

Gold Plating on Aluminium 6061 T6 and Kovar

Space Applications Centre (SAC) has developed and qualified a robust gold plating process on Aluminum 6061T6 and Gold plating on Kovar for space use. These processes are qualified for space use with very tight tolerances on various process parameters after subjecting to various tests like visual inspection, adhesion test, and environment tests, and engineering property specific tests conforming ASTM and MIL standards.

Aluminum is gold plated for its unique combination of physical, chemical and electrical properties. The high electrical conductivity of gold, low contact resistance and good solderability combined with the consistency of these properties over wide range of environment conditions experienced by satellite makes gold plating the ideal choice for plating electronic hardware.

Kovar is used to fabricate carrier plates which act as support for MICs for use in communication payloads

Specifications

Gold Plating on Aluminum 6061T6

Undercoat	Nickel-Phosphorous (Electroless Nickel)
Composition of undercoat	Nickel – Phosphorous (8-12%)
Undercoat thickness	10-12 μ
Topcoat	Gold (Electroplating)
Type of Gold Plating	Acidic Gold
Potassium Cyanide	Cyanide
Purity of Gold	99.99%
Thickness of Gold plating	2.5 \pm 0.5 μ
Gold Plating on Kovar	
Undercoat	Nickel (Electroplating)

Undercoat thickness	3-4 μ
Topcoat	Gold (Electroplating)
Type of Gold Plating	Acidic Gold Potassium Cyanide
Purity of Gold	99.99%
Thickness of Gold plating	2.5 \pm 0.5 μ

SALIENT FEATURES

- This process is developed after undergoing intense qualification plans and tests to withstand harsh space-like conditions
- Acidic gold potassium cyanide plating process
- Easy to control and maintain
- Optimized for uniform and dense thickness

APPLICATIONS

Gold plating is used in space grade mechanical components (Electronics circuit housing boxes, carrier plate etc). In electronics, gold plating is used to provide a corrosion-resistant electrically conductive surface. It is also used extensively in semiconductor industry e.g. in electrical switch contacts, connector pins and barrels and other applications where intermittent electrical contact occurs. Gold plating is generally practiced in aerospace applications.