Contact-Materials
for low-action and snap-action contacts

Silver Nickel, gold-plated (Ag80 Ni20 gold-plated)
- electric conductivity - 47.0 m/Ω · mm² (re. below)
(standard material)

Nickel compound materials containing between 10 and 40 % nickel in weight are very hard and firm, have good electrical and thermal conductivities as well as a good resistance against consumption. Despite their oxidation under switching, they show a relatively low contact resistance in most cases. Further advantages of silver nickel compound materials are their low inclination to fuse together and little material migration under DC switching. Due to the applied gold plating, the material is particularly resistant to corrosion. Under currents of ≤ 20 mA, the gold plating ought to prove largely resistant. Due to their wide range of application, we use these compounds as standard material.

Silver Palladium (Ag70 Pd30)
- electric conductivity - 6.7 m/Ω · mm² (re. below)
(for sulphurous atmosphere)

Tarnishing of silver surfaces affected by sulphur can basically and effectively be reduced by additions of gold, platinum, and palladium. Moreover, to obtain a practically tarnish resistant silver alloy, rather important quantities of the aforementioned metals would have to be added. As palladium is the most priceworthy among the platinum metals and in addition has a lower unit weight than gold, this metal offers the most economic way of essentially improving the chemical resistance of silver. The silver palladium alloy containing 30 % of palladium is the usual sulphur resistant material for electric contacts.

Silver Palladium, gold-plated (Ag70 Pd30 gold-plated)
- electric conductivity - 6.7 m/Ω · mm² (re. below)
(for sulphurous atmosphere and low voltages)

The technical data are the same as for silver palladium. Due to the applied gold plating, the material is particularly resistant to corrosion. Under currents of ≤ 20 mA, the gold plating ought to prove largely resistant. The material may well be used in sulphurous atmospheres as well as for low voltages and currents.

Gold Silver (Au80 Ag20)
- electric conductivity - 10.0 m/Ω · mm² (re. below)
(for low voltages and currents)

Gold silver alloys containing 10 to 20 % silver show an excellent resistivity against corrosive attacks, are resistant to oxidation and show very low and constant transitional resistances. They are very good for low voltage contacts.

Platinum Iridium (Pt90 Ir10)
- electric conductivity - 3.2 m/Ω · mm² (re. below)
(for stronger currents)

Alloys of platinum containing 10 to 25% iridium are practically resistant against any chemical attack. The alloys are extremely hard and very resistant against burning up, their contact resistances are low, they resist high contact forces and high switching frequences, their contact safety is high even in dusty atmospheres. They slightly tend to material migration, which might result in undesired tip formations, particularly under small currents below 0.1 A. Under higher charges, their resistance to burning up is superior to gold and palladium alloys.

Explanation of formula:
Example: 47,0 m/Ω · mm²
A wire of 47.0 m in length and a cross section of 1 mm² has a resistance of 1 Ω .