Claims

1. A modified cyanide-free gold plating solution, characterized in that, the modified cyanide-free gold plating solution comprises an auric sulfite salt, an organic phosphonate salt, a hydrophosphate mixed salt, an alkali metal sulfite salt, an antimonic salt, a selenium salt and a complexing agent, an organic polyamine based compound, and a polyether based compound; wherein

the concentration of the organic polyamine based compound is 1-5g/L, and the concentration of the polyether based compound is 0.01-0.05g/L.

2. The modified cyanide-free gold plating solution according to claim 1, wherein, the concentration of the auric sulfite salt is 17-21g/L, the concentration of the organic phosphonate salt is 10-30g/L, the concentration of the hydrophosphate mixed salt is 30-150g/L, the concentration of the alkali metal sulfite salt is 30-120g/L, the total concentration of the antimonic salt and the selenium salt is 0.01-2g/L, the concentration of the complexing agent is 0.01-5g/L; preferably

the concentration of the auric sulfite salt is 18-20g/L, the concentration of the organic phosphonate salt is 15-30g/L, the concentration of the hydrophosphate mixed salt is 40-120g/L, the concentration of the alkali metal sulfite salt is 40-100g/L, the total concentration of the antimonic salt and the selenium salt is 0.5-1.5g/L, the concentration of the complexing agent is 2-5g/L, the concentration of the organic polyamine based compound is 1-3g/L, and the concentration of the polyether based compound is 0.01-0.03g/L.

3. The modified cyanide-free gold plating solution according to claim 1 or 2, wherein, the auric sulfite salt is auric potassium sulfite and/or auric sodium sulfite, the organic phosphonate salt is potassium hydroxy ethylidene diphosphonate and/or sodium hydroxy ethylidene diphosphonate; the hydrophosphate mixed salt is a mixture of dipotassium hydrogen phosphate and potassium dihydrogen phosphate and/or a mixture of disodium hydrogen phosphate and sodium dihydrogen phosphate; the alkali metal sulfite salt is potassium sulfite and/or sodium sulfite; preferably

the hydrophosphate mixed salt is monohydric phosphate and dihydric phosphate; more preferably

the weight ratio of the monohydric phosphate to the dihydric phosphate is 0.8-1.2:2.