TECHNICAL SHEET

GT4A2N

2N YELLOW GOLD MICRON SOLUTION FOR BATH PLATING 4 G/L (READY-TO-USE)

GENERAL INFORMATION

GT4A2N is a mildly acidic gold plating electrolyte that deposits a color which precisely corresponds to the normalized NIHS standard 2N-18 gold. 2N-18 can be described as a pale yellow color in 18 kt. The additional metals which are co-deposited with the gold as an alloy allow for an achievable thickness of 3 micron in a deposit which remains 99.7% gold by weight. The wider range of obtainable thicknesses combined with the ability to solder the plating deposit, allow for this electrolyte to be used in both technical and decorative applications.

Product form	
Metal concentration	4 g/l (Au)
Solution form	Liquid
Plating solution color	Green
Storage time	2 years
Volume	1 liter
Deposit data	
Solution appearance	Shiny
Hardness [HV 0.01]	155-220
Density [g/cm³]	17.0
Plating solution color	2N Gold Yellow
Thickness range [µm]	0,5

Operating data	**RANGE**	**OPTIMAL**
pH	3,2 - 4,2	3.5
Voltage [V]	2,8 - 4,0	3.2
Current density [A/dm²]	2 - 6	4.0
Working temperature [°C]	40 - 50	45
Cathode efficiency [mg/Amin]	20 - 35	
Anode type	Titanium platinized or mixed oxides	
Agitation	Moderate	

Color coordinates	
L*	84.0
a*	2.5
b*	27.6
c*	31.2

Metal concentration (g/l)	**Range**	**Optimal**
Gold (Au)	2.0 - 4.0	4.0
Nickel (Ni)	2.0 - 3.0	2.5
Indium (In)	1.0 - 2.0	1.5

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PREPARATION

GT4A2N is a ready-to-use plating bath at the concentration of 4 g/l of gold. No preparation is required.

EQUIPMENT

Working vessel materials: Pyrex glass / PVC / polypropylenePower supply: DC current rectifier with low residual AC (<5%)Heating elementAnode type: Platinized titanium [1.5-2.5 µm] or stainless steelFor larger bath volumes: Magnetic driven filter pumps with 5-15 µm cartridge (before use, boil and wash the cartridges with demineralized water for 3 hours to prevent organic contamination)Amp/min counter

PRE TREATMENT

GT4A2N can be deposited directly onto Palladium, Nickel, and precious metal substrates. An intermediate deposit of Palladium or Nickle is required over Silver, and all alloys containing copper to prevent copper migration. An intermediate deposit or precious metal plating strike is necessary before depositing onto Tin, Lead, Zinc, Cadmium, Aluminum and Iron.

POST TREATMENT

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 circulating deionized water and dry.

WATER PURITY

To prevent contamination of the bath both during its preparation and any replenishing operations, use demineralized water with a conductivity of less than 3µS/cm (containing no traces of organic compounds, Chlorine, Silicon, or Boron).

BATH MAINTENANCE

This process is easy to maintain, but will initially requires frequent analytical controls in order to obtain a correct concentration level of all the metals present. Metal concentrations greatly influence the final deposited color; therefore, an incorrect management of these parameters shall inevitably lead to unwanted colors. Gold additions. Gold plated from the bath must be reintegrated with high quality, stable in acid electrolytes, Potassium Gold cyanide at 68,3% concentration (Code: AUS683). The gold metal concentration shall not be lower than 75% of the nominal value, therefore the quality of additions shall be decided on the basis of the bath volume. Brighteners and other additives addition. With every gold addition it is necessary to add the brighteners and the other additives in order to obtain the desired color. When 100 g of fine gold is added (equal to 146.4 g of AUS683), the following additions are to performed:

- 100 ml of GT4INR 4 g/100 ml (Indium replenisher)
- 100 ml of GT4NIR 4 g/100 ml (Nickel replenisher)
- 100 ml of GTADR (complete organic part replesniher)

In case there should be an incorrect equilibrium of any of these additions, our Technical Customer Service shall advise the proper modifications or corrections.

SUPPLEMENTARY INFORMATION

GT4A2N gives excellent performance in a temperature range between 35°C and 45°C.

SAFETY INFORMATION

Being an acidic solution, the electrolyte 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 acid based 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 of 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.

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RELATED PRODUCTS LIST

Prodotto Complementari	
AUS683	Gold (I) potassium cyanide 68.3%

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