Zapp® 1.4305 UA Datasheet
Precision Wire

Zapp is certified to ISO 9001

Zapp® 1.4305 UA

Zapp®1.4305UA is a stainless austenitic chromium nickel machining steel. Due to the high sulfur content Zapp®1.4305UA has an excellent machinability as well as a moderate corrosion resistance but it is badly forgeable and only conditionally weldable instead.

Typical Fields of Applications

- Fittings with moderate corrosive stress
- Automotive industry
- Kitchen appliances
- Mechanical engineering

Weldability

Zapp®1.4305UA is conditionally weldable because the material tends to hot cracks due to the desulfurization. Friction welding is recommended, if welding is necessary.

Magnetism

Zapp®1.4305UA is not magnetizable.

Corrosion Resistance

Media that provoke pitting have to be avoided because of the addition of sulfur. Therefore, Zapp®1.4305UA is more corrodible in acid and chlorinated media. Compared with the Zapp®1.4301PA, Zapp®1.4305UA is less corrosion-resistant due to the increased carbon and sulfur content.

PREN figure: 17-20.76 (not considering the impact of sulfur)

Polishability

The material Zapp®1.4305UA is only conditionally polishable compared with the Zapp®1.4301PA.

Corresponding Standards

- DIN EN 10088-3 (X8CrNiS18-9)
- ASTM F899 AISI 303 (UNS S30300)

Typical Chemical Composition

C	Si	Mn	P	S	Cr	Ni
max. 0.10	max. 1.00	max. 2.00	max. 0.045	0.15 – 0.35	17.00 – 19.00	8.00 – 10.00

Mechanical Properties (Solution Annealed)

Tensile Strength TS	[MPa]	500 - 750
Yield Strength YS	[MPa]	min. 230
Elongation A5	[%]	min. 35
Hardness HB		max. 250

Physical Properties

	Symbol	Measure-ments at 20 °C	Unit
Modulus of Elasticity	E	200	GPa
Specific Density	ρ	7.9	kg/m³
Thermal Conductivity	λ	15	W/m*K
Coefficient of Thermal Expansion	α		$10^{-6}*K^{-1}$
20-100 °C		16.0	
20-200 °C		16.5	
20-300 °C		17.0	
20-400 °C		17.5	
20-500 °C		18.0	
Specific Heat	c	500	J/kg*K
Electric Resistancy	ρ	0.73	Ω · mm²/m

Heat Treatment
Solution Annealing
Temperature: 1,000 – 1,100 °C
Cooling: Air, Water

Machining
Zapp®1.4305UA is characterized by an outstanding machinability.

Hot Working
Forging at 1,200 – 900 °C
Working in the lower temperature levels is more appropriate to prevent hot cracks.

PRECISION WIRE

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Further information regarding our products and locations are available in our image brochure and under www.zapp.com

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