Schlötter
Galvanotechnik

Zinc-Alloy Electrolytes

For durability under extreme conditions!

zinc-nickel alloy processes

zinc-iron alloy processes

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SLOTOLOY ZN 1000

Zinc-Nickel SLOTOLOY ZN 1000 is a weakly acidic, ammonium- and boric acid-free electrolyte for the deposition of silky-matt or bright zinc-nickel alloy coatings with a nickel content of 12 - 15 % (w/w). The electrolyte shows a clearly lower total metal concentration than comparable common processes on the market. Despite of the cost saving by this reduction the characteristics towards the previous processes could be improved significantly. Further advantages of SLOTOLOY ZN 1000 are reduced burning behavior, improved alloy distribution, lower drag-out losses, better rinsing behavior by a new additive system, improved anode solubility and better current efficiency. The electrolyte can be used for both, coating of rack parts (preferably cast !) and barrel parts. The metal content of the electrolyte is maintained in the correct ratio by the use of separated zinc- and nickel anodes.

Concentrations and operating conditions	Range
Zinc g/l	32 - 38
Nickel g/l	8 - 15
Chloride g/l	150 - 165
Boric acid g/l	50 - 70
Operating temperature °C	32 - 36
Cathodic current density A/dm²	0,5 - 3,0

SLOTOLOY ZN 210

Zinc-Nickel SLOTOLOY ZN 210 is an alkaline, single-step process for the deposition of zinc-nickel alloy coatings containing 12 - 15 % (w/w) nickel. It is only used for barrel plating. The difference to the two-step barrel process SLOTOLOY ZN 60 that has been introduced for a longer time, is a new additive system which allows steel types with a difficult starting behav our a deposition on single-step basis at barrel plating. Zinc-Nickel SLOTOLOY ZN 210 deposits semi-bright to bright alloy coatings with an excellent metal- and alloy distribution and shows a very good throwing power.

Concentrations and operating conditions	Range
Zinc g/l	7 - 8
Nickel g/l	1,0 - 2,0
Free sodium hydroxide g/l	110 - 130
Operating temperature °C	30 ± 2
Cathodic current density A/dm²	0,5 - 1,2

SLOTOLOY ZN 80

Zinc-Nickel SLOTOLOY ZN 80 is an alkaline High-End process for the deposition of zinc-nickel coatings with 12 - 15 % (w/w) nickel in the alloy to fulfil the highest requirements regarding corrosion protection. It's operated with insoluble nickel anodes. The electrolyte provides good metal distribution as well as a constant alloy composition over a wide current density range. With adequate maintenance the service life of the electrolyte is almost unlimited.

Concentrations and operating conditions	Range
Zinc g/l	6 - 9
Nickel g/l	0,5 - 1,5
Free sodium hydroxide g/l	90 - 110
Operating temperature °C	35 ± 2
Cathodic current density A/dm²	1,5 - 2,5

SLOTOLOY ZN 60

Zinc-Nickel Alloy SLOTOLOY ZN 60 is an alkaline process for the deposition of zinc-nickel alloy coatings in barrel applications. The process operates in two steps:

Step I (pre-plating)
deposits dull coatings containing 8 - 10 % (w/w) nickel.

Step II (final-plating)
deposits semi-bright zinc-nickel coatings containing 12 - 15 % (w/w) nickel.

Even steel types with poor starting behaviour (e.g. turning tool) can be plated very dependably due to the two-step process. While Step I fully covers the surface, Step II guarantees an impressive appearance as well as the required high corrosion protection expected from zinc-nickel coatings. The electrolyte shows a very even metal distribution as well as a constant alloy composition over a wide current density range.

Concentrations and operating conditions	(Step I)	(Step II)
	Range	Range
Zinc g/l	6 - 9	8 - 12
Nickel g/l	0,5 - 1,0	2,0 - 3,3
Alloy comp. % (w/w) Ni	8,0 - 10	12 - 15
Free sodium hydroxide g/l	100 - 130	100 - 130
Operating temperature °C	25 ± 2	25 ± 2
Cathodic current density A/dm²	0,5 - 1,2	0,5 - 1,2

SLOTOLOY ZE 1190

Zinc-Iron SLOTOLOY ZE 1190 is for the deposition of matt coatings with 0.1 - 0.3 % (w/w) iron in the alloy. An even, matt appearance will be achieved by the co-deposition of iron. Components coated with Zinc-Iron SLOTOLOY ZE 1190 show additionally a better resistance against the formation of white rust than comparable zinc plated components.

Concentrations and operating conditions	
	Range
Zinc g/l	7 - 12
Iron mg/l	15 - 45
Sodium hydroxide (caustic soda) g/l	90 - 120
Operating temperature °C	20 - 25
Cathodic current density A/dm²	max. 5

SLOTOLOY ZE 100

Zinc-Iron SLOTOLOY ZE 100 is a zinc-iron alloy electrolyte of the latest generation for the deposition of zinc-iron alloy layers with a higher iron content (0.3 - 0.9 % (w/w) iron). It's an electrolyte containing complexing agents with an excellent metal distribution and covering power. The layers are particularly suitable for black passivation. The electrolyte can be used for both rack- and barrel application "mixed operation".

Concentrations and operating conditions	
	Range
Zinc g/l	9 - 15
Iron mg/l	50 - 225
Sodium hydroxide (caustic soda) g/l	90 - 120
Operating temperature °C	20 - 25
Cathodic current density A/dm²	max. 4,0

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Regeneration System SLOTOREC CN

For long-life of your Zn-Ni electrolytes!

Cyanide which forms during the plating process in zinc-nickel electrolytes can continuously be removed without any process interruption.

This leads to the following advantages for the user:

- higher process stability
- more uniform appearance of the zinc-nickel layers
- lower consumption of additives (reduction of the ongoing operational costs)
- reduction of the "inactive nickel" quantity (tetracyanonickelate complex)
- due to lower operating nickel concentrations lower drag-out losses

Selective anion exchange technology

DIN EN ISO 9001: 2008
DIN EN ISO 14001: 2004

06/2016