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EBARA

TIN/NICKEL SNI

Bright tin/nickel alloy plating process

1. Characteristics

Tin/Nickel SNI is a bright, decorative tin/nickel plating process and produces a slightly reddish layer in a unique colour. Its application over bright nickel or satin nickel coatings presents a distinctive warm coloured appearance. Additionally high corrosion resistance is given to the layer with suitable adjustment of the plating conditions of the nickel undercoating.

2. Features

- Excellent bath stability assures stable quality of the colour of the layer.
- Applicable for rack- as well as for barrel plating due to its excellent throwing power.
- Excellent abrasion resistance and stable colour requires no top coating.
- Better corrosion resistance in comparison with general tin-cobalt alloy plated coatings.

Bath composition:

	<u>Optimum</u>	<u>Range</u>
SNI-tin (ml/l)	500	350 – 550
SNI-nickel (ml/l)	200	140 - 220

Operating conditions

	<u>Rack</u>	<u>Barrel</u>
Cathode current density (A/dm ²)	0,1 – 0,7	0,1 – 0,2
pH	7,6 – 8,2	7,6 .- 8,2
Temperature (°C)	45 - 55	45 - 55
Plating time (min.)	1 - 5	5 – 10
Anode	Stainless steel plate	
Agitation	Cathode rock	Agitation with barrel Movement

Equipment

Tank:	made of hard PVC or rubber lined steel tank.
Heating:	titanium heat exchanger or quartz heater.
Agitation:	cathode rocking of 1 – 2 m/min. or above; or solution flowage (air agitation is not applicable).
Anodes:	insoluble anodes like carbon, stainless steel or titanium/iridium oxide plates.
Ventilation:	required.
Filtration:	continuous filtration (activated carbon treatment is not required).

Bath make-up procedure

Add the specified quantity of SNI-tin into a thoroughly cleaned tank.

Add the specific quantity of SNI-nickel under mechanical agitation. Solid particles which appear will gradually dissolve during the agitation.

Top up with tap water until the required quantity is reached.

Check the pH and raise the temperature to its specified level. When the bath has been prepared according to the standard make-up quantities, pH adjustment is not required.

Solution control

The appearance and colour of the alloy coating depends on the ratio of metals in the solution. Therefore a regular adjustment of the bath composition based on analysis is required.

In actual operation, consumption is almost due to drag-out. Accordingly, replenishment should be made based on the analysis of the solution and the quantities to be replenished should be established for each line.

Check the pH value with a pH meter daily.

Add 20% potassium hydroxide solution and 20% polyphosphoric acid to raise and drop the pH .

Notes for use

Air agitation should not be used for it oxidizes the tin in the solution. The plating line should be equipped with a cathode rock or solution flowage agitation system.

Being a potassium pyrophosphate bath, it contains

6. Safety indication

The necessary precaution measures should be adhered to in handling the chemicals. Chemicals without a hazardous indication should not be seen as harmless. Also when the handling of chemicals are not due to hazardous identification, we recommend to handle with care and avoid for example skin contact.

7. Warranty

Seller makes no warranty, whether of merchantability, fitness or otherwise, expressed or implied, concerning the product other than it shall be of the specifications stated herein.

Any recommendations made by seller concerning the use of the product are believed to be reliable, but seller makes no warranty of the results obtained. Buyer agrees to inspect the product supplied hereunder immediately after delivery. Failure to give notice in writing as aforesaid within the specified time constitutes and unqualified acceptance of the product and a waiver of all claims with respect thereto.

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