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Stainless steel ball 1.4034

Hardened stainless steel balls, feature good hardness, wear and abrasion resistance and fair corrosion resistance. Balls are provided in the hardened and passivated condition.

Field of application

Special bearings, anti-friction bearings, special pumps, recirculating balls, lighters, ballpoint pens, automotive seatbelts & components.

Corrosion resistance

Good corrosion resistance in industrial atmosphere, freshwater, steam, alcohol, ammonium, several oilfield products and organic compounds, dairy products, mild acid environments. Fairish in foodstuff and alkaline solutions. Fair in salt atmosphere. It does not resist in contact with sea water and strong acids (even if diluted).

Material

Technical name	Alternative Name	Valid standards
1.4034	AISI 420C, X46Cr13	ISO 3290-1 / DIN 5401

Chemical composition in %

C	Si	Mn	P	S	Cr
0,43 - 050	≤ 1,00	≤ 1,00	≤ 0,040	≤ 0,030	12,50 - 14,50

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm^3	Physical	Environmental temp.	7,75
Modulus of elasticity	E	GPa	Mechanical	-	205
Specific heat	C	J/kg*K	Thermal	Environmental temp.	450
Coefficient of linear thermal expansion	α	10^{-6}/°C	Thermal	(DT = 0 - 100 °C)	10,4
Thermal conductivity	λ	W/(m*K)	Thermal	Environmental temp.	27,6
Volume resistivity	ρ	$\Omega*m^{-9}$	Electrical	-	720
Relative magnetic permeability	μ	-	Magnetical	unhardened	> 600

Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	HRC	52 – 60		
Ultimate compressive strength	Mechanical	MPa	1700 - 1900	$psi*10^3$	250 - 275
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 5 / 10 / 28 / 40 / 100 / 200 / 300 / 500 / 600 / 700

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