Betatec® E

Post-treatment for more than gold

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Betatec® E – the most effective sustainable anti-tarnish for more than gold

Betatec® E

is a sustainable electrolytic anti-tarnish for all connector surfaces including gold, and metal or metal alloy surfaces, particularly nickel-gold layer.

Betatec® E creates a highly hydrophobic surface that effectively protects it from corrosion and helps to maintain solderability even under the toughest conditions like extensive heat treatments and multiple reflow operations. It helps to withstand NAV and NSST through sealing pores.

Betatec® E is the sustainable alternative to Betatec® respectively Betatec® EL and can be applied in high-speed plating tools as well as in rack or in barrel applications. It does not contain any anti-foam, as it is unnecessary.

Properties

- Simple implementation
- Application time: 5 – 15s at 0.1 ASD
- Creates hydrophobic surfaces
- Works for gold, nickel, copper, tin, silver, palladium, and more
- Perfect solderability
- Significant improvement for NAV or NSST
- Minor effect on contact resistance
- Sustainable solvent

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Betatec® E – sustainable post-treatment for more than gold

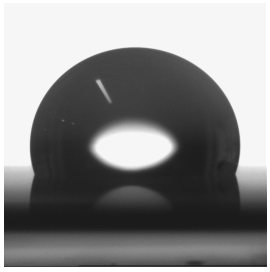


Figure 1: Hydrophobic surface after treatment

Betatec® E

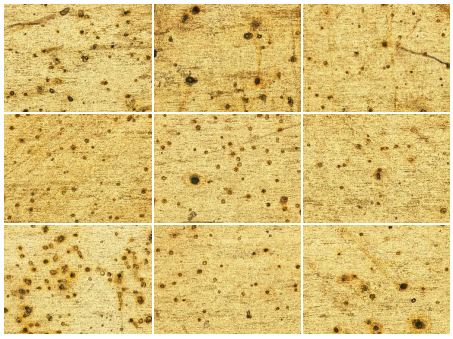
creates an organic monolayer on gold surfaces, which protects through hydrophilization of the surface. It repels nitric acid and other corrosive vapours and liquids. Betatec® E can be applied as either immersion or electrolytic (anodic) type. The immersion process already shows strong corrosion protection. For further improvements, we recommend using the anodic version.

Nitric Acid Vapor (NAV) test performance

Betatec® E shows significant corrosion resistance in immersion and anodic processes. Thin gold (0.12 – 0.15 µm) plated on Cu/Ni (1.2 – 1.9 µm) is exposed to 70 % nitric acid at 40 – 55 % humidity for 60 min. After drying at 80 °C for an hour, 9 test samples are examined as shown below.

In addition, anodic Betatec® E shows incredible results in the Neutral Salt Spray Test (NSST). The optimal parameters chosen were 150 ml/l Betatec® E at 1 V, 10 sec and 60 °C bath temperature for up to 72 hours.

No post-treatment (for reference)



Betatec® E immersion process

150 ml/l Betatec® E @ 10 sec, 50 °C

Betatec® E anodic process

150 ml/l Betatec® E @ 1 V, 10 sec, 50 °C

Parameter	Betatec® E
NSST* (0.12 – 0.15 µm Au over Ni)	72 h
NAV** (0.12 – 0.15 µm Au over Cu/Ni)	90 – 100 % corrosion-free
Solderability	Perfect
Wire bonding	Perfect

*NSST = Neutral salt spray test
** NAV = Nitric acid vapour test