

# Datenblatt | Data sheet

## Stainless steel 1.4125

Balls made of martensitic stainless steel with superior properties in terms of hardness, wear resistance, surface finish and with precise dimensional tolerances. Particularly suitable for use in precision fixtures. The balls are supplied in the passivated condition.

### Field of application

Stainless steel/special precision ball bearings, antifriction bearings, conveyor belts and rollers, ball pens. Food industry, instruments for medical applications, quick connectors, fastening mechanisms.

### Corrosion resistance

Remarkable corrosion resistance in contact with fresh water, steam, oil, gasoline and alcohol. Susceptible to pitting corrosion in marine environments. Low corrosion resistance in acidic environments.

### Material

Technical name	Alternative Name	Valid standards
1.4125	AISI440C, X105CrMo17	ISO 3290-1 / DIN 5401

### Chemical composition in %

C	Si	Mn	P	S	Cr	Mo
0,90 - 1,20	≤ 1,00	≤1,00	≤ 0,040	≤ 0,030	16,00 - 18,00	≤ 0,75

### Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	$\delta$	g/cm <sup>3</sup>	Physical	Environmental temp.	7,70
Modulus of elasticity	E	GPa	Mechanical	-	210
Specific heat	C	J/kg*K	Thermal	Environmental temp.	450
Coefficient of linear thermal expansion	$\alpha$	10 <sup>-6</sup> /°C	Thermal	(DT = 0 - 100 °C)	10,2
Thermal conductivity	$\lambda$	W/(m*K)	Thermal	Environmental temp.	19,6
Volume resistivity	$\rho$	$\Omega$ *m <sup>3</sup>	Electrical	-	680
Relative magnetic permeability	$\mu$	-	Magnetical	ferromagnetic	> 700

### Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	HRC	58 - 65		
Ultimate compressive strength	Mechanical	MPa	1900 - 2000	psi*10 <sup>3</sup>	275 - 290
Operating temperature	Thermal	°C	0 - 400	°F	32 - 752

### Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
0,300 - 300,000	1/64 - 12,0	G 10/15/16/20/24/25/28/40/48/50/60/80/100/200/300/500/600/700/1000