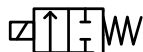


1.4113 IM, AISI 434 mod., Ferritic Corrosion Resistant Steel Data Sheet



Zapp is certified to ISO TS 16949



Typical Applications of 1.4113 IM

Our material Zapp® 1.4113 IM is mainly used in solenoid valves for pneumatic and hydraulic applications with higher requirements for corrosion resistance like in medical equipment.

Processing and Usage Properties

Zapp® 1.4113 IM (similar to X6CrMoS17-1) is a stainless free cutting steel with excellent soft magnetic properties. It is designed for the volume production of precision turned parts.

Its high molybdenum content provides a very good corrosion resistance in water, steam and other moderate aggressive media. It provides also a higher resistance against pitting corrosion.

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

Surface Finish

Crack tested according to DIN EN ISO 683-7, surface class 1-4

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

Typical Chemical Analysis*

C	Si	Mn	P	S	Cr	Mo
≤ 0.03	1.00 - 1.80**	≤ 1.00	≤ 0.04	0.20 - 0.35**	17.0 - 18.5**	1.50 - 2.50**

* weight percentage/approximate value

** deviating from the DIN EN

Mechanical and Physical Properties

Tensile strength (soft annealed)	400 - 600 MPa
Yield strength Re	≥ 280 MPa
Elongation A5	≥ 25 %
Specific electrical resistance* ρ	≥ 0.82 μΩm
Density* ρ	7.70 kg/dm ³

* for information only

Magnetic Properties of Round Bars of 1.4113 IM

∅ 4.0 – 6.8 mm

	Standard
Coercive strength H _c	≤ 220 A/m
Maximum relative permeability μ _{max}	≥ 1,000
Saturation polarization J _s	≥ 1.45 T
Remanence B _r	0.5 - 1.1 T

Magnetic Properties of Round Bars of 1.4113 IM

∅ > 6.8 – 27.0 mm*

	Standard
Coercive strength H _c	≤ 200 A/m
Maximum relative permeability μ _{max}	≥ 1,500
Saturation polarization J _s	≥ 1.45 T
Remanence B _r	0.5 - 1.1 T

* other sizes on request

Delivery Forms

Round bars	annealed, ground
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[Information about further stainless steel alloys at Zapp.](#)

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

Cold Heading

- Zapp® 1.4003 IA
- Zapp® 1.4016 IM

Machinability

- Zapp® 1.4105 IM
- Zapp® 1.4105 IL
- Zapp® 1.4005 IA

Magnetic Properties

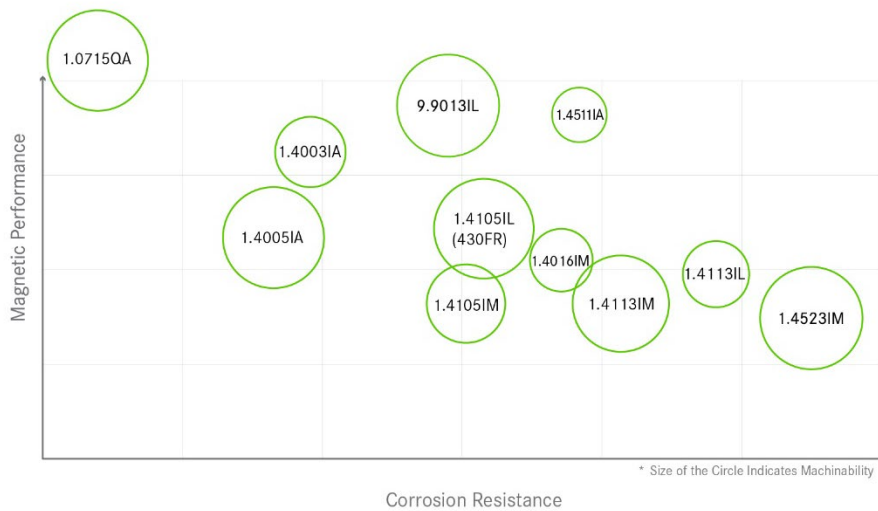
- Zapp® 1.4005 IA
- Zapp® 1.4105 IL
- Zapp® 9.9013 IM

Corrosion Resistance

- Zapp® 1.4113 IL
- Zapp® 1.4523 IM

[Further information: Please see our linecard for solenoid valves products.](#)

Overview Magnetic Properties



[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

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