TECHNICAL DATA SHEET

SPECTEK 1977 BRIGHT NICKEL PROCESS

Spectek 1977 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 wide range of operating bath concentration, temperatures and current densities. Furthermore, the Spectek 1977 has been formulated to provide superior tolerance to metallic impurities such as copper and zinc. Consequently a variety of base metals including zinc die-casting can be processed in the same operating solution without affecting low current density performance. This has been formulated to have a very low consumption as compared to the existing nickel brightener.

SALIENT FEATURES:

1. An unmatched combination of high plating performance over a wide range of operating concentrations and temperatures.
2. Outstanding leveling and deposits brilliance particularly in low current density areas.
3. Potential to remove Nickel thickness, in many applications where deposits appearance is the prime consideration which can be result in less nickel consumption or increased production.
4. Excellent deposit ductility and Gold and Chrome receptivity and hence widely used for plating jewellery and novelty parts.
5. Outstanding tolerance to ,metallic impurities.

SOLUTION COMPOSITION :

	OPTIMUM	RANGE
Bright Nickel Salt	400 g/l	350-400 g/l
Nickel Additive 722	10 cc/l	10-12 cc/l
Spectek 1977	0.5 cc/l	0.5-1 cc/l
Antipit 10	0.5 cc/l	0.2-0.8 cc/l

OPERATING CONDITION :

	OPTIMUM	RANGE
Cathode current density	4 A/dm^2	2-8 A/dm^2
Anode current density	2 A/dm^2	1-3 A/dm^2
Temperature	55^{o}C	55-60 ^{o}C
pH	4.6	4-4.8
Density	24^o Be	20-28^o 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/l (100 of volume)

  Hydrogen peroxide stir vigorously at 50-70^{0}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.

REPLENISHMENT ADDITION :

Replenishment additions should be normally based on the ampere hours of plating done. The required amount of addition depends upon the degree of leveling and brightness required, drag out losses, base metal finish, and operating temperature etc.

FOLLOWING ADDITIONS ARE SUGGESTED:

Spectek	1977	----	75-125 cc/amp hours
Nickel Additive	722	----	150-250 cc/amp hours

MAINTNANCE :

Where the anode dissolution improper the nickel salt is generally lost only by drag out and by general wastage. So a daily addition of nickel salt is recommended to maintain optimum composition as under :

Nickel Metal	----	60-80 g/l
Chloride As Nickel Chloride	----	35-70 g/l
Boric Acid	----	35-45 g/l

CONVERSION OF EXISTING SOLUTION ;

Conversion can be easily carried out by adjusting nickel ion, chloride ion and boric acid content as to the required level, before conversion one liter of the bath solution should be sent to **SHARMA CHEMINDUS PVT LTD.**laboratory for necessary recommendation.

DISCLAIMER:

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