

### Neutral Gold Baths Composition

Component	Matte Finish	Bright Finish
	g/l	g/l
Gold metal	4-16	2-10
Potassium phosphate	0-90	0-90
Chelates	15-90	50-150
Brighteners	0	0.1-30

#### SLIDE 25

Neutral gold baths will vary in composition so that mat or bright finishes may be obtained. Mat or matte refers to dull deposits.

All components except the gold salts and brighteners should be dissolved and purified (by carbon treatment) before the gold and brighteners are added.

There is no free cyanide present in neutral baths because this material would not be stable in the neutral pH range. Neutral baths readily permit alloy deposits because of the lack of cyanide which retards alloy deposition. There is little or no attack on plastic or ceramic substrates and waste disposal problems are minimized when these baths are used.

The chelating agents play a very special role in neutral gold baths; they retard the deposition of metallic impurities that may be present in the bath; they also permit the slow release of metallic brighteners for electrodeposition with the gold. This is extremely important when gold alloy deposits of specific composition are required. The brighteners, which may be organic or metallic compounds, are used to maintain a uniform gold crystal growth so that the final electrodeposit has the same surface finish as the basis metal upon which it is plated. Metallic brighteners will also reduce the percentage of gold in the electrodeposit and increase the hardness of the deposited gold. All brighteners reduce electrodeposit density.