

MoldPrep HMC

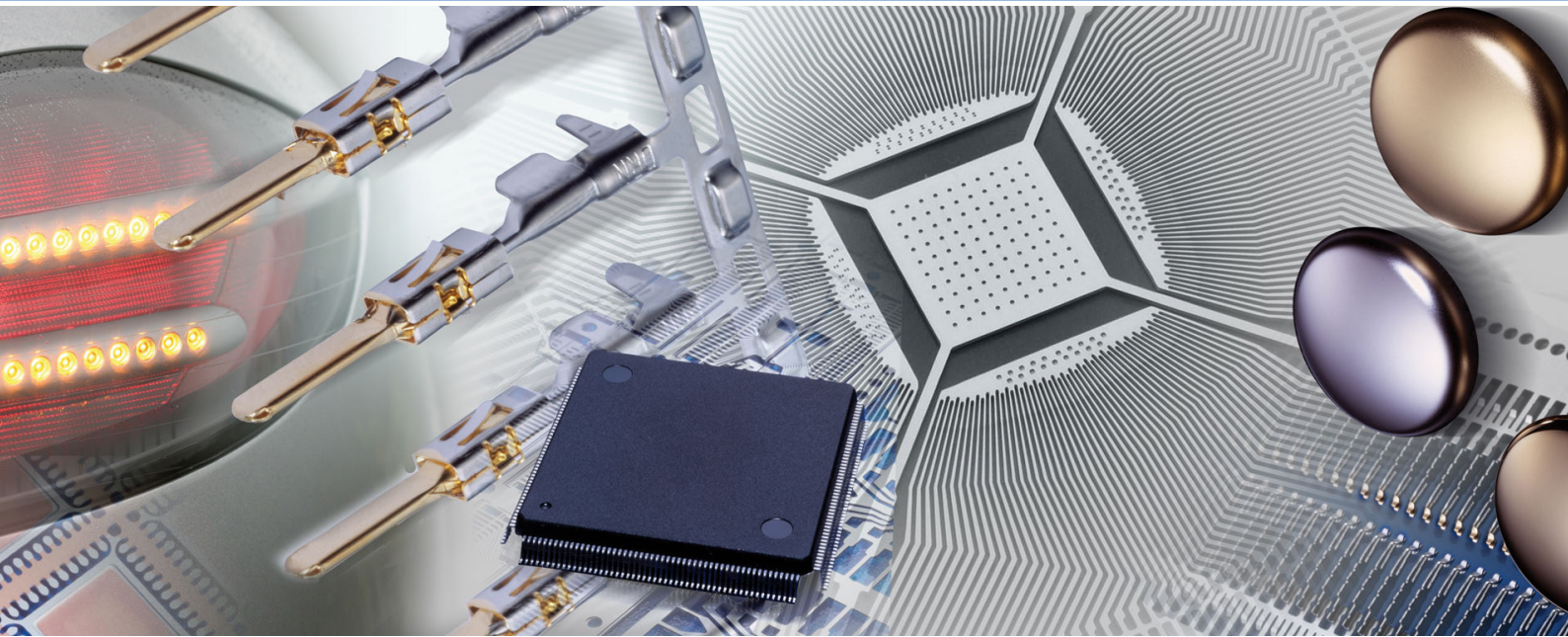
Ultimate adhesion enhancer
for MSL improvement



Electronics

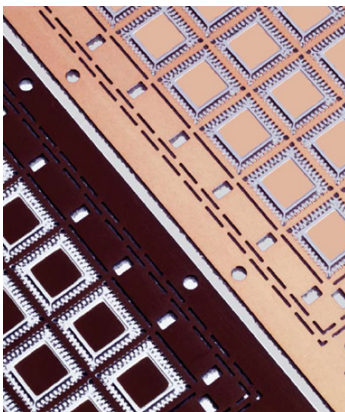
Functional electronic coatings

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MoldPrep HMC

Before treatment



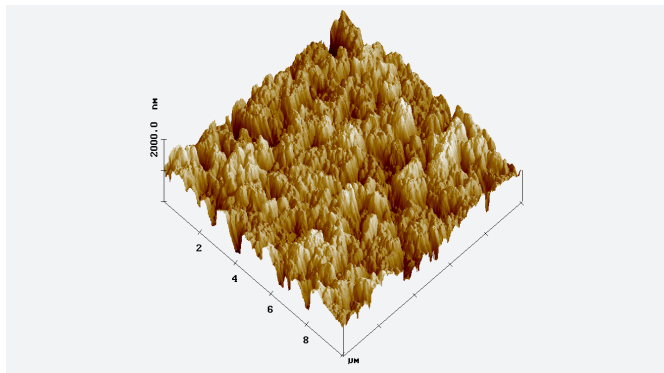
After treatment

IC reliability is directly influenced by the quality of the adhesion between leadframe materials and the mold resin. IC packages containing moisture, for instance, are more likely to crack if the device is exposed to heat, like in the case of reflow processes. This phenomenon is known as “popcorn cracking” and it is due to the internal stresses caused by the evaporation of the moisture trapped into the IC package.

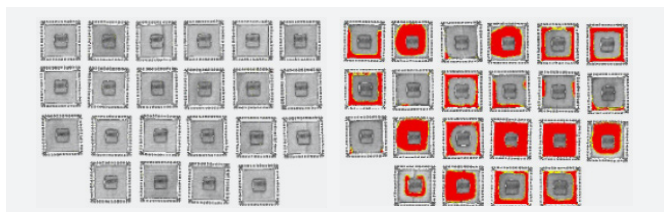
Such issues became even more compelling after the introduction of RoHS regulations and some specific market trends. Since the European Union prohibited the use of lead for electrical and electronic applications, the IC / leadframes and connector industries started using solders with higher melting point, therefore requiring higher reflow temperatures.

Hence MoldPrep HMC is developed as the adhesion enhancer to overcome and fulfil these stringent requirements.

Moldprep HMC – A well proven and robust process



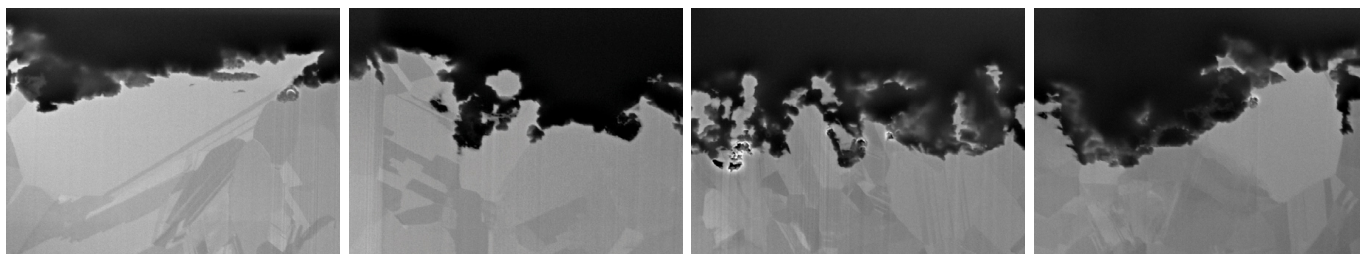
RSAI of 100% – which means doubling of the surface – after MoldPrep HMC treatment of a C-194 copper alloy leadframe surface. 10 μm x 10 μm AFM image



Silver ring plated QFN package with MoldPrep HMC treatment showing MSL1 at 260 °C (left) in comparison to conventional silver ring plating showing massive cracking (right).

Benefits of MoldPrep HMC at a glance

- Extraordinary copper holding capability, extending bath life
- High etch rate and short dwell time to achieve maximum roughness
- All leadframe materials – C191, C151, C7025, MF202, EFTEC64 etc. – can be processed with identical process sequence and products
- Significant improvement in MSL for all package types
- Applicable to all types of molding compounds
- Applicable in combination with conventional silver ring or dot and prior to nickel / palladium / gold plating
- MoldPrep PostDip EC is an effective silver post-treatment ensuring good wire bonding while not affecting the roughness generated by MoldPrep HMC on copper
- Can be used in either spray or immersion mode



MoldPrep HMC - Best adhesion enhancement with intergranular etching

