

Datenblatt | Data sheet

Tool steel materials

Material	1.2379	1.3343	1.3551	55SiMoVa	1.3202
Name	X155CrV Mo121KU	HS 6-5-2	X80MoCrV4 4	S2 Rockbit	130505 KU
Alternative Name(s)	D2 / T30402	M2 / T11302	M50 / T11350	T41902	T15
Hardness HRC	55 - 65	62 - 66	60 - 65	63 - 68	63 - 68
Density g/cm ³	7,67	8,16	7,85	7,72	8,30
Operating temperature °C	0 - 400	0 - 400	0 - 425	-40 - 500	-40 - 540
Break load in traction MPa	2100 - 2500	2300 - 2500	2500 - 2700	2100 - 2200	3000 - 3500
Chemical composition in %					
C	1,40 - 1,60	0,78 - 0,88	0,80 - 0,88	0,40 - 0,55	1,50 - 1,60
Si	0,10 - 0,60	0,20 - 0,40	≤ 0,25	0,90 - 1,20	0,15 - 0,40
Mn		0,20 - 0,40	0,15 - 0,35	0,30 - 0,50	0,15 - 0,40
P	≤ 0,03		≤ 0,15	≤ 0,03	
S	≤ 0,03	≤ 0,03	≤ 0,008		
Cr	11,00 - 13,00	3,75 - 4,50	4,00 - 4,25		3,75 - 5,00
Ni			≤ 0,15		
Mo	0,70 - 1,20		4,00 - 4,50	0,60 - 0,60	≤ 1,00
Cu			≤ 0,10		
Co			≤ 0,25		4,75 - 5,25
V	0,50 - 1,10	1,60 - 2,20	0,90 - 1,10	≤ 0,50	0,90 - 1,10
W		5,00 - 6,75	≤ 0,25		≤ 0,25
Available with					
Diameter (mm)	1,000 - 150,000	1,000 - 150,000	1,000 - 150,000	4,5400 - 75,000	1,000 - 150,000
Diameter (in)	3/64 - 6	3/64 - 6	3/64 - 6	3/16 - 3	3/64 - 6
Precision grade	acc. to ISO-3290-1 / DIN 5401 / AFBMA	acc. to ISO-3290-1 / DIN 5401 / AFBMA	acc. to ISO-3290-1 / DIN 5401 / AFBMA	acc. to ISO-3290-1 / DIN 5401 / AFBMA	acc. to ISO-3290-1 / DIN 5401 / AFBMA

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Description	High carbon and chromium content for tools. Good dimensional stability, very good mechanical properties and high abrasion and wear resistance. Compared to a martensitic stainless steel 1.4034, D2 has a slightly higher corrosion resistance.	With tungsten and vanadium. Good toughness and abrasion resistance.	High mechanical and hardness properties and a great wear resistance at high temperatures.	Low alloy carbon steel, fully hardened. High toughness and wear and impact resistance. Especially for deep drilling applications.	With tungsten. Great hardness even at high temperatures and excellent abrasion resistance. Since they have low toughness, they are not suitable for applications where shocks occur.
Field of application	Special bearings for use under high mechanical loads in averagely aggressive environments.	Special bearings, ball screws	Special bearings for use in aerospace at high temperatures.	Drilling of oil wells, wells in general, equipment for offshore petroleum drilling.	Special bearings for which excellent abrasion resistance at high temperature is required.
Resistant to		Balls made of M2 have the highest corrosion resistance among tool steels, despite being a material subject to corrosive attack by aggressive substances.	Due to the Cr content, the corrosion resistance is higher than S2.	Good strength in alkaline solutions, satisfactory in contact with salts or industrial atmospheres, weak in contact with water and water vapors.	Higher than M50.
Unresistant to				Acids	

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