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Tool steel D2

Steel balls with high carbon and chromium content for tools. Good dimensional stability, very good mechanical properties and high abrasion and wear resistance.

Field of application
Special bearings for use under high mechanical loads in averagely aggressive environments.

Corrosion resistance
Compared to a martensitic stainless steel 420C, the steel balls for tools D2 have a slightly higher corrosion resistance.

Material

X155CrVMo121KU	D2 / T30402	1.2379

Chemische Zusammensetzung in %

C	Si	P	S	Cr	Mo	V
1,40 - 1,60	0,10 - 0,60	≤ 0,03	≤ 0,03	11,00 - 13,00	0,70 - 1,20	0,50 - 1,10

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm^3	Physical	Environmental temp.	7,67
Modulus of elasticity	E	GPa	Mechanical	-	209
Specific heat	C	J/kg*K	Thermal	Environmental temp.	460
Coefficient of linear thermal expansion	α	10^{-6}/°C	Thermal	(DT = 0 - 100 °C)	11,4
Thermal conductivity	λ	W/(m*K)	Thermal	Environmental temp.	20,5
Volume resistivity	ρ	$Ω*m^{-9}$	Electrical	-	650
Relative magnetic permeability	μ	-	Magnetical	ferromagnetic	> 500

Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	HRC	55 - 65		
Ultimate compressive strength	Mechanical	MPa	2100 - 2500	$psi*10^3$	304 - 362
Operating temperature	Thermal	°C	0 / 400	°F	32 / 752

Avaliable with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,000 - 150,000	3/64 - 6	acc. to ISO 3290-1 / DIN 5401 / AFBMA

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