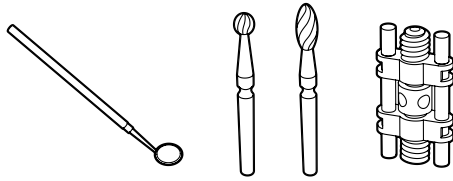


Ergste® 1.4305UA/UB Datasheet

Medical Alloys



Zapp is Certified to ISO 9001



Grade Ergste® 1.4305UA/UB

Ergste®1.4305UA/UB are stainless austenitic chromium nickel machining steels. Due to the high sulfur content Ergste®1.4305UA has an excellent machinability as well as a moderate corrosion resistance. In contrast Ergste®1.4305UB has a more stable structure due to the higher nickel and copper content and an increased corrosion resistance.

Typical Fields of Application

- surgical instruments
- dental instruments
- components for braces

Corresponding Standards

- DIN EN 10088-3 (X8 CrNiS 18-9)
- ASTM F899 AISI 303 (UNS S30300)*

Weldability

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

Magnetism

Ergste®1.4305UA/UB are not magnetizable in annealed condition.

Corrosion Resistance

Due to the high sulfur content Ergste®1.4305UA/UB are severely corrodible in all media.

PREN figure: 17-20,76 (not considering the impact of sulfur)

Typical Chemical Composition

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

* In deviation from the standard chemical analysis

Mechanical Properties

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

Physical Properties

Modulus of Elasticity at 20 °C [GPa]	200
Specific Density [kg/dm³]	7.9
Thermal Conductivity 20°C [W/m*K]	15
Coefficient of Thermal Expansion [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 at 20 °C [kJ/kg*°C]	500
Electric Resistivity at 20 °C [Ω*mm²/m]	0.73

Polishability

The material Ergste®1.4305UA/UB are conditionally polishable.

Heat Treatment

Solution Annealing

Temperature: 1,000 – 1,100 °C

Cooling: Air, Water

Machining

Ergste® 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.

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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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