

Datenblatt | Data sheet

Stainless steel materials

Material	1.3541	1.4034	1.4125	1.4301	1.4401	1.4404	1.4571
AISI	AISI 420C	AISI 420C	AISI 440C	AISI 304	AISI 316	AISI 316L	AISI 316Ti
Name	X45Cr13	X46Cr13	X105CrMo17	X5CrNi1810	X5CrNiMo1712	X2CrNiMo1712	X6CrNiMoTi1712
Hardness HRC	52 - 58	52 - 58	58 - 65	25 - 39	25 - 39	25 - 39	25 - 39
Density g/cm³	7,75	7,75	7,75	7,95	7,95	7,95	7,97
Operating temperature °C	0 - 400	0 - 400	0 - 400	-196 - 700	-196 - 600	-196 - 600	-196 - 600
Break load in traction MPa	1700 - 1900	1700 - 1900	1900 - 2000	500 - 1300	550 - 1250	550 - 1250	650 - 1150
Chemical composition in %							
C	0,43 - 0,50	0,43 - 0,50	0,95 - 1,20	≤ 0,08	≤ 0,08	≤ 0,03	≤ 0,2
Si	≤ 1	≤ 1	≤ 1	≤ 0,75	≤ 1	≤ 1	0,4
Mn	≤ 1	≤ 1	≤ 1	≤ 2	≤ 2	≤ 2	≤ 2
P	≤ 0,04	≤ 0,04	≤ 0,04	≤ 0,045	≤ 0,045	≤ 0,045	0,03
S	≤ 0,03	≤ 0,03	≤ 0,03	≤ 0,03	≤ 0,03	≤ 0,03	≤ 0,03
Cr	12,5 - 14,5	12,5 - 14,5	16,0 - 18,0	18,0 - 20,0	16,0 - 18,0	16,0 - 18,0	16,7
Ni				8,0 - 10,5	10,0 - 14,0	10,0 - 14,0	10,6
Mo			≤ 0,75		2,0 - 3,0	2,0 - 3,0	2,1
N				≤ 0,10			
Ti							5xC < 0,7

This data sheet is for your information only and does not represent a contractually binding document. All the values indicated are standard values and may vary depending on the variety or manufacturer.

V1.00 / November 2021

Datenblatt | Data sheet

Stainless steel materials

Material	1.3541	1.4034	1.4125	1.4301	1.4401	1.4404	1.4571
Description	Good wear resistance and hardness, and satisfactory corrosion and impact resistance.	Good wear resistance and hardness, and satisfactory corrosion and impact resistance.	Superior properties in terms of hardness, wear resistance, surface finish and with precise dimensional tolerances.	V2A quality, good mechanical properties, high toughness and corrosion resistance	V4A quality. They have higher corrosion resistance as well as good toughness compared to 1.4301.	V4A quality. They have higher corrosion resistance as well as good toughness compared to 1.4301.	V4A quality, with titanium good intergranular corrosion resistance is achieved especially at high temperatures.
Field of application	Special ball bearings, antifriction bearings, special valves, ball screws, lighters, ball pens.	Special ball bearings, antifriction bearings, special valves, ball screws, lighters, ball pens.	Precision devices, stainless steel/special precision ball bearings, antifriction bearings, conveyor belts and rollers, ballpoint pens. Food industry, instruments for medical applications, quick connectors, fastening mechanisms.	Special bearings and pumps, pumps for aerosol, spray nozzles for horticulture and household products, micro atomizer pumps for perfumes, joints, valves for medical applications, pumps for field sprayers, ball screws; food industry, aerospace, military.	Bearings, special pumps and valves, food/paper/chemical/rubber /military/textile industries, photographic equipment, instruments for medical applications, quick connectors, ink cartridges, jewelry.	Bearings, special pumps and valves, food/paper/chemical/rubber /military/textile industries, photographic equipment, instruments for medical applications, quick connectors, ink cartridges, jewelry.	Ball valves, special pumps, food/chemical/pharmaceutical, marine, medical and textile industries.
Resistant to	Good in industrial environments, fresh water, steam, alcohol, ammonia, numerous petroleum products and organic	Good in industrial environments, fresh water, steam, alcohol, ammonia, numerous petroleum products and organic	Remarkable corrosion resistance in contact with fresh water, steam, oil, gasoline and alcohol.	Excellent corrosion resistance in contact with organic chemical substances, oxidizing solutions, foodstuffs and sterilization solutions. Good resistance to atmospheric corrosion and dyes.	Very good corrosion resistance (except hydrochloric acid). Resistant to sulfuric and phosphoric acid, salt water, acids and alkalis.	Very good corrosion resistance (except hydrochloric acid). Resistant to sulfuric and phosphoric acid, salt water, acids and alkalis.	Similar to 1.4401 / 1.4404, but under load and against pitting corrosion, they exhibit better intergranular corrosion resistance.
Unresistant to	substances, dairy products, weak acid environments. Satisfactory in food environments and alkaline solutions.	Substances, dairy products, weak acid environments. Satisfactory in food environments and alkaline solutions.	Susceptible to pitting in marine environments. Low corrosion resistance in acidic environments.	Susceptible to pitting and crevice corrosion in the presence of warm chlorides and to stress corrosion at temperatures above 60 °C. Unresistant to sulfuric acid solutions.			

This data sheet is for your information only and does not represent a contractually binding document. All the values indicated are standard values and may vary depending on the variety or manufacturer.

V1.00 / November 2021