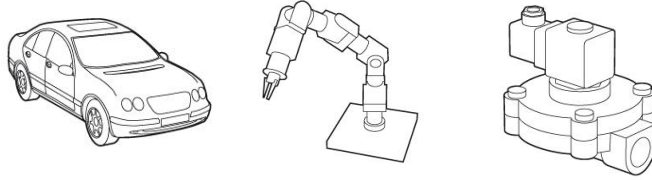


Ergste® 1.4016IH Automotive Datasheet & Automation Technology | Precision Wire



Zapp is Certified to ISO 9001 | IATF 16949



Categorization

- Ferritic, corrosion resistant steel
- DIN EN 10088-3
- AISI 430

Typical Applications

Ergste® 1.4016IH is used in solenoid valves for pneumatic, hydraulic and HVAC applications where moderate but defined magnetic properties are required in combination with high strength.

Processing and Usage Properties

Ergste® 1.4016IH (similar to X6Cr17) is a stainless steel with moderate magnetic properties and high strength. It is resistant in water, steam and other less aggressive media.

For improved properties in selective cases we recommend the following Ergste® grades:

Cold Heading

Ergste® 1.4003IA

Corrosion Resistance

Ergste® 1.4113IM

Machinability

Ergste® 1.4105IM

Ergste® 1.4105IL

Ergste® 9.9013IM

Magnetic Properties

Ergste® 1.4005IA

Ergste® 9.9013IM

Weldability

Ergste® 1.4511IA

Delivery Forms*

Round bars	Annealed, ground
Profiles	Annealed, straightened

* Crack tested according to DIN EN 10277-1, Table 1 Surface class 1-4, US-Testing: KSR (FBH) 0.7 mm or better

Typical Analysis*

C	Si	Mn	S	Cr	Mo
0.07	≤ 1.0	≤ 1.0	≤ 0.03	17.30	≤ 0.60

* weight percentage/approximate value

Mechanical Properties

Annealed	Short Symbol	Value at 20 °C	Unit
Tensile strength	Rm	≤ 620	MPa
Yield-strength	Rp 0,2	≥ 240	MPa
Elongation	A5d	> 20	%

Physical Properties

	Short Symbol	Value at 20 °C	Unit
Density	ρ	7.7	$\frac{\text{kg}}{\text{dm}^3}$
Specific Heat	c	460	$\frac{\text{J}}{\text{kg} \cdot \text{K}}$
Heat conduction	λ	25	$\frac{\text{W}}{\text{K} \cdot \text{m}}$
Specific electric resistance	ρ	0.6	$\frac{\Omega \cdot \text{mm}^2}{\text{m}}$
Modulus of elasticity	E	220	GPa

Magnetic Properties*

∅ 6 - 25 mm

		Mechanical Prop.	Soft ≤ 800 MPa	Half Hard 800 - 1000MPa	Full Hard ≥ 1000 MPa
		Magnetically Prop.			
Coercitive strength	jH_c	[A/m]	≤ 350	≤ 800	≥ 800
Maximum relative permeability	μ_{rmax}	[-]	≥ 900	≥ 500	≤ 300
Saturation polarization	J_{max}	[T]	≥ 1.55	≥ 1.55	≥ 1.55
Magnetic Remanence	B_r	[T]	≥ 1.00	0.75 - 0.95	≤ 0.65

* All properties given refer to round bars. Other sizes or profiles may have different properties.

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