SuperDip® Cu 1000

Effective Copper anti-tarnish

Electronics

Functional electronic coatings

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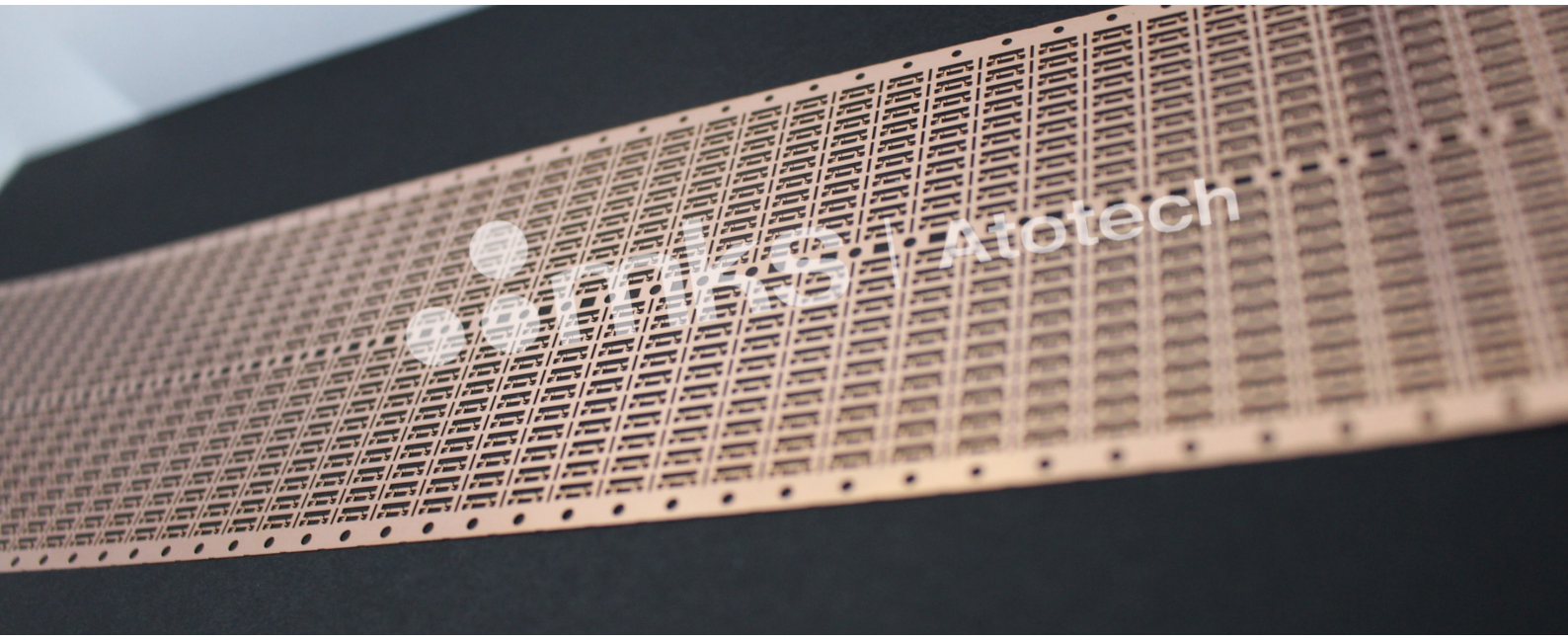

Versatile copper anti-tarnish

SuperDip® Cu 1000

SuperDip® Cu 1000 is an effective post-treatment process suitable for copper lead-frames and especially copper bus bars. The process contains no benzotriazole (BTA) and is compatible with modern connection technologies such as laser welding electronics.

It effectively protects the surface from building up thicker oxide layers. As such, it also helps to pass adhesion tests (tape test) for lead-frame applications.

Features & Benefits

- Non-BTA type
- Excellent heat resistance
- Compatible with laser welding
- Suitable for wire bonding
- No negative effect on mold adhesion

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SuperDip® Cu 1000 – Effective copper anti-tarnish

Figure 1:
Two samples subjected to steam aging test.
Left: Treated with SuperDip® Cu 1000
Right: Untreated

Why copper anti-tarnish?

Copper metals form an oxide layer when they are exposed to air, especially under humid or hot conditions. When copper is exposed to heat, untreated copper-oxide layers show weak adhesion to the base metal and can be peeled-off easily. These copper-oxide layers can impact the overall reliability significantly.

SuperDip® Cu protects the copper surface with an organic layer offering excellent heat resistance up to 300 °C. The process performance can further be boosted by using potassium silver cyanide (PSA) if required.

Heat resistance test

The test was performed with four copper samples, each treated with different post-treatments (Fig. 2). Sample 1 was left untreated for reference. Test parameters were heat-treatment at 180 °C for 8 minutes, 175 °C for 4 minutes, and 200 °C for 2 minutes.

Results show that one sample remained unchanged after heat treatment. This sample was treated with SuperDip® Cu 1000. Samples 2 and 4 were treated with competitor products.

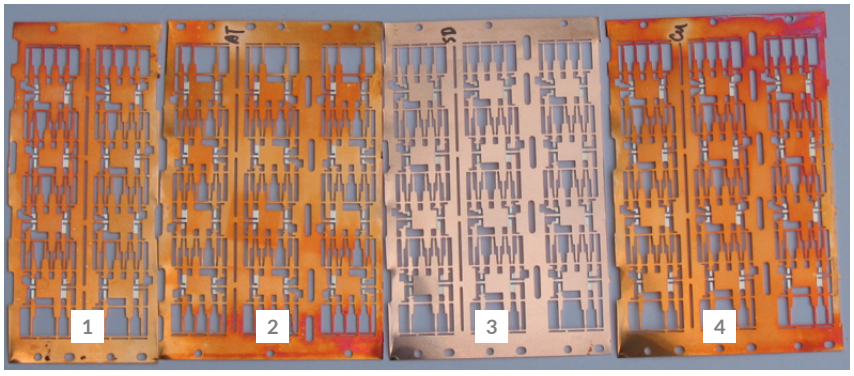

Figure 2:
Heat Resistance test performed on four samples:
(1) untreated, for reference
(2) treated with competitor 1
(3) treated with SuperDip® Cu 1000
(4) treated with competitor 2