

AgNi

# Silver Nickel

**SCOPE:** This information refers to silver nickel wires, profiles and contact tips manufactured by blending of silver and nickel powder, compacting, sintering, extruding and drawing or rolling to final dimension.

## Designation of standard compositions

The Ni content of the material is designated in weight percent. Standard gradations are 10, 15, 20, 30 and 40 %.

## Characteristics

- » reliable anti-welding properties for switching currents up to 100 A
- » low contact resistance (nearly constant throughout the life time)
- » low arc erosion for switching currents up to 100 A
- » good arc migration and arc extinguishing properties
- » good formability, can be welded directly

## Physical Properties

The physical properties depend mainly on the Ni content.

MATERIAL	DENSITY [g/cm <sup>3</sup> ]	ELECTRICAL CONDUCTIVITY [m/(Ω·mm <sup>2</sup> )]	HARDNESS SOFT [HV1]	TENSILE STRENGTH SOFT [MPa]	ELONGATION SOFT [%]
AgNi10	10.3	54	50	240	38
AgNi15	10.2	48	55	260	34
AgNi20	10.1	46	60	270	32
AgNi30	10.0	41	65	320	25
AgNi40	9.8	37	70	350	20

## Applications

- » switches for domestic applications, auxiliary switches
- » contactors of switching currents up to 100 A
- » miniature circuit breakers, circuit breakers (asymmetrical combination with AgC)
- » power line relays, automotive relays
- » main contacts for ACB

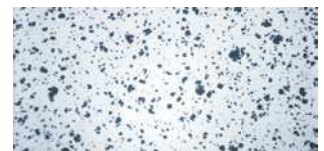
## Microstructure

The Ni particles are deformed along the direction of extrusion into fibres



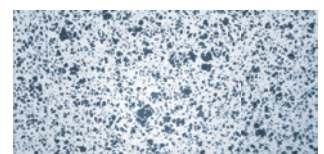
**AgNi10**

longitudinal section (parallel to the direction of extrusion)



**AgNi10**

cross section



**AgNi20**

cross section