

Zapp® N100 Data Sheet

Precision Wire

ZAPP

Zapp is certified acc. to ISO 9001

Zapp® N100

DIN 100V1, AISI W210, BS BW2,
JIS SKS43, Werkstoff-Nr. 1.2833

The Zapp® N100 material is mainly found in the application segment of industrial needles. In the annealed/ drawn state, this material has a uniform microstructure and good processability.

After hardening, the material is characterized by low warpage and a hardness of around 64 HRC. As a result of the sub-zero treatment, the hardenable structure is almost completely converted into martensite.

The low surface decarburization ensures optimal hardening results. The high wear resistance is due to the uniform carbide distribution.

Typical Analysis Zapp® N100*

C	Si	Mn	P	S	V	Cr
0.95– 1.05	0.15– 0.25	0.15 – 0.30	≤ 0.025	≤ 0.025	0.05– 0.1	0.20– 0.40

* Approximate values

Heat Treatment

	Temperature [°C]	Cooling Medium
Soft annealing	700 – 730	furnace
Stress-relief heat treatment	650 – 680	furnace
Hardening	825 – 875	oil
Tempering	180 – 280	air
Sub-zero treatment	-70	

Mechanical Properties

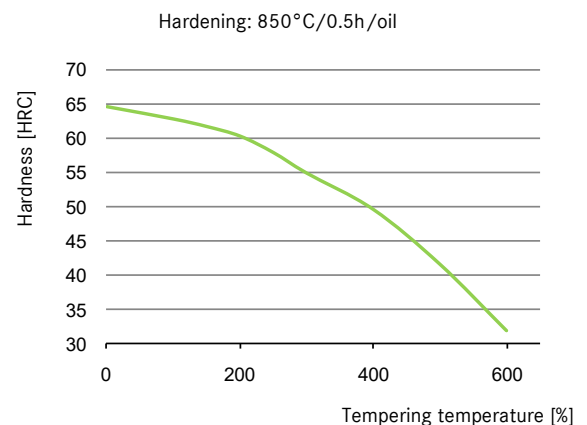
Annealed/ Drawn

	Symbol	Measured values at 20 °C	Unit
Tensile strength	Rm	600 – 900	MPa
Rp 0,2 -Yield point	Rp 0,2	≥ 400	MPa
Expansion	A	On customer request	%

Physical Properties

	Symbol	Measured values at 20 °C	Unit
Density	ρ	7.84	$\frac{\text{kg}}{\text{dm}^3}$
Specific heat	c	460	$\frac{\text{J}}{\text{kg} \cdot \text{K}}$
Thermal conductivity	λ	44	$\frac{\text{W}}{\text{K} \cdot \text{m}}$
Specific electrical resistance	ρ	0.20	μΩm
Modulus of elasticity	E	190 – 210	GPa
Thermal expansion coefficient	α _L	9.0 – 12.80	10 ⁻⁶ ·K ⁻¹

Tempering Diagram



Dimensions

0.3 – 4 mm

Diameter Tolerances

ISO 286-2 (ISO h8, narrower possible upon prior agreement). The total tolerance can be adjusted in the plus and/or minus tolerance range on request.

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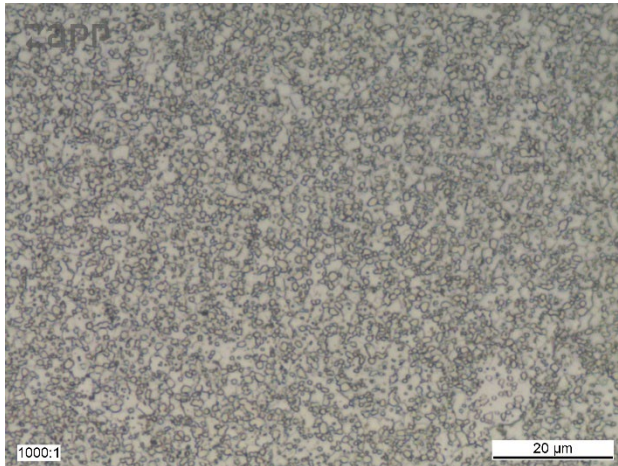
Finish

- Annealed and drawn with defined strength

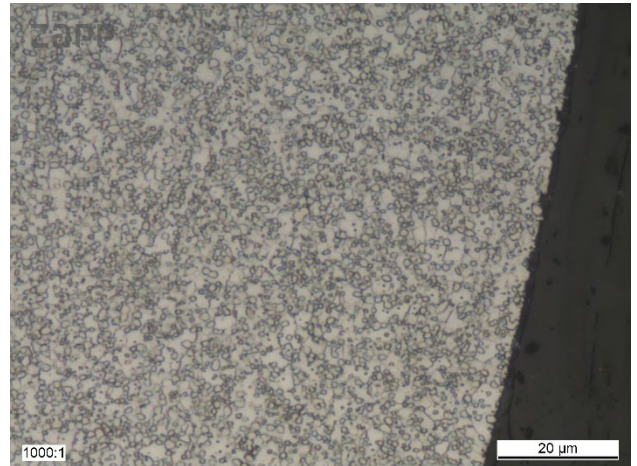
Delivery Forms (weight in kg)

- Ring: 25 – 35 kg
- Drum: 220 – 400
- Spool: max. 500 kg

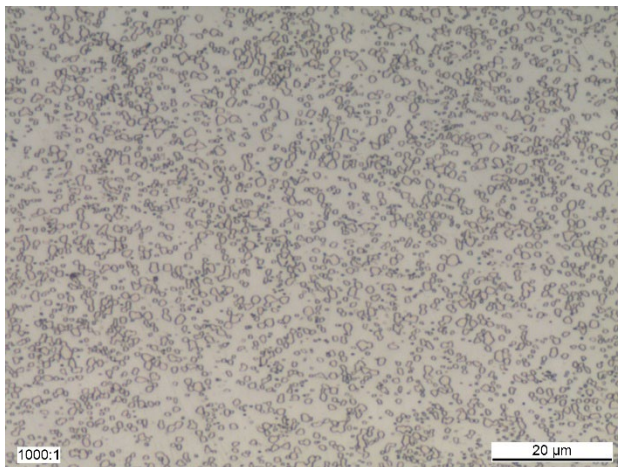
Micrograph in Nital Etch (Core))



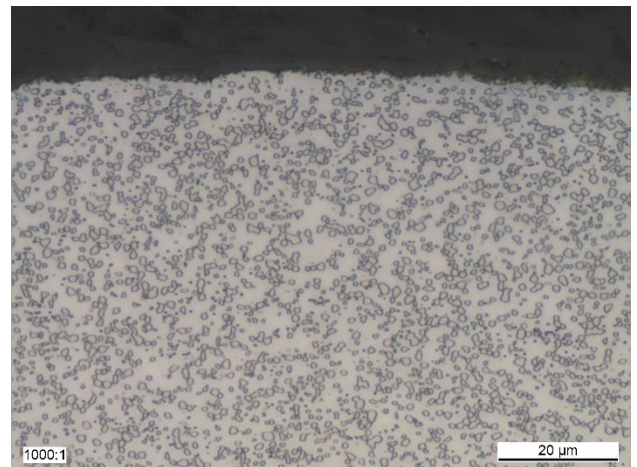
Micrograph in Nital Etch (Edges))



Micrograph in Picrid Acid (Core)



Micrograph in Picrid Acid (Edges)



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More information about our products and locations can be found in our image brochure and on our homepage at www.zapp.com

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This data sheet is not subject to update service.

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