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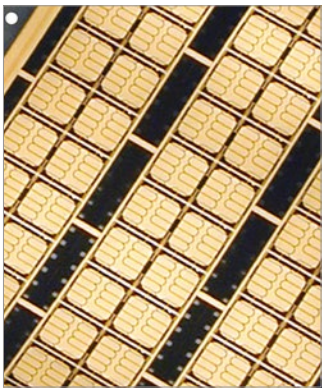
umicore Electroplating

AURUNA® 559

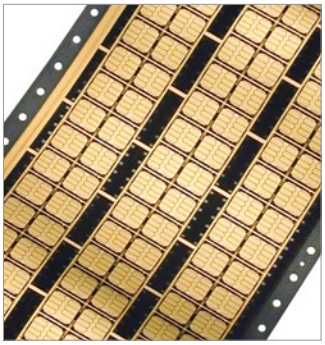
FINE GOLD ELECTROLYTE



Neutral High-Speed Electrolyte for Selective Gold-Plating

AURUNA® 559 is used for the very fast deposition of semi-bright to satin fine gold coatings with excellent bonding and soldering properties. The neutral fine gold electrolyte was specifically developed for use in high-speed equipment for selective goldplating (spray and flow lines, jet and spot plating).

Maximum applicable current density and therefore plating speed as well essentially depend on the electrolyte agitation at the parts (flow velocity), i.e. on the type of equipment used. A high flow velocity allows a high plating speed. For achieving good adhesion, on nickel and nickel alloys in particular, the parts should be strike gold-plated in the AURUNA® 580 gold strike electrolyte. The layers exhibit outstanding bondability and excellent temperature resistance. They are ductile and smooth and light-yellow even at high layer thickness (greater than 20 µm).



Advantages

- Satin fine gold coatings
- For high-speed applications
- High current densities possible (10 – 25 A/dm^2)
- High plating speeds (up to 15 µm/min)
- Excellent bonding and soldering properties
- The coatings are RoHS compliant
- Classification according to ASTM B-488-01 Type I-II, Code C-D

Applications

- Semiconductors

AURUNA® 559

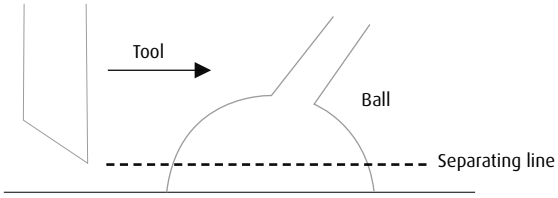
FINE GOLD ELECTROLYTE

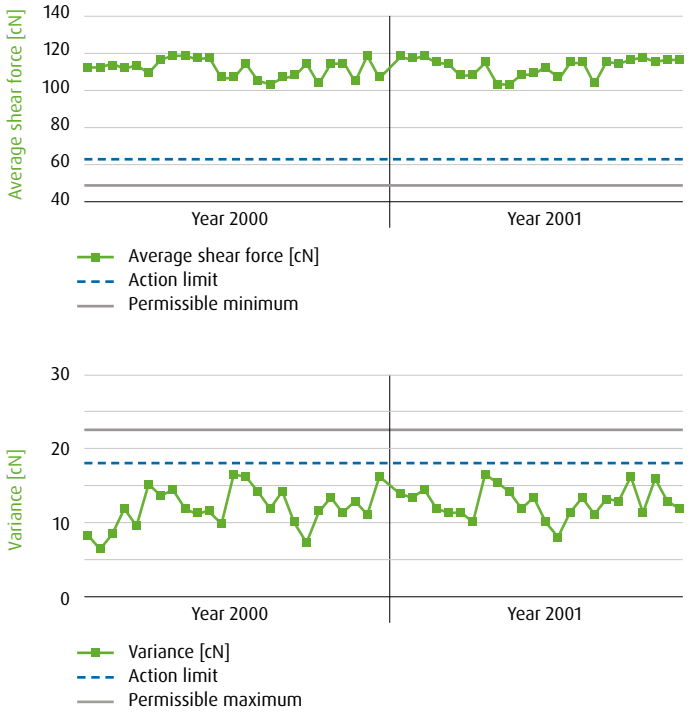
TECHNICAL SPECIFICATIONS

Electrolyte characteristics	
Electrolyte type	Neutral
Metal content	16 (14 - 16) g/l Au
pH value	7.5 (7.3 - 7.5) Measured at 25 °C
Operating temperature	70 (70 - 75) °C
Current density range	10 - 25 A/dm²
Plating speed	Approx. 6 - 15 µm/min
Anode material	Pt-Ti (type PLATINODE® Pt/Ti)

Coating characteristics	
Coating	Fine gold
Purity (according to ASTM B 488-01, Typ I-II, Code C-D)	99,9 wt. % Au
Colour of deposit	Light yellow
Brightness	Silk-matt to semibright
Hardness of deposit HV 0.015 (Vickers) approx. values	100 HV
Max. coating thickness	Approx. 19 g/cm³

Shear Forces - Ball-Wedge Bonding on Leadframe





Shear forces, measurement of ball side, ball-wedge bonding on leadframe, Au wire 33 µm, K&S instrument, Fmin > 50 cN, x (nominal) 70 - 90 cN

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