

## Technical data sheet and product guideline

# GFBROWN-K

Brown gold flash solution for bath plating (ready-to-use)



### Color coordinates



L	77.1
a	8.1
b	22.3
c	23.7

### Product form

Metal concentration	0.35 g/l (Au)
Form	Liquid
Material color	Blue
Storage time	2 years
Format	Ready to use
Chemical type	Acidic
Volume	1 liter

### Operating data

	Range	Optimal
Voltage (V)	3-5	3.5
Current density (A/dm <sup>2</sup> )	1.5-3.0	2
Working temperature (°C)	60-70	65
Exposure time (sec)	20-60	45
pH	3.5-4.5	4
Cathode efficiency (mg/Amin)	2-4	3,3
Solution density (Bé)	12-16	14
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	0.35

### Deposit data

Purity (%)	85
Hardness (HV 0,01)	80-100
Density (g/cm <sup>3</sup> )	17
Thickness (um)	0.1-0.2
Appearance	Shiny
Color	Brown

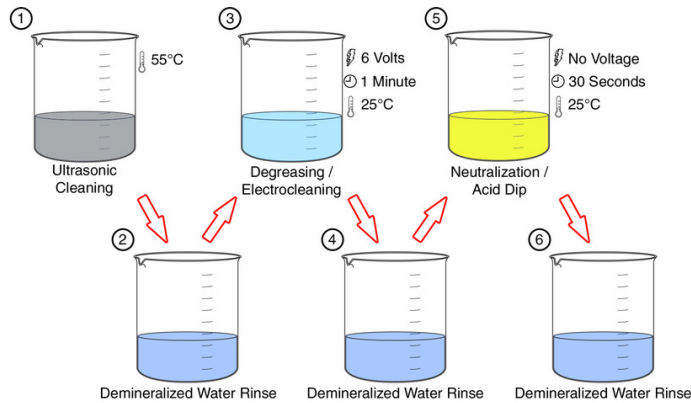
### Preparation

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 Cleansing procedure



### 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 3000 Amminute** (which is corresponding to a consumption of about 10 g of fine gold): **14.6 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.

### 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  $\mu\text{S}/\text{cm}$  (containing no traces of organic compounds, Chlorine, Silicon, or Boron).

**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.

**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.

**Disclaimer**

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**Related products**

<b>AUS683</b>	Gold replenisher in salt form
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**Packaging**

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