

## GP1-3N

READY TO USE GOLD PEN PLATING SOLUTION 1G/100ML GOLD 3N COLOR

### DESCRIPTION

GP1-3N is a yellow gold pen plating solution which deposits a brilliant 3N gold color to the surface applied. 3N can be described as a rich yellow with green undertones and considered to match 14 kt yellow gold plating in most international markets. It is a perfect solution to for two-tone plating applications where a rich gold color is required. It can also be used to highlight specific details or cover solder joints on 3N gold colored or 14 kt gold items. This yellow gold pen plating solution is nickel, lead, and cadmium free.

- Gold pen plating solution
- 3N or 14 kt yellow gold color
- Great for two-tone plating applications
- Good color repeatability
- Used to cover solder joints
- Nickel, lead, and cadmium free

### DEPOSIT DATA

Hardness [HV 0.01]	90 - 100
Density [g/cm <sup>3</sup> ]	19.6
Thickness from-to [μm]	0,05 - 0,1
Aspect	Shiny
Color	Yellow 3N

### PRODUCT FORM

Metal concentration	1 g Au/100 ml
Product pH	Alkaline
Format of the solution	Ready to use liquid
Plating solution color	Colorless which gradually turns blueish
Storage time	1 year
Volume	100 ml

### PRODUCT USAGE

### RANGE

### OPTIMAL

Voltage [V]	See "Supplementary Information" section	
pH	8 - 10	8
Working temperature [°C]	20 - 30	25

**METAL CONCENTRATION**

METAL	OPTIMAL
Au	1 g Au/100 ml

**COLOR COORDINATES**

L *	87.8
a*	4.2
b*	26.4
c*	26.7

**Note:** Color coordinates here reported have been measured on a white underlayer and they are to be intended as PURELYINDICATIVE being strongly dependent on underlayer color, on thickness of the deposit and on specific design(shape)of the surface.

**USER GUIDE****READY TO USE SOLUTION PREPARATION**

GP1-3N is a ready-to-use pen plating solution at the concentration of 1g/100 ml. No preparation is required. It is important to check, once the product has been received, the integrity of its packaging.

**EQUIPMENT AND TOOLS**

In order to maximize the quality deposition for gold obtained with GP 1-3N it is advisable to use the pen plating machine: PENPLATSYS connected with its anodic output with PENPLAT pen provided with platinum based collar (please, refer to its specific manual of use). About fel tips, it will be possible to use of different types: standard or thin tips as well as white or brown ones. Those brown are generally faster in deposition than white; while the latter are giving less probability of burnt or dark layers due to prolonged contact times between tips taking plating solution and surfaces to be decorated.

**PLATING SOLUTION MAINTENANCE**

Use the gold pen plating solution until it is completely exhausted, without the additions of any replenisher-additives.

**PRETREATMENTS**

Work items designated to undergo a pen plating operation, must go through the same cleaning procedures as recommended for standard bath plating operations. GP1-3N can be deposited directly onto silver, palladium, gold, nickel, and its alloys. An intermediated deposit or precious metal plating strike is necessary before depositing onto other metals (i.e. Copper and copper alloys). As pre-treatment it is suggested to run a preliminary degreasing through a cycle of ultrasonic degreasing treatment-solution followed by a wash step into running water. Then proceed with the electrolytic degreasing step by using the alkaline degreasing solution SGR1. Once the items have been washed again in demineralized water, then proceed in activate and neutralize the surface of the same by dipping them into the slightly acidic solution NEUT1 for 3 – 4 times subsequently at room temperature, in order to be sure that no any alkaline residues coming from the degreasing previous steps are dragged into the pen plating solution (which would lead to a reduction of its life). After the neutralization, wash them in demineralized running water and finally keep the items immersed into a D.I. water filled - Becker or small tank until they will not be treated by rhodium pen application. Once they are ready to be pen plated, withdraw them from the D.I. water temporary tank by the using of a suitable tweezer.

**POST TREATMENTS**

Electrolyte should be removed from the surface as quick as possible. Rinse off the bath rests in a recovery rinse (still rinse). Rinse the parts in running water and dry.

**SUPPLEMENTARY INFORMATION**

About the voltage to be set: the best voltage for using GP1-3N is to be chosen upon the kind of tip used on the pen:

- White tips: 8 -10 V
- Brown tips: 7 - 9 V
- PENGRAF: 3 - 5 V

About the temperature: work at room temperature, in the range of 20 - 30°C.

About the color of the solution: the color of the solution is initially transparent but during time it tends to switch gradually to pale green until blueish tones as the cyanide degradants. For this reason, it is advisable to use it in a short time and in any case without the expiry date reported on product label.

**SAFETY INFORMATION**

Being an alkaline solution, the electrolyte is corrosive therefore is an irritant to the skin, eyes and mucous membranes. Caution should be exercised when using the product, avoiding contact with the eyes and skin. Use gloves and safety goggles. Keep away from acidic chemicals. For further information please refer to the relative MSDS.

**DISCLAIMER**

All recommendations and suggestions in this bulletin concerning the use of our products are based upon tests and data believed to be reliable. Since the actual use by others is beyond our control, no guarantee expressed or implied, is made by Legor Group, its subsidiaries or distributors, as to the effects of such use or results to be obtained, nor is any information to be construed as a recommendation to infringe any patent.