

# 1.4105 IL, AISI 430FR, X6CrMoS17 Wire

## Automotive & Automation, Data Sheet



Zapp is certified to ISO 9001 | IATF 16949



### Categorization Alloy 1.4105 IL from Zapp

- Ferritic, corrosion resistant steel
- DIN EN 10088-3
- ASTM 838, Alloy Type 2 Grade 1
- AISI 430FR
- X6CrMoS17 (similar)

[Information about further automotive applications at Zapp](#)

### Typical Applications of 1.4105 IL

Our material Ergste® 1.4105 IL is mainly used in solenoid valves for pneumatic, hydraulic and HVAC applications.

### Processing and Usage Properties

Ergste® 1.4105 IL (similar to X6CrMoS17) is a stainless free cutting steel with excellent soft magnetic properties. It is designed for the volume production of precision turned parts. The grade is resistant in water, steam and other less aggressive media.

If welding is necessary, plasma- or laser welding should be preferred. The steel is suitable for cold forming operations within certain limits.

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

#### Cold Heading

Ergste® 1.4003 IA  
Ergste® 1.4016 IM

#### Corrosion Resistance

Ergste® 1.4113 IM

#### Machinability

Ergste® 1.4105 IM  
Ergste® 1.4523 IM

### Typical chemical Analysis\*

C	Si	Mn	S	Cr	Mo
≤ 0.03	1.0-1.5	≤ 0.8	0.25-0.35	17.25-18.00	0.20 - 0.50

\* weight percentage / approximate value

### Mechanical and Physical Properties

Tensile strength (soft annealed)	350- 550 MPa
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### Magnetic Properties of Round Bars

#### ∅ 3.8 – 6.7 mm

Coercitive strength $H_c$	≤ 220 A/m
Maximum relative permeability $\mu_{max}$	≥ 1,200
Saturation polarization $J_s$	≥ 1.5 T
Remanence $B_r$	0.5 - 1.1 T
Specific el. resistance $\rho$	≥ 0.79 $\mu\Omega m$

#### ∅ 6.8 – 27.0 mm

Coercitive strength $H_c$	≤ 180 A/m
Maximum relative permeability $\mu_{max}$	≥ 1,700
Saturation polarization $J_s$	≥ 1.5 T
Remanence $B_r$	0.5 - 1.1 T
Specific el. resistance $\rho$	≥ 0.79 $\mu\Omega m$

### Delivery Forms

Round bars	annealed, ground
Profiles	annealed, straightened

### Surface Finish

Crack tested according to DIN EN 10277, surface class 1-4

[Information about further stainless steel alloys at Zapp.](#)

## **Magnetic Properties**

Ergste® 1.4005 IA

Ergste® 9.9013 IL

## **Weldability**

Ergste® 1.4511 IA

[Further information: Please see our linecard for precision wire products.](#)

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Further information regarding our products and locations are available in our image brochure and under [www.zapp.com](http://www.zapp.com)

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