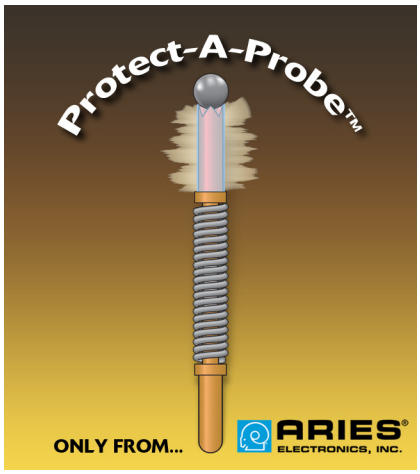
Protect-A-Probe™
ADG Coating to Lessen/Eliminate Probe Cleaning

FEATURES

The Protect-A Probe™ ADG (Anti-Diffusion Gold) coating is designed to lessen or eliminate the need for probe cleaning by applying a proprietary, anti-diffusion gold coating onto the probe before assembly. This coating, once applied, acts like a "Teflon" barrier preventing solder and other debris from adhering to the probe tip, lessening (or eliminating) cleaning, which reduces downtime and provides increased throughput!



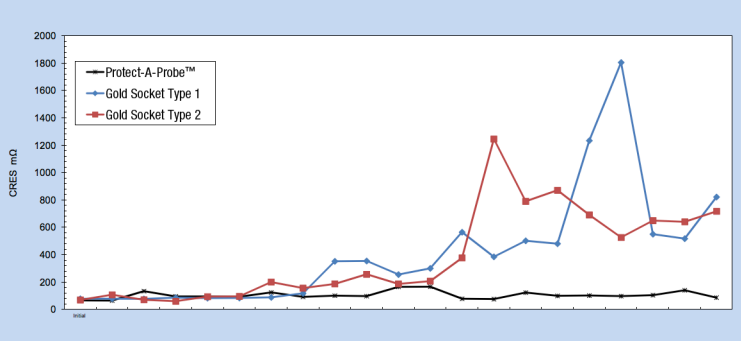
When used in HAST, HTOL or standard burn-in applications, this ADG coating can prevent the IC solder balls/bumps from "sticking" to the probe causing damage to the IC and/or socket. When used in test (including RF testing) applications, a probe that stays cleaner, longer, will yield more consistent contact resistance (CRes) readings over a longer period of time, thus saving time and money.

ADG coating has been tested in a socket with an IC which had SAC 405 balls on 0.35mm pitch for over 1500 hours at 150°C. No debris or IC or socket damage was noticed.

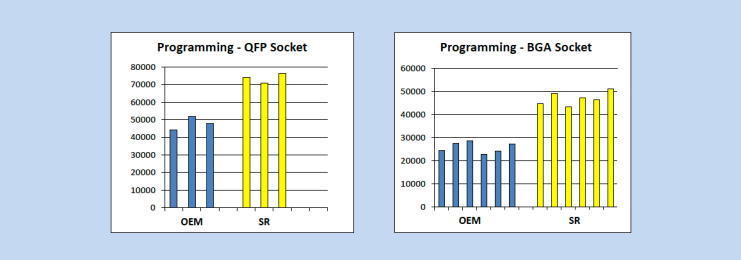
The ADG coating is now available for Aries' complete line of spring-probe, standard and custom Test and Burn-in Sockets as well as the complete line of spring-probe based RF Test sockets.

ORDERING INFORMATION
Consult Factory

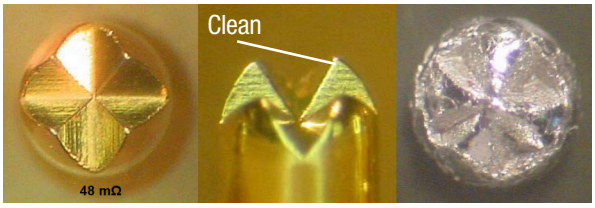
Comparison of Average CRes of Gold Sockets to ADG Coating



Advanced Coating – Increased Socket Life



168 hours @ 155°C Anti-Diffusion Gold



168 hours @ 155°C Standard Gold

See Technical Data on the Following Page

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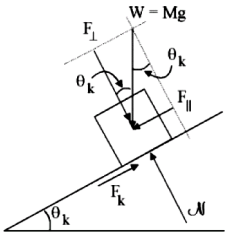
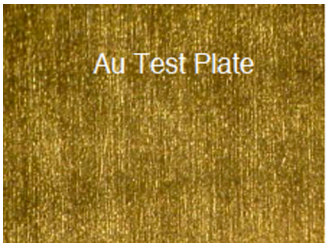
Protect-A-Probe™
ADG Coating to Lessen/Eliminate Probe Cleaning

ARIES Protect-A Probe™ ANTI-DIFFUSION GOLD (ADG)

- ADG is a proprietary, long-lasting, high-temperature (>150°C) alloy coating that resists Sn contamination.
- ADG coating exhibits minimal mechanical wear even after extreme cycles.
- ADG outperforms Standard Gold in Test, Burn-In, Programming, and Environmental Testing.
- ADG has superior Wear Resistance compared to Standard Gold.
  The Coefficient of Friction (μk) for ADG is extremely low, which means the coating resists mechanical wear.
  - μk 0.89 Gold Probe on Gold Test Plate
  - μk 0.38 ADG-coated Probe on Gold Test Plate
  - μk 1.13 Gold Probe on Pb-Free (Sn-coated) Test Plate
  - μk 0.57 ADG-coated Probe on Pb-Free (Sn-coated) Test Plate
- ADG has extremely low Surface Porosity, ten times (10x) less than Standard Hard Gold
- Sn does not easily transfer to the surface of ADG, so Probes and Contacts stay clean longer. Whereas, Sn readily attaches to Standard Gold surfaces, especially in the presence of heat, pressure, shear, or voltage potential.





Two plates prepared for testing:

Plate #1 – a Cu base, plated with Nickel and Hard Gold

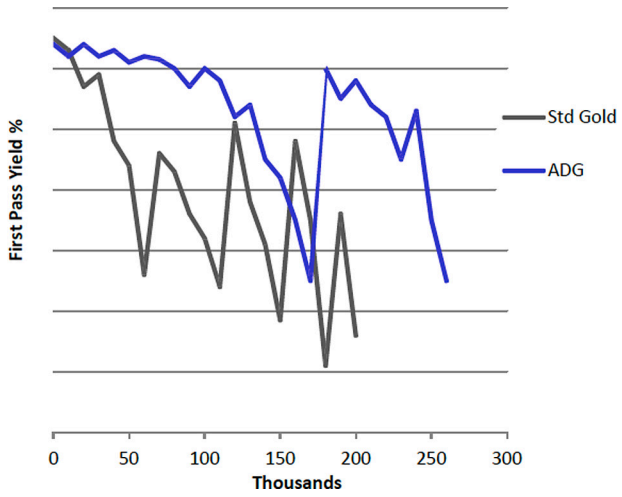
Plate #2 – a Cu Base, plated with Nickel and ADG

Both test plates were evenly coated with Sn and exposed to 155ºC for 24 hours and the quantity of Sn diffused into the surface measured.

Sn diffused into Plate #1 = 4.8mg ±0.5mg (Standard Gold)

Sn diffused into Plate #2 = 0.0mg ±0.5mg (ADG-coated)

- ADG Contact Resistance is equivalent to Standard Hard Gold. Most alternatives to Gold require the OEM to make painful design/engineering tradeoffs. ADG does not have negative tradeoffs.
- Surface Smoothness: ADG is smoother than Standard Gold. This decreases Sn accumulation at contact mating points.
- Ductility: ADG has 50% greater ductility than Standard Hard Gold. This eliminates micro-cracks and allows for crimping or other assembly operations.
- ADG is proven to improve Spring-Probe performance. As seen in the following chart, ADG significantly improved First Pass Yield. The Standard Gold socket was cleaned four times during the production run, while the ADG socket was only cleaned once.



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