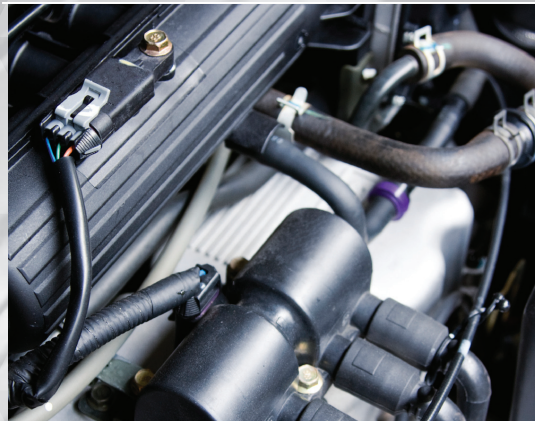




**MATERION**



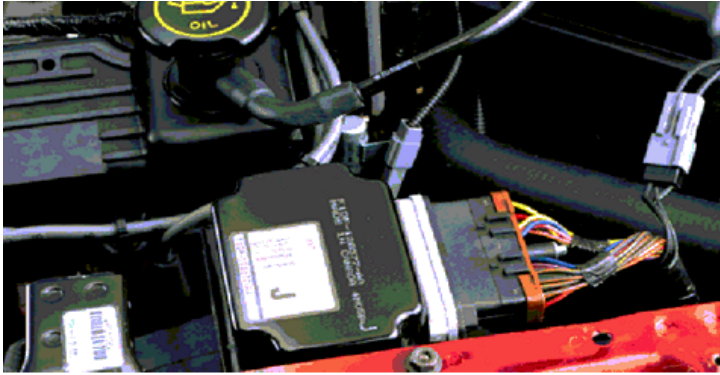
Automotive  
Connectors

**BRUSH  
PERFORMANCE  
ALLOYS**



Materion Brush Performance Alloys' products provide a cost efficient solution for automotive applications requiring the highest reliability at material performance levels beyond the capability of other copper alloys.

## Automotive Connectors



Materion Brush Performance Alloys' copper alloys conductivity can be up to 60% of pure copper with hardness equivalent to that of stainless steel.

Brush Alloy	Conductivity (%IACS)	Resistivity ( $\mu\Omega \cdot \text{cm}$ )	Yield Strength ( $\text{N/mm}^2$ )	Hardness (HV)
Brush 60	45-50	3.6	650-870	220-290
Alloy 174	45-60	3.1	550-830	180-280
Alloy 290	17-20	9.1	790-1200	285-430
Alloy 390	45-55	3.4	930-1050	280-340

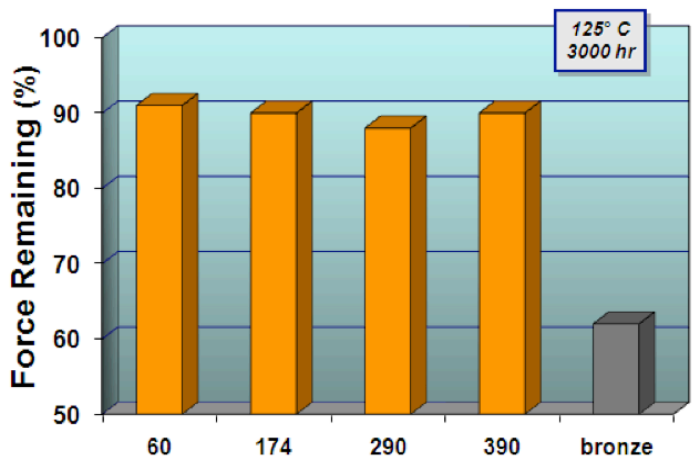
Brush Performance Alloys' copper alloys provide stability by minimizing loss in contact force from stress relaxation at elevated temperature.

### Design Requirements:

- To 100 Amp (300 Amp in EV/HEV)
- 35° C maximum temperature rise
- 2-4 N contact force to minimize power loss
- Resistance to vibration, elevated temperatures, and permanent set
- Controlled insertion force
- Allow for consistent performance in miniaturized designs

### Contact Alloy Property to Meet Design Requirements:

- High electrical conductivity
- High strength
- Resistance to stress relaxation
- Resistance to permanent deformation
- Bend formability



#### BRUSH PERFORMANCE ALLOYS

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#### MATERION CORPORATION

Materion (NYSE: MTRN) is a global advanced materials company dedicated to providing solutions that enable our customers' technologies and drive their growth. Our products include precious and non-precious specialty metals, precision optical filters, inorganic chemicals and powders, specialty coatings, specialty-engineered beryllium alloys, beryllium and beryllium composites, and engineered clad and plated metal systems. [www.materion.com](http://www.materion.com)