-Etching
- **POP-PLUS MIDs** AD-440 铜表面微蚀 Micro-Etching Process on Copper

5

- 活化剂 Activating
- **POP-PLUS MIDs** AD-453 铜上化学镀镍前活化剂 Pre-electroless Nickel Activator

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- 化学沉镍 Electroless Nickel
- **POP-PLUS MIDs** ENCHEM L-560/590 化学镍 Electroless Nickel

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- 化学浸金 Immersion Gold
- **AUOLLY-I** 化学浸金 Immersion Gold Plating Process

完  
END

## 用于双色射出成型

## For Two-Shot Injection (TSI) Process

1

- 亲水剂 Conditioning
- **POP™** PC-300 亲水剂 Conditioner

2

- 膨胀剂 Sweller
- **POP™** PC-320/ PC-305 膨胀剂 Sweller

3

- 化学粗化/湿润 Etching/Wetting
- **POP™** PC-310/PC-311 粗化/湿润剂 Etcher/Wetter

4

- 中和剂 Neutralizing
- **POP™** PC-350 中和剂 Neutralizer

5

- 敏化 Sensization
- **POP™** PC-420 敏化剂 Sensitizer

6

- 活化 Activating
- **POP™** PC-480 活化剂 Activator

7

- 加速 Accelerator
- **POP™** PC-370 / 375 加速剂 Accelerator

8

- 化学沉铜(打底铜) Electroless Copper (Copper Strike)
- **CU-PPC** 46/47 化学沉铜 Electroless Copper Plating Process

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- **POP-PLUS MIDs** PPC-490 低温高速化学沉铜 Low Temperature High Speed Electroless Copper Plating Process

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- **POP-PLUS MIDs** AD-453 铜上化学镀镍前活化剂 Pre-electroless Nickel Activator

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- **POP-PLUS MIDs** ENCHEM L-560/590 化学镍 Electroless Nickel

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完

END

•注: 以上流程适用于无加入催化触媒的塑料如ABS/PC及SPS/PPS。在加入了催化触媒的情况下, 则可省去步骤2至7。

•Remarks:the above process is suitable for materials e.g. ABS/ PC and SPS/PPS etc. with no catalystris added. In case catalyst is added, step 2-7 could be omitted.

## 前处理系列 Pre-Treatment Series POP™

### POP™ PC-300 亲水剂 Conditioner

POP PC-300 适用于塑料制品之亲水除污工序。此添加剂无烟无味，不需抽风；操作范围宽广，不易伤害基体；对水质硬度的容忍度高；可被生物降解，有利废水处理。

- Hydrophilic and remove impurities effectively
- No odor & smoke; ventilation is not required
- Mild; no harm to substrates; wide working range
- Decomposed by organic substances; simple for waste water treatment

### POP™ PC-320/ PC-305 膨胀剂 Sweller

POP PC-320 膨胀剂是用于 ABS/PC 或 PC 塑料制品的镀前表面处理，便于粗化，为随后之镀层提供良好之结合能力。

- Improve the adhesion power of PC or PC+ ABS material
- Ideal for plastic plating such as automobile industry, computer and top grade sanitary ware.

### POP™ PC-310 粗化剂 Etcher

POP PC-310 适用于塑料电镀中之铬酸、硫酸粗化液，能使塑料如 ABS/PC 和 PPS/SPS 的活化沉钼活性提高，镀铜与塑料间更易起化学反应，效果更佳。此添加剂可用于传统化学电镀，也可在低浓度钼离子条件下进行铜置换工艺，基于简化处理步骤极大地简化处理顺序。专门针对 ABS/PC 混合基体电解金属化，它能有效改良活化液中钼离子的吸附活性，大大提高生产力，从而降低生产成本。

- Conditioner used to alter the plastic surface to obtain true adhesion of plating on plastic
- Reduce the possibility of skip-plating

### POP™ PC-311 粗化湿润剂 Wetter

POP PC-311 粗化湿润剂是用于降低微蚀槽液内之表面张力，能均匀微蚀塑料表面，并且促进溶液快速脱离工件。PC-311 粗化湿润剂可用于铬酸-硫酸微蚀槽上之塑料工件，并适用于挂镀和滚镀之应用。

- Reduces liquid surface tension in micro-etching process
- Micro-etches the plastic surface uniformly and helps separate solution and workpieces promptly
- Could be applied to chromic acid – sulfuric acid etching tank
- Suitable for both rack and barrel plating

### POP™ PC-350 中和剂 Neutralizer

POP PC-350 用于塑料电镀粗化之后，可以中和粗化残留液，防止带入之后工序中，造成污染。

- Neutralized the reduction this cannot contaminate the post-treatment solution



## 前处理系列 Pre-Treatment Series POP™

### POP™ PC-420 敏化剂

POP PC-420 是一种新的稀酸性预浸液，用在 PC-480 活化工艺之前，以它来代替穿孔电镀工艺中常用的腐蚀性盐酸。该溶液的特点是采用液体开缸剂，固体添加剂，维护方便，酸含量低。

- A new diluted-acid predipping solution which is to replace the corrosive hydrochloric acid which is commonly used for perforated electroplating
- Easy for maintenance and with low content of acid

### POP™ PC-480 活化剂 Activator

POP PC-480 是锡钯复合体，在经粗化后的塑料表面沉钯。

- A tin-palladium catalyst solution which catalyses the ABS plastic surface to influence the metal deposition from subsequent copper or nickel bath.

### POP™ PC-370 / 375 加速剂 Accelerator

POP PC-370 / 375 用于塑料电镀中钯水沉积过程后。此溶液不含腐蚀性，使用安全；操控范围广阔，使用周期特长，并可节省钯水用量达三分之一。

- Specialized surfactant used after palladium depositing on plastic plating process
- Reduced more than 30% of palladium usage in the reductive process
- Durable, wide operation range
- Corrosive free

## 化学沉铜 Electroless Copper Plating CU-PPC or POP-PLUS MIDs



### CU-PPC 46/ 47 化学沉铜工艺(打底铜) Electroless Copper Plating Process (Copper Strike)

PPC-46/ 47 是一种高温定性，室温操作的化学镀铜溶液。它呈光亮粉红色并且易于检查通孔状况。此镀液具有广宽的操作范围，覆盖度好。在镀液活性成份达最低限时，镀层厚度仍可达 0.25 – 1.5 $\mu$ m。

- Operates under room temperature
- In bright pink color, easy to examine microvia drilling status
- Wide operation range
- Excellent coverage
- Deposit thickness reaches 0.25 – 1.5 $\mu$ m even solution activity at its minimum level

## 化学沉铜 Electroless Copper Plating CU-PPC or POP-PLUS MIDs

### POP-PLUS MIDs PPC-490 低温高速化学沉铜工艺 Low Temperature High Speed Electroless Copper Plating Process

POP-PLUS MIDs PPC-490 是专用于塑料电磁屏蔽产品上的化学沉铜工艺，因拥有不同的沉积速率，所以亦适用于装饰电镀。其镀层结晶细密，附着力好，并呈光亮粉红色。此工艺稳定性佳不会在槽壁上镀出。

- Specialized for plastic electromagnetic shielding workpieces; also suitable for decorative plating
- Provides different deposition rate
- Forms fine and shiny pink deposit
- Excellent adhesion; high stability in operation

## 微蚀 Micro-Etching Series POP-PLUS MIDs

### POP-PLUS MIDs AD-440 铜表面微蚀工艺 Copper Micro-etching Process

POP-PLUS MIDs AD-440 是一种粉状材料，与水及硫酸混合后会产生一种非络合微粗化的工作液，适用于铜或铜合金。AD-440 可以在铜表面产生一层光亮、清洁及均匀的粗化效果。其微蚀深度及产生的焊接能力好。

- In powder form; forms a non-complexing etching working solution after mixing with water and sulfuric acid
- Suitable for copper and copper alloy etching
- Provides bright, clean and even etching on copper surface
- Excelling micro-etching depth and welding ability on tin-lead solder

## 化学镀镍 Electroless Nickel Plating POP-PLUS MIDs

### POP-PLUS MIDs AD-453 铜上化学镀镍前活化剂 Pre-electroless Nickel Plating activating Process

POP-PLUS MIDs AD-453 是一种以浓缩液体形式供应的酸性活化剂，用于化学镀镍前以处理非催化的铜表面。它会在铜表面沉积一层金属薄膜，当随后进行化学镀镍时，便可得到一层致密、结合力好、结晶细致的沉积层。

- An acid activator, to be used on non-catalyzed copper surface before electroless nickel plating
- Forms a thin layer of deposit which helps form a fine and well-adhesive deposit

## 化学镀镍 Electroless Nickel Plating POP-PLUS MIDs

### POP-PLUS MIDs ENCHEM L-560/590 化学镍工艺

#### Electroless Nickel Plating Process

POP-PLUS MIDs ENCHEM L-560/590 是为在塑料上电镀而设计的低磷化学镍工艺。它在 EMI/RFI 屏蔽应用方面的化学镀铜基体上镀出一层均匀镍磷合金。它能防止铜层氧化并可提供最佳屏蔽效能。

- Designed for plastic plating
- Forms an even nickel-phosphorous alloy on electroless copper plating for the EMI/ RFI shielding
- Anti-oxidization, provides best results in shielding



## 化学浸金 Immersion Gold AUOLLY-I

### AUOLLY-I 化学浸镀金电镀工艺 Immersion Gold Process

AUOLLY-I 浸镀金工艺在镍磷合金镀层上沉积一薄层 24K 浸镀金层，所得镀层平滑结晶细致。

- Forms a thin layer of 24K immersion gold on nickel-phosphorous alloy
- Forms fine and even deposit



# Know How, Can Do.



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