Tin Lead SLOTOLET KB 10

The Tin Lead SLOTOLET KB 10 is an acidic, fluoride-free process for the deposition of matt fine grained tin-lead coatings. The field of application is the tin lead deposition at high cathode current density ranges e.g. in reel-to-reel plating plants where connector strips or wires are plated. The additive system contains low foaming wetting agents, which prevents foam formation issues under production conditions. The achievable cathodic current densities depend on the total metal concentration, electrolyte temperature and the intensity of the electrolyte circulation. Cathodic current densities of up to 80 A/dm² can be achieved when there is a high electrolyte flow. The achievable anodic current densities are also high, preventing anode passivation under normal operating conditions.

The carbon content of the coatings is 0.003 %. The solderability is excellent even after an accelerated heat aging of e.g. 16 h dry heat / 155 °C. The electrolyte is fluoride-free. Titanium is suitable for anode baskets or anode hooks. The drag-in of fluorides and complexing fluorides must therefore be excluded.

Matt Tin Lead SLOTOLET KB 30

SLOTOLET KB30 is an acidic fluoride-free electrolyte which produces matt fine grained
tin-lead deposits. This electrolyte has been formulated specifically for high speed tin-lead applications (such as reel to reel plating of connector pins, IC lead frames or wire plating).

The current density that can be achieved is dependant on the metal concentration, the temperature of the electrolyte and the agitation. The anodes dissolve at a constant rate even at high current densities so there is no danger of anode passivation under normal operating conditions.

Some of the benefits which can be achieved with SLOTOLET KB30 include the following:

- The SLOTOLET KB30 deposits display excellent solderability even after ageing tests.
- There is very little organic inclusion in the deposit. Typically the carbon content would be 0.005%.
- It is suitable for the plating of IC packages (trim and form processes).
- The SLOTOLET KB30 additives contain only traces of foam so even with strong agitation there is no danger of excessive foaming.
- The electrolyte does not contain fluoride. Titanium anode baskets or hooks are suitable. In such cases the drag in of fluorides or complexed fluorides must be avoided.

Bright Tin-Lead SLOTOLET GB 20

Tin-Lead SLOTOLET GB 20 is for the application in reel-to-reel plating lines. The fluoride-free, acidic electrolyte deposits bright tin-lead coatings with approx. 5 - 10 % lead in the alloy. Depending on the plant conditions and operating temperature cathodic current densities up to 30 A/dm³ can be achieved. The carbon content is approx. 0.02 % only.
Solderability of the coatings is excellent even after accelerated heat ageing (e.g. tempering 16 h/155 °C).

Titanium is among other things suitable for contacting of anodes, since titanium isn't attacked.

Tin-Lead SLOTOLET K 10 1

Tin-Lead SLOTOLET K 10 1 is a strong acidic fluoride-free process for the deposition of matt tin-lead layers. The alloy composition can be varied over a wide range. The special focus is on the eutectic mixture (35 % lead) and layers with a low lead content of 5 - 15 %. Within the chosen electrolyte composition the ratio of the alloy is very stable over a wide current density range.

The co-deposition of organic compounds in the coating is low; the carbon content is 0.005 %. Solderability following ageing tests is very good.

It should be noted that the organic additive can be analysed. This allows a control of possible organic impurities, e.g. in PCB manufacturing, but also the exact monitoring and documentation of all electrolyte parameters.

The layers deposited from Tin-Lead SLOTOLET K 10 1 are very smooth and therefore favour the forming process of connection legs at IC makers.

Bright Tin Lead SLOTOLET G 40 - 1

Bright Tin Lead SLOTOLET G 40-1 is a fluoride and formaldehyde free process for the deposition of bright tin-lead coatings with up to 40% lead in the alloy.
Solderability of the coatings is excellent even after accelerated heat ageing (e.g. 16 hours at 155°C). The electrolyte is suitable for barrel and rack applications and is mainly applied in the field of electronic components finishing.

The additives required for bath make-up and operation do not contain any alkylphenol ethoxylates (nonylphenol ethoxylates).

Tin-Lead SLOTOLET G 50 1

Tin-Lead SLOTOLET G 50 1 is a strongly acidic, fluoride-free electrolyte based on alkyl sulphonic acid and is intended for the deposition of bright tin-lead coatings. The alloy composition can be varied over a wide range. Haze-free coatings can be achieved in an alloy range of 5 - 35 %.

An alloy of 3 - 5 % lead is sufficient to prevent whisker formation. Solderability of the coatings is excellent even after accelerated heat ageing (e.g. tempering 16 h/155 °C).

The electrolyte is fluoride-free. It is possible to use anode baskets and -hooks made of titanium as long as the drag-in of fluorides or complex bound fluorides can be excluded.

A newly made-up electrolyte contains approx. 30 mg/l AOX. This minor AOX concentration will not increase the AOX content in the general effluent.

The additives required for make-up and operation don't contain any alkylphenol ethoxylates (nonylphenol ethoxylates).

Tin-Copper SLOTOLOY SNC 20

Tin-copper alloy electrolyte, sulphate-free with a copper co-deposition of app. 1 - 10 % copper. Fine crystalline, matt layers. Very low tendency to the formation of whiskers.

APPLICATION

- Electronics

PROCESS

- Barrel- and high speed applications
- No formation of interfering breakdown products
- Especially lead-free solder-pastes of tin/silver/copper are suitable
- Prevents immersion plating of copper on the tin anodes
- Uniform tin concentration in the process

BENEFITS

- Especially stable and long lasting process
- Very good solderability even after ageing

Tin-Silver SLOTOLOY SNA 30

Strongly acidic tin-Silver alloy electrolyte for the deposition of semi-bright fine crystalline alloy deposits. Silver incorporation rate is approx. 3 % by weight. Very low tendency to the formation of whiskers even with low layer thicknesses.

APPLICATION

- Electronics (press-fit pins, contacts, etc.)
- Semiconductor technology (wafer, etc.)

PROCESS

- Reel-to Reel-, wire- as well as rack- and barrel plating lines
- Suitable for spot plating (with strong electrolyte agitation)
- non-foaming process

BENEFITS

- Very low tendency to the formation of whiskers
- Meets RoHS Directive 2011/65/EU

Tin-Bismuth SLOTOLOY SNB 30 1

Strongly acidic tin-bismuth alloy electrolyte for the deposition of semi-matt fine crystalline deposits. The bismuth incorporation rate approx. is 5 % by weight. It is an alternative process for classic lead-tin alloy electrolytes with low tendency to stick together in barrel plating applications.

APPLICATION

- Electronics (resistors, resistances, etc.)

PROCESS

- Reel-to Reel-, wire- as well as rack- and barrel plating lines
- Suitable for spot plating (with strong electrolyte agitation)
- Non-foaming process

BENEFITS

- Very low tendency to sticking
- Excellent soldering characteristics
- Meets RoHS directive 2011/65/EU