

# GFBROWN-K

## Technical chart

Last revision

12/11/2012

### READY TO USE GOLD FLASH PLATING BATH BROWN COLOR

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Colour **Brown**

[ L: 77,1 a: 8,1 b: 22,3 c: 23,7 ]

#### Product description

GFBROWN-K is an alkaline galvanic solution for decorative gold plating bath. The main features of this electrolyte are as follows:

- **Brown colour plating**
- **Easy to use**

#### Recommended applications

GFBROWN-K is a plating solution specifically designed for depositing a brown gold layer on precious metal surfaces. GFBROWN-K can be deposited directly on palladium and gold. On the contrary, an intermediate deposit of palladium or gold (at least 0.2 µm) is necessary before it can be used on copper, bronze, brass, silver or nickel. Finally, an intermediate specific treatment is required for plating on stainless steel with GFX1.

#### Deposit data

Layer caratage [K]	20-22
Density [g/cm <sup>3</sup> ]	17
Thickness [µm]	0,1-0,2
Appearance	Shiny

#### Operating data

	Range	Optimum
Voltage [V]	4.0 - 5.0	4.5
Current density [A/dm <sup>2</sup> ]	1.5 - 3	2
Operating temperature [°C]	60 - 70	65
Treatment time [s]	60 - 180	120
pH	3.8 - 4.5	4.0
Solution density [°Bé]	12.0 - 16.0	14
Anodes	Titanium-platinum	Titanium-platinum
Agitation	Moderate	Moderate
Anode/Catode surface ratio	2.5:1	2.5:1
Cathode efficiency [mg/Amin"]	8 - 14	10
Solution filtering	Suggested	Suggested
DC rectifiers	0-12V/0-10-30-100 A	

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#### Additional informations

##### Packaging

The product comes in a high-density polyethylene bottle.

**IMPORTANT: Once the package is opened the solution should be transferred to the container in which it is to be used; under no circumstances should the solution be stored inside its original packaging.**

##### Equipment

It is more practical to use Pyrex glass containers for quantities up to 5 litres, whereas for greater quantities it is best to install PTFE or polypropylene plants equipped with:

- A current rectifier with an ammeter and voltmeter, with low residual AC «5%».
- Amp/min counter.
- Platinum-coated titanium anodes, coated with 2.5 µm of platinum or stainless steel AISI 316.
- Magnetic drive filter pumps with 5-15 µm cartridge.

**Note:** Before use boiling and washing of the cartridges with demineralized water is recommended to prevent organic contamination.

##### Demineralized water

To prevent contamination of the bath, both during its preparation and in any subsequent topping up operations, use demineralized water with a conductivity of less than 3 µS/cm (containing no traces of any organic compounds, Silicon or Boron). To achieve maximum deposit quality we recommend using our high-grade purity WATER.

##### Correct working sequence

- Ultrasonic degreasing (60°C) using SGR2USP
- Recovery/rinsing with tap water
- Electrolytic degreasing using SGR1 or SGR1P
- Recovery/rinsing with tap water
- Rinsing in demineralized water
- Neutralization using NEUT1 or NEUT-SA
- Rinsing in demineralized water
- **GFBROWN-K (following the correct operating conditions)**
- Recovery/rinsing with tap water
- Rinsing in demineralized water
- Drying (steam is not advised)

##### Agitation of the solution and/or pieces

For maximum performance, particularly in terms of colour, do not use excessively vigorous agitations. So, for processing tanks containing considerably large volumes, agitation of the solution using a magnetic drive filter pump of not too high a capacity is recommended, while for containers of modest size moderate agitation of the pieces is adequate.

##### Temperature

Best performances are obtained at 60-70°C working temperature.

##### Galvanic bath maintainance

Use the product until its exhaustion

##### Safety Information

GFBROWN-K is an alkaline chemical solution, non-corrosive and non-toxic. Anyway, being a chemical compound, caution should be exercised when using the product, avoiding contact with the eyes and skin. Use gloves and eye protections. For further information please refer to the relative safety datasheets.

<u>Bath plating solutions</u>	<u>Code</u>
Ready-to-use brown plating bath	GFBROWN-K