

TECHNICAL DATA SHEET

SPECTEK 733 BRIGHT NICKEL PROCESS

Spectek 733 is proven and balanced system for deposition of brilliant, haze - free, nickel deposits with high degree of leveling and ductility.

The process offers outstanding performance over a very wide range of operating bath concentration, temperature and current densities

SALIENT FEATURES:

- An unmatched combination of high plating performance and high production reliability over a wide range of operating concentrations and temperatures.
- Outstanding leveling and deposits brilliance particularly in low current density areas.
- Excellent deposit ductility and Gold & chrome receptivity and hence widely used for plating jewellery and novelty parts.
- Outstanding tolerance to the process variation, impurities and excess brightener additions.

SOLUTION COMPOSITION:

	OPTIMUM	RANGE
Bright nickel salt	400 g/l	350-450 g/l
Nickel Additive 722	12 cc/l	10-15 cc/l
Spectek 733	0.4 cc/l	0.5-1.0 cc/l
Antipit 10 (optional)	0.5 cc/l	0.2-0.8 cc/l

OPERATING CONDITIONS:

	OPTIMUM	RANGE
Cathode current density	4.0 A/dm ²	2.0-8.0 A/dm ²
Anode current density	2.0 A/dm ²	1.0-3.0 A/dm ²
Temperature	55°C	55-60°C
pH	4.6	4.0-4.8
Density	24° Be.	20-28°Be
Agitation	Cathode movement	Air
Filtration	Continuous	

SOLUTION PREPARATION:

A fresh nickel plating bath is prepared as follows:

- Leach a rubber lined tank and filled with 5 % sulphuric acid (by volume) and 1 cc/lit Antipit 10 at 50-70° C and agitate the bath for some time. Leave it overnight and clean it with soft water next day.
- Fill the plating tank with 2/3rd of warm water and add required amount of Nickel Salt by stirring to dissolve completely.
- Make the level and adjust the pH to 2.5-3.5 with pure sulphuric acid (25% volume)
- Dummy the solution at 3 amps per sq.ft. for minimum of 12 hours. Remove the anodes and plate at low c.d.
- Pump the hot solution to the storage tank and add sufficient nickel carbonate and stir to raise the pH to 5-5.5 and add 2cc/1 (100 o volume)
 Hydrogen peroxide stir vigorously at 50-70°C for 2 hours.
- Add 2 grams per liter activated carbon and air agitable for some time and leave it over night.
- Filter the solution back into the clean plating tank without disturbing the layer of sludge on the bottom of tank.
- After addition of brightener and pH adjustments the bath is ready for plating.

MAINTENANCE & CONTROL:

Addition of Nickel Sulphate, Nickel chloride and boric acid should be done periodically by analysis and following parameters should be maintained:

Nickel Metal	60-80 g/l
Nickel Sulphate	225-300g/l
Chloride as Nickel chloride	70 g/l
Boric acid	40-45 g/l

The brightener, additives additions are normally based on degree of leveling, dragout losses, temperature, etc.

Recommended additions :

Spectek 733	125-200 CC/1000 ampere hours
Nickel Additive 722	150-250 CC/1000 ampere hours

EQUIPMENT:

Steel tank lined with PP, PVC can be used. Titanium or silica cased heaters are recommended.

DISCLAIMER:

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