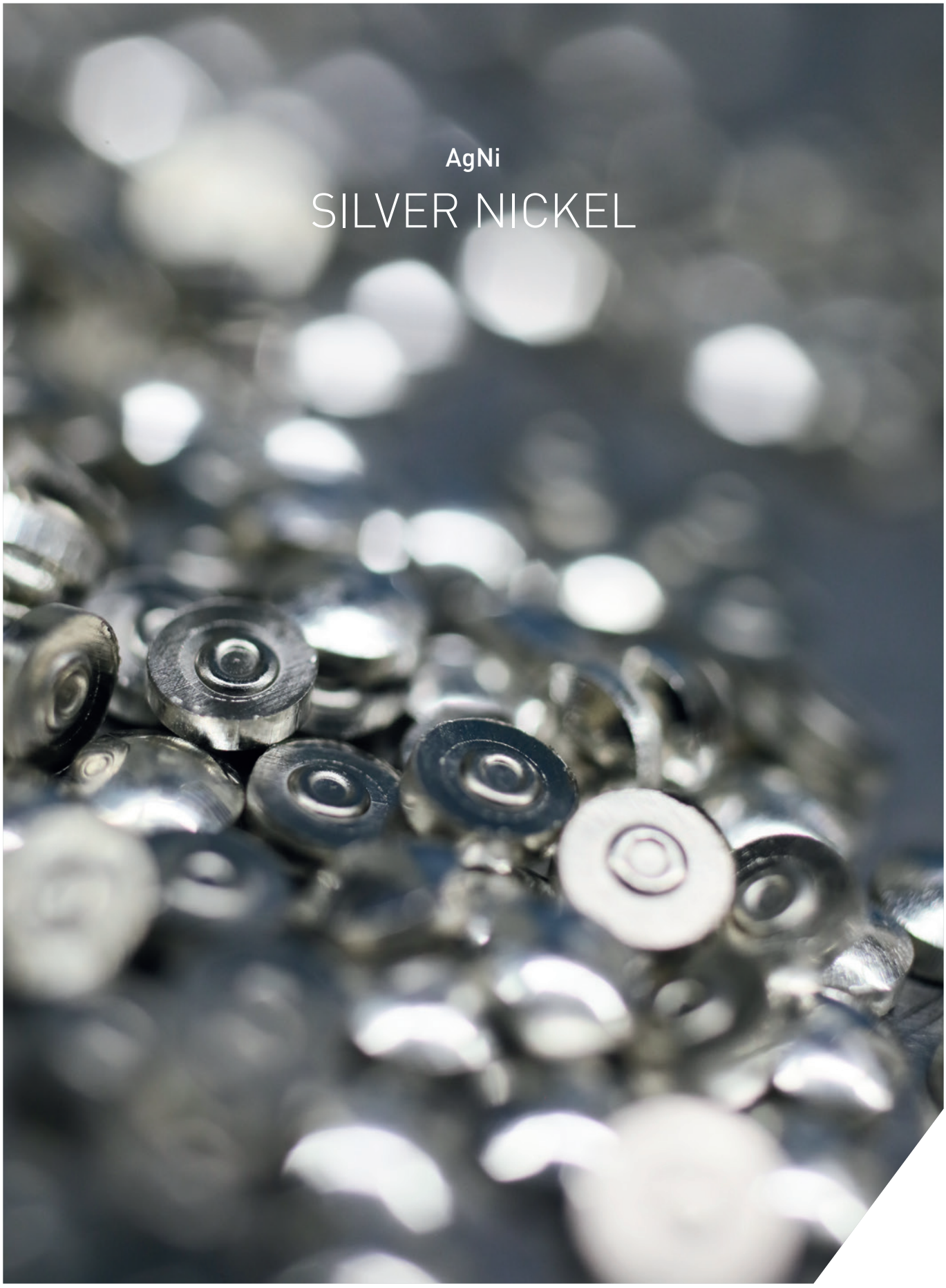
SAXONIA®
TECHNICAL MATERIALS



AgNi

SILVER NICKEL

/ SILVER NICKEL (AgNi)

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. Profiles and tips are available with a backing layer of brazing alloy.

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) for low Ni contents
- low arc erosion for switching currents up to 100 A
- good arc migration and arc extinguishing properties
- good formability, can be welded directly

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 air circuit breakers

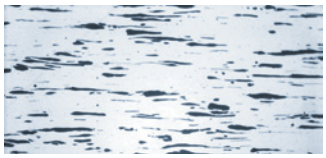
Physical Properties

The physical properties depend mainly on the Ni content.

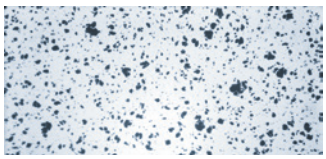
Material	Density	Electrical Conductivity	Hardness Soft	Tensile Strength Soft	Elongation Soft
	[g/cm³]	[m/(Ω·mm²)]	[HV1]	[MPa]	[%]
AgNi10	10.3	54	50	240	38
AgNi15	10.2	48	55	260	34
AgNi20	10.1	46	60	270	32
AgNi30	10.0	41	65	320	25
AgNi40	9.8	37	70	350	20

Microstructure

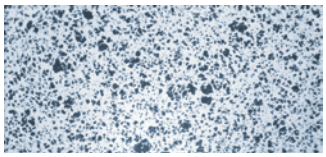
The Ni particles are deformed along the direction of extrusion into fibres



AgNi10
longitudinal section (parallel to the direction of extrusion)



AgNi10
cross section



AgNi20
cross section

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