

SuperDip 21N

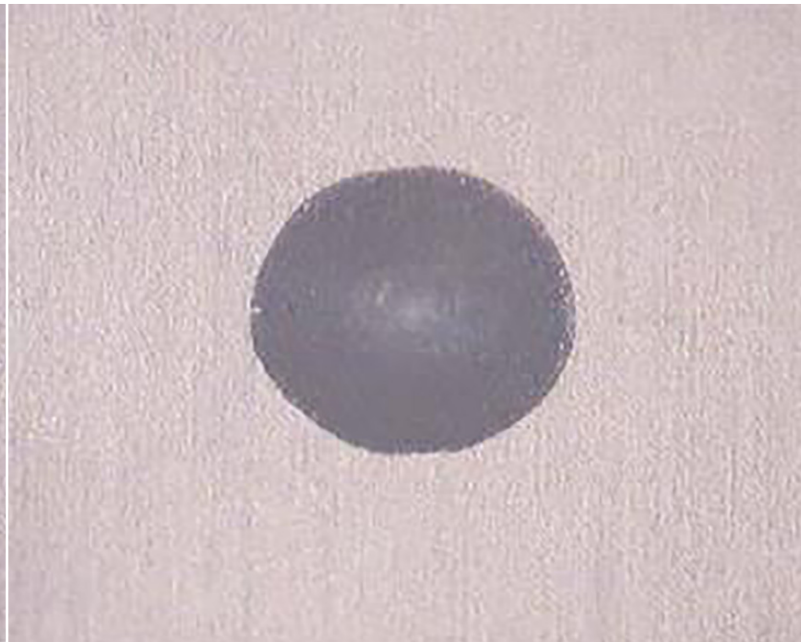
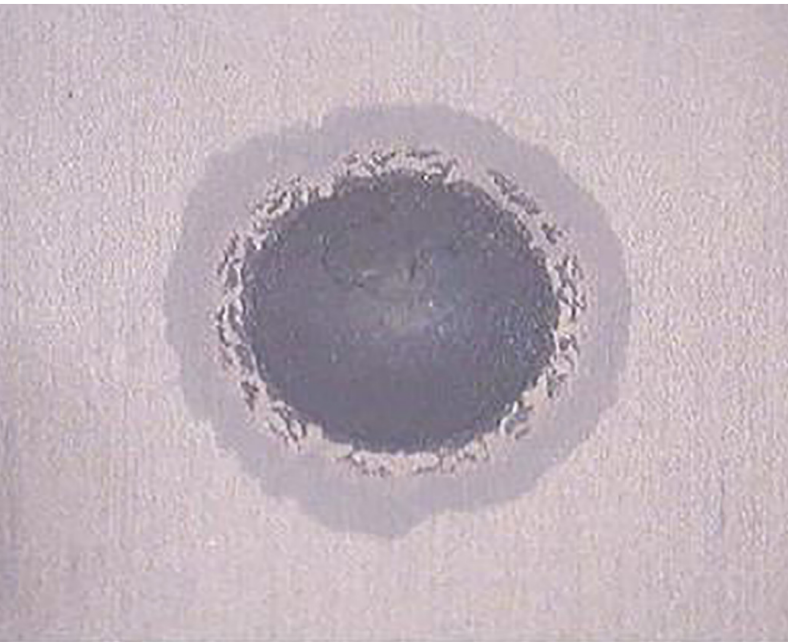
Post treatment technology for leadframe



Electronics

Functional electronic coatings

atotech.com



An effective 2-in-1 anti-tarnish / anti-EBO process

Introduction

SuperDip 21N is a unique single-step process to replace the conventional 2-step post-treatments used in leadframe manufacturing, i.e., anti-tarnish and anti-EBO.

By achieving dual functions from a single process, significant advantages have been accomplished such as lower overall costs and simpler process maintenance.

SuperDip 21N has eliminated the compatibility issue which generally occurs when using a 2-step anti-tarnish / anti-EBO process. As a result, better performance in terms of copper or silver surface tarnishing, epoxy bleed out (EBO) and copper peeled off (CPO) can be expected.

Applications

- Can be applied on:
 - Conventional selective silver leadframe
 - Copper roughened selective silver leadframe
 - Full silver LED leadframe
 - Atotech's NEAP / AgPrep leadframe
 - Ni/Pd/Au or Au alloy PPF leadframe
 - Rough Ni/Pd/Au or Au alloy PPF leadframe
- Examples of epoxy types tested:
 - ABLESTIK QMI518 / QMI519
 - ABLESTIK QMI9507
 - ABLESTIK 84-1LMISR4
 - ABLESTIK 8390 / 8390A
 - ABLESTIK 84-3J
 - SUMITOMO CRM1076 Series
 - HITACH EN4900 Series

SuperDip 21N – Innovative single step post-treatment for leadframe combining anti-tarnish and anti-EBO functions

1. Simplified leadframe plating process

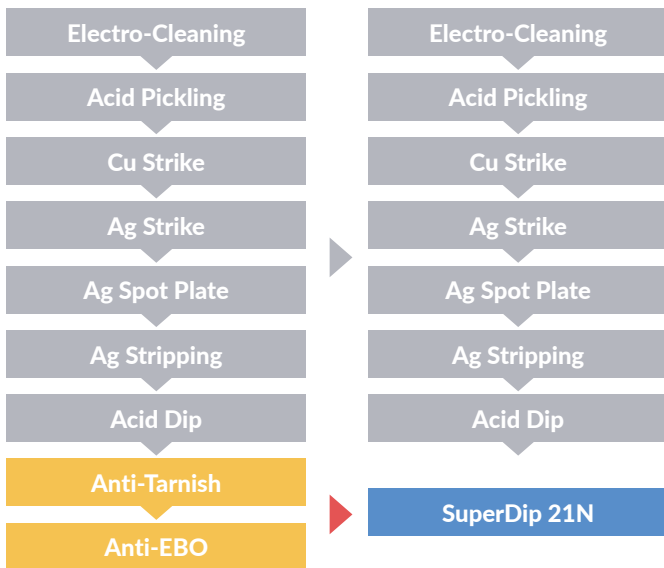


Figure 1: Process flow for leadframe spot Ag plating – Conventional (left), simplified process with SuperDip 21N (right)

2. Excellent protection against tarnishing

- Passed in-house stringent anti-tarnish performance test, i.e., 2 hours @ 93°C / 93% RH, after artificial contamination with Cl ions

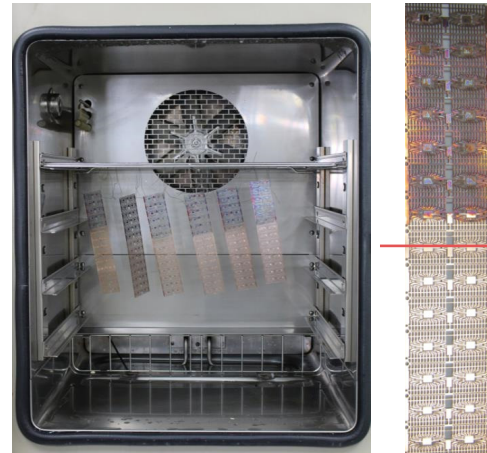


Figure 2: Anti-tarnish performance test using environmental chamber at 93°C / 93% RH, 2 hours with artificial chloride ions contamination on lead-frame surface. Non treated, versus treated with SuperDip 21N

3. Unsurpassed heat resistance performance

- “No peeling” after tape test, following the CPO test conditions described below, even after 8 weeks of frame storage

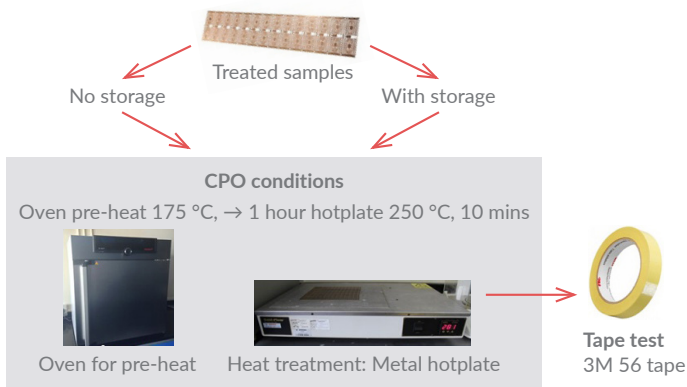


Figure 3: Copper peeled off (CPO) test conditions

4. Prevent die attach epoxy bleed out (EBO)

- SuperDip 21N reduces the surface energy, and hence prevents epoxy bleed out
- No negative effect on package delamination despite its outstanding anti-EBO performance

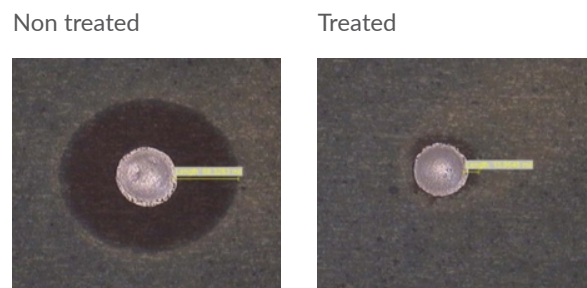


Figure 4: Epoxy bleed out test on rough copper surface. Non treated / control (left), treated with SuperDip 21N (right)

