



LEN-920 System

Electroless Nickel

LEN-920 deposits have a nickel-phosphorous alloy that is deposited by means of an autocatalytic reduction of metal from solution without the use of electricity. LEN-920 coatings are noted for the following properties: Coating is uniform at a consistent, rapid rate, bright Electroless Nickel process with mid (7-9%) phosphorous content.

Advantages

- Stable, uniform rate / 8-10 metal turnovers.
- Controlled hardness, heat treatable.
- Excellent wear resistance, freedom from porosity.
- High tank stability.
- In compression.
- Natural lubricity, providing excellent release properties.
- Self-polishing effect in molding operations.
- A sound base coating for subsequent finishing operations.
- Easily waste treatable.
- Ammonia free

Deposit Properties:

Phosphorous Content	7-9 wt. %
Hardness	48-52 Rc as plated 70 Rc 750° F 1 Hour
Internal Stress	Compressive
Ductility	Pass (ASTM B-489)
Electrical Resistivity	70-100 microhm-cm
Melting Point	880° C
Density	7.75 g/cc

Operating Data:

LEN-920 S	Bath make-up solution
LEN-920 N	Nickel replenisher
LEN-920 H	Hypophosphite replenisher with ammonia

Operating Instructions

1. A new bath should be made with 20 parts LEN-920 S and 80 parts DI water. Tanks should be previously calibrated to assure proper concentration. Tanks may now be half filled with DI water. LEN-920 make up is added with agitation on. DI water is then added to bring the solution to the proper level.
2. pH should now be checked and adjusted to 4.8 with Aqua Ammonia if necessary. Always dilute ammonia 1:1 with DI water before adding. The same dilution applies to sulfuric acid if the pH ever needs to be brought below 5.0. The proper operating range is 4.5 to 4.9.
3. Air must be turned on before turning on heat.
4. Filter should be turned on and remain on throughout the operation period.
5. The bath is heated to 185-188° F for normal operation. Making sure the heater thermostat is in the bath. Do not exceed 195° F.
6. Titration of bath should be used on the amount of work being processed.
7. Operation range of nickel content should be maintained between 85-90%.
8. Replenishment adds may be made during plating at a ration of 1N:2H. LEN-920 N is always added before LEN-920 H. **Replenishment should be made in 10% increments** to eliminate possible over-concentration of the bath.
9. Bath pH is maintained by proper replenishment. If, however, the pH varies form the operation range due to excessive drag-in, return to step #2.