

# NASA TECH BRIEF



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## Copper Wire Plated with Nickel and Silver Resists Corrosion

### The problem:

Silver-plated copper wire is widely used in electrical harnesses because of its excellent resistance to high temperatures, electrical properties, and solderability. The copper wire, however, is susceptible to galvanic corrosion which originates at breaks in the silver plate where moisture and dissolved gases (oxygen and carbon dioxide) are present. Nickel plating, which has been successfully used in many applications because it cathodically protects the copper wire substrate from galvanic corrosion, is difficult to solder.

### The solution:

Plate the copper wire first with 40 microinches of nickel and then with 40 microinches of silver. The double plating combines the corrosion resistance and mechanical protection of nickel with the solderability of silver.

### Note:

Further information concerning this innovation is described in "Corrosion of Silver-Plated Copper Wire," by W. T. McFarlen, *Wire and Wire Products*, vol. 40, no. 12, December 1965. Inquiries may also be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
Reference: B66-10421

### Patent status:

No patent action is contemplated by NASA.

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