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Stainless steel ball 1.4571

Balls made of non-hardenable austenitic stainless steel in V4A quality. By adding titanium, good intergranular corrosion resistance is achieved, especially at high temperatures. The balls are mostly supplied in passivated condition.

Field of application

Ball valves, special pumps, food/chemical/pharmaceutical, marine, medical and textile industries.

Corrosion resistance

Similar to AISI316/316L, but with better intergranular corrosion resistance under load and to pitting corrosion.

Material

Technical name	Alternative Name	Valid standards
1.4571	AISI316Ti, X6CrNiMoTi17-12-2	ISO 3290-1 / DIN 5401

Chemical composition in %

C	Si	Mn	P	S	Cr	Ni	Mo	N	Ti
≤ 0,080	≤ 0,75	≤ 2,00	≤ 0,045	≤ 0,030	16,0 - 18,0	10,0 - 14,0	2,0 - 3,0	≤ 0,100	5x(C+N) - 0,70

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm^3	Physical	Umgebungstemp.	7,95
Modulus of elasticity	E	GPa	Mechanical	-	200
Specific heat	C	J/kg*K	Thermal	Umgebungstemp.	500
Coefficient of linear thermal expansion	α	10^{-6}/°C	Thermal	(DT = 0 - 100 °C)	15,9
Thermal conductivity	λ	W/(m*K)	Thermal	Umgebungstemp.	15,6
Volume resistivity	ρ	$\Omega*m^{-9}$	Electrical	-	740
Relative magnetic permeability	μ	-	Magnetical	Magnetic iron	1,020

Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	HRC	15 - 35		
Ultimate compressive strength	Mechanical	MPa	650 - 1150	$psi*10^3$	95 - 166
Operating temperature	Thermal	°C	-196 - 600	°F	-320,8 - 1112

Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
0,300 - 300,000	1/64 - 12,0	G 100 / 200 / 300 / 500 / 600 / 700 / 1000

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