


GENERAL INFORMATION

Brown gold or otherwise known as Chocolate Gold is now obtainable through a plating deposition. GFBROWN-K gives jewelers and electroplating operators everywhere an alternative gold color option away from the standard yellow and red tones that are available today, granting more design options. Chocolate Gold is also an excellent way to highlight brown stones in a setting, bringing out the stones color with less contrast and giving more emphasis to the highlight color. GFBROWN-K is intended for decorative use therefore has been designed for flash plating permitting a deposition thickness of up to 0.2 micron. This brown gold plating solution is Nickel, Lead, and Cadmium free.

Product form

Metal concentration	0.35 g/l (Au)
Product's pH	Acidic
Solution form	Liquid
Solution form	Ready-to-use

Plating solution color

Storage time	2 years
Volume	1 liter

Deposit data

Purity (%)	85.0
Hardness [HV 0.01]	80-100
Density [g/cm ³]	17.0
Thickness range [µm]	0,1 - 0.2



Operating data	RANGE	OPTIMAL
pH	3.5-4.5	4.0
Solution density (°Bé)	12-16	14.0
Voltage [V]	3-5	3.5
Current density [A/dm ²]	1.5-3.0	2.0
Working temperature [°C]	60-70	65
Exposure time (sec)	20 - 60	45.0
Cathode efficiency [mg/Amin]	2-4	10.0
Anode-cathode ratio	2.5:1	2.5:1
Anode type	Platinized Titanium	
Agitation	Strong	

Metal concentration	METAL	RANGE (g/l)	OPTIMAL (g/l)
	Gold	0.3-0.5	0.4

Color coordinates

L*	77.1
a*	8.1
b*	22.3
c*	23.7

**PREPARATION**

GFBROWN-K is a ready-to-use plating bath at the concentration of 0.35 g/l of gold. No preparation is required while filling the working tank.

EQUIPMENT

Working vessel materials: Pyrex glass / PVC / polypropylene Power supply: DC current rectifier with low residual AC (<5%) Heating element Anode type: Platinized titanium [1.5-2.5 µm] or stainless steel

PRE TREATMENT

GFBROWN-K can be deposited directly onto Palladium, Nickel, and precious metal substrates. An intermediate deposit of Palladium or Nickel 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 based alloys.

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.

As this deposit is well passivated versus tarnishing **if a post treatment as protective e-coating on its top is required, the pieces plated with GFBROWN-K must be properly activate.**

In doing so **it will be necessary to run preliminarily a short anodic degreasing process for 5-7 seconds at 3 V** after that it will be possible the subsequent treatment.

WATER PURITY

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

BATH MAINTENANCE

For volumes up to 5-6 liters it is advisable to use **GFBROWN-K** without any replenisher and until its exhaustion.

For bigger tanks it is possible to maintain the electrolytic system by using the appropriate replenisher solution

GFBROWNKR1 (blue solution, sold in one liter bottle containing 10 replenisher units total) and **GFBROWNKR2**

(transparent solution, sold in one liter bottle containing 10 replenisher units total), with the following guideline:

Add every 300 Aminute (which is corresponding to a consumption of about 1 g of fine gold): **1.46 g of AUS683 salts** (gold potassium cyanide 68,3%) **together with 1 unit replenisher for both GFBROWNKR1 and GFBROWNKR2** which is equal to the addition of:

·100 ml of GFBROWNKR1;

·100 ml of GFBROWNKR2.

Anyway we here repeat that this is just a general guideline; as **a frequent chemical** analysis (by Atomic Absorption or ICP plasma or even chemical titrations) **of the plating solution is strongly suggested** in order to know exactly the real metal species concentration in the same system and run the replenishing operation in the most appropriate way.

SUPPLEMENTARY INFORMATION

When used at higher voltages the final layer will result in a deeper brown color. If the voltage is too high burning will occur. For the darkest color range achievable for the selected surface, it is advisable to find the maximum voltage applicable without burning.

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 cyanide based chemicals. For further information please refer to the relative MSDS.

DISCLAIMER

GFBROWN-K

BROWN GOLD FLASH SOLUTION FOR BATH PLATING (READY-TO-USE)



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