

AISI 52100 100Cr6 CHROME STEEL BALLS

Low alloy martensitic chrome steel, AISI 52100 thanks to its high hardness, wear resistance, surface finishing and dimensional precision, it is widely used to manufacture mechanical components.

Applications

Precision bearings, automotive components (brakes, steering, line shaft), bicycle, agitators, appliances, sliders, quick couplings, machine tool, lock mechanisms, conveyor belts, skates, pens, pumps, castors, measurement instruments, valves.

Chemical composition

%C	%Si	%Mn	%P	%S	%Cr	-	-	-	-	-
0.95-1.10	0.35 max	0.20-0.50	0.025 max	0.025 max	1.30-1.60	-	-	-	-	-

International standards

ITA	USA	GER	FRA	UK	RUS	CHN	JAP
100Cr6	52100	1.3505	100C6	534A99	9Ch1	GCr15	SUJ2

Physical / mechanical / thermal / electric / magnetic properties

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	[g/cm ³]	Physical	Room temp.	7.80
Young's modulus	E	[GPa]	Mechanical	-	200
Specific heat	c	[J/kg-K]	Thermal	Room temp.	464
Coefficient of linear thermal expansion	α	[10 ⁻⁶ /°C]	Thermal	($\Delta T=0-100^{\circ}C$)	12.3
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	42.4
Electric resistivity	ρ	[$\Omega \cdot m \cdot 10^{-9}$]	Electric	-	215
Relative magnetic permeability	μ	-	Magnetic	Ferromagnetic	> 300

Technical data

Property	Type	U.o.M.	Values	U.o.M.	Values
Hardness	Mechanical	[HRC]	60 - 66	-	-
Ultimate compressive strength	Mechanical	[MPa]	2500 - 2600	[psix10 ³]	362 - 377
Service temperature	Thermal	[°C]	-60 / 150	[°F]	-76 / 302

Range

Diameters	U.o.M.	Diameters	U.o.M.	Precision Grade (ISO 3290)
0.250 - 300.000	[mm]	1/64 - 12	["]	G3-5-10-16-20-25-28-40-60-100-200-500-1000