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UV Curable Inkjet Partial Au Plating Ink

IJR-3000 TR208017

1. FEATURES

IJR-3000 BE100 is UV curable Inkjet ink with etchant & plating resistance, and applied to Piezo drop-on-demand (DOD) print head.

- Jet stability & low nozzle failure.
- Good settling stability.
- Fast curing and low energy requirement(usable UV LED system ; 360~420nm)
- Good electroless nickel and gold plating.
- Excellent hardness and strip property.
- RoHS approved & Low-halogen contents(Halogen-free)

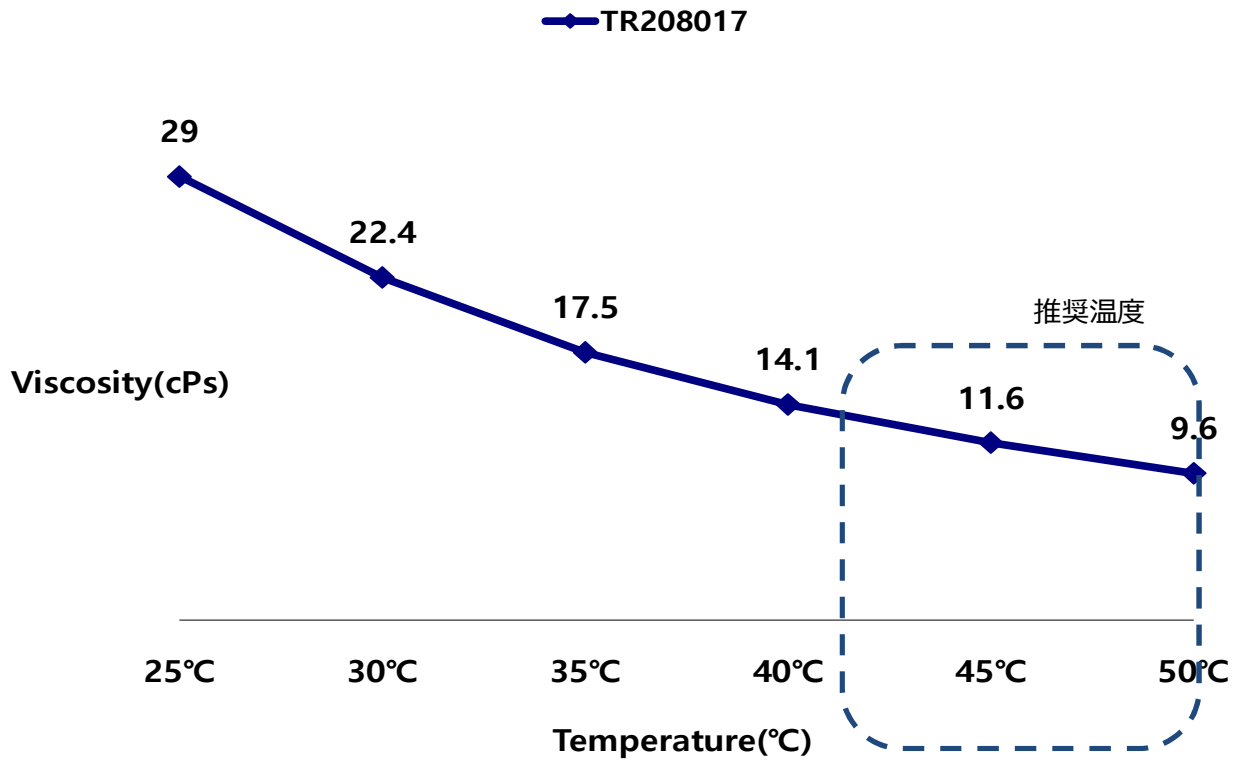
1) Specification

Main Agent	IJR-3000 TR208017
Color	Black
Viscosity	8.0~14.0 cPs (Cone-plate type, 5rpm,50°C)
Specific Gravity	1.1 ± 0.1 g/cm ³
Surface tension	40.5~42.5 mN/m at 20~25°C
Shelf- Life	5 months after manufacturing (Stored in dark place at 10~25 °C)

✓ The viscosity above is the basic recommended viscosity, and the viscosity can be controlled depending on customer's environment.

✓ Appropriate work temperature is 20-25 °C

Viscosity Curve



2) Lot number Sign

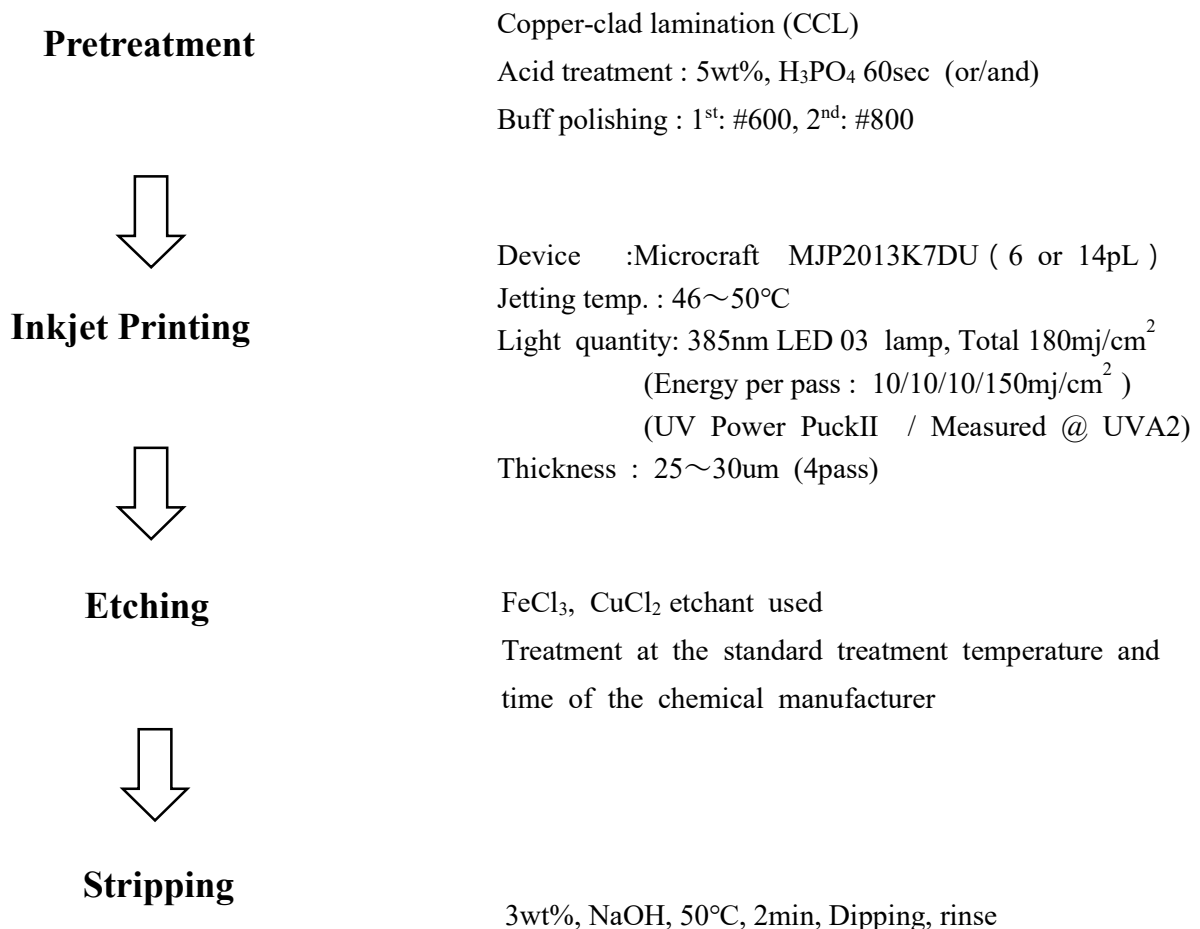
Lot No.	2020	10	13	2	01
Explanation	Year	Month	Day	Divide	Number

2. PROCESS

Ensure proper maintenance and management of the following recommended processes:

Changes in processes other than the recommendation process leads to the causes of poor quality and reliability.

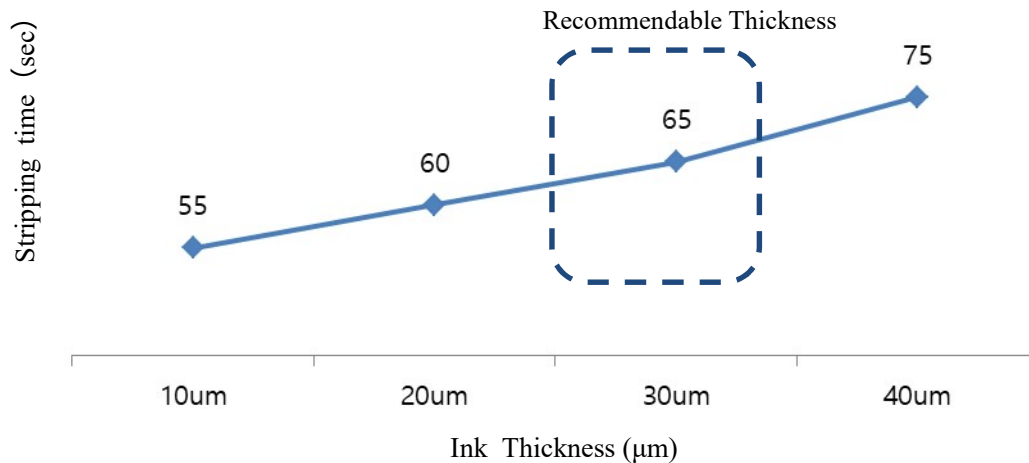
1) Process and condition (Example of Cu etching by subtractive process)



Attention !

- ✓ For non-copper metal (Al, SUS) etching, please contact us.
- ✓ If etching resistance is insufficient, UV bump treatment (500-1000 mj/cm², high pressure mercury lamp) before etching

2) Stripping time of Standard Process (On Copper)



3) Attention on Process

- (1) Keep the operation room cleaned. The product must be protected from dust.
- (2) The contamination of substrates has an influence on the quality and reliability deterioration.
- (3) Keep the operating condition at 20~25°C / 50~ 60%RH.
- (4) Avoid direct UV and sunlight exposure. Use ink under the condition without UV light sources.
- (5) Open up the package when it becomes the ambient temperature. Stir well before use.
- (6) Appropriate coating thickness is 20~40 µm.
- (7) In general, thick film thicknesses cured with insufficient UV energy give rise to reduce etchant resistance. And with increasing of its thickness, stripping time is increased. On the other hand, in case of thin thickness, film cured may lack the resistance for etching solution.
- (8) Curing condition is variable depending on the lamp type, wavelength range and its intensity. Curing condition out of recommendable parameters causes deteriorate the properties of resist coating.
- (9) As for cleaning of ink jet head, specified esters can be only used.

3. PROPERTIES

- General Properties

Item	Test method	Test standard	Test Result
Pencil Hardness	Above 2H on the glass (ASTM D-3363)	The glass must not be seen	Pass (above H)
Adhesion	Cross Cut 10×10 Tape Test	Must remain 100/100	Pass
Appearance /color	Visual Inspection	Identical with past Lot.	Pass
Acid resistance	20 wt.% HNO ₃ 45~55°C, 2min dipping and rinse	Ink not peeled off	Pass
Strip property	3wt% NaOH, 50°C, 5min dipping or 3wt% KOH, 50°C, 5min dipping	No residue	Pass

* Note : The above- mentioned test result is based on our test condition.

4. TROUBLE SHOOTING

No.	Problems	Action	Note
1	Spreading of the ink	<ul style="list-style-type: none"> - Temperature of substrate - Exposure energy - Viscosity of ink - Room Temperature 	
2	Poor drawing off	<ul style="list-style-type: none"> - Examination of the jetting condition - Viscosity & flowing of ink - Head Temperature - Nozzle condition 	
3	Pin hole and etc.	<ul style="list-style-type: none"> - Viscosity & flowing of ink - Low resolution - Temperature on substrate - Condition of pre-treatment(Cleaning) 	
4	Poor adhesion	<ul style="list-style-type: none"> - Thick coating thickness - Insufficient UV Energy - Contamination of substrate 	
5	Poor pencil hardness	<ul style="list-style-type: none"> - Thick coating thickness - Insufficient UV Energy - Contamination of substrate 	
6	Poor stripping	<ul style="list-style-type: none"> - Thick coating thickness - Overload UV energy - Condition of pre-treatment(Cleaning) 	

- ✓ Contact sales department or R&D institute of TAIYO INK MFG. CO., (KOREA) LTD for more information.

5. CAUTION FOR SAFETY

- Before use, read caution for safety and use exactly.
- The Caution for safety is to prevent danger or damage beforehand in using the product.
- Make the workers to know the caution for safety in catalog.



WARNING

- * Use a suitable conveyance tool at transfer of heavy thing. When convey by oneself, take right posture. Excessive force may cause injury and lumbago.
- * When use, put protection mask, goggle and protection gloves etc. Injury can happen by inhalation and contact in a long or short time.
- * Install local exhauster in operation room. While using, the case which long time or excess amount will inhale the fume it is nauseous, vomit, dizzy and the internal organs damage etc. will be able to occur.
- * After using, annul the empty receptacle without another application.
- * Dispose of the waste according to related law. It can cause serious environmental pollution that incinerate or abandon the waste in land and water.

CAUTION AT USE

- * Do not use the product when it is expired.
Once the expiration date is past, it should be exchanged with a new one; otherwise pigments of this ink settle to the bottom faster and it becomes sticky and hard. The sedimentation and agglomeration can cause major systemic problems.
- * Avoid direct sunlight, fire, and any other heat sources.
This product is very sensitive to light.
Even short exposure to light can adversely affect the proper functioning of this ink.
Keep this product in dark and cool temperature.
- * Necessarily, keep the optimum temperature(10~25°C). Use the inks 1day after leaving alone at recommendation temperature to intercept the inflow of water and make the state stable.
- * Reactive metals which can promote free radical reactions, such as unlined carbon steel, copper alloys, brass and bronze should not be used as materials of construction in direct contact with acrylates.

Misapplication different from above contents results in quality deterioration