

MATERIAL NUMBER 1.4571 · CLASS 1.4

320S18

Material no. 1.4571

also listed as X6CrNiMoTi17-12-2

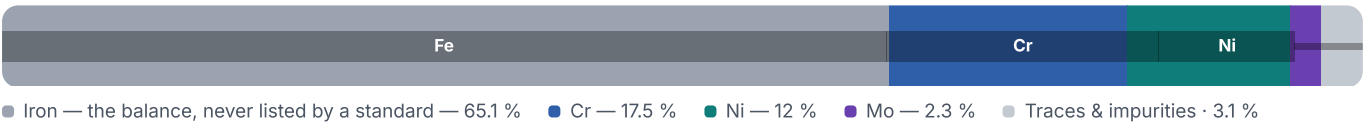
Chemical composition, mechanical and physical property values, and 72 standard designations from 17 regions.

DENSITY 8 g/cm ³	ELASTIC MODULUS 199 GPa	OTHER DESIGNATIONS 72 in 17 regions	PROPERTY VALUES 21 on file
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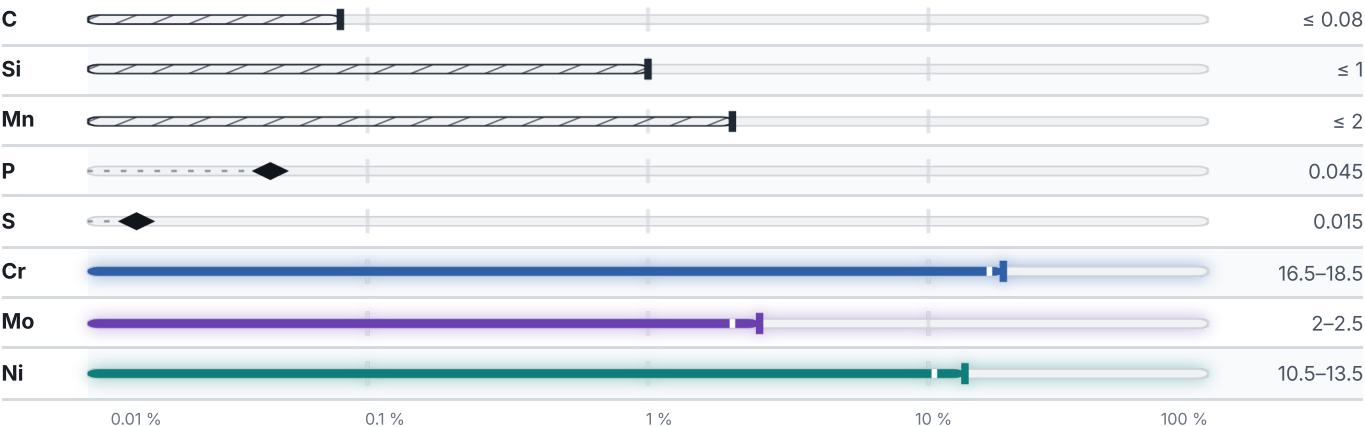
Chemical composition

Mass fraction in %

What this alloy is



Logarithmic scale, 0.01 % to 100 % — every value here compares directly, decade by decade.



The scale is logarithmic, not the element's raw share of the alloy — the only honest way to fit 0.01 % and 100 % in one picture, and it means every value here can be compared with every other.

Predicted transformation temperatures

This grade's composition falls outside the published model's validated range (a low-alloy composition window), so no transformation temperature is predicted here.

Mechanical properties

14 values across 4 conditions

CONDITION · DIMENSION	RM N/mm ²	A5 %	Z %	HB
Rolled stock hotrolled, GOST 1414-75	410	22	34	–
Rolled stock, GOST 1414-75	460–510	7	–	–
Rolled stock GOST 1414-75	–	–	–	160

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A %	HB	HRB	HV
Plate/Sheet Hot-rolled	520	205	40	–	–	–
Hot-rolled	–	–	–	187	90	200
SOFT ANNEALED						HB
Soft annealed						215
SOLUTION ANNEALED						HB
Solution annealed						210

Physical properties

13 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ^{^-6} /K	LAMBDA W/(m·K)	CP J/(kg·K)
20	7.83	198	–	–	–
100	–	183	11.9	78	470
200	–	–	12.5	67	–
300	–	166	–	–	479
400	–	–	13.6	–	517
500	–	–	14.2	–	–
600	–	–	–	–	571
PROPERTY	VALUE		UNIT		
Density	8		g/cm ³		
Elastic modulus	199		GPa		
Thermal expansion coefficient	15.7		10 ^{^-6} /K		
Thermal conductivity	15		W/(m·K)		
Specific heat capacity	500		J/(kg·K)		
Electrical resistivity	750		nΩ·m		

PROPERTY	VALUE	UNIT
Transformation point Ac1	735	°C
Transformation point Ac3	866	°C
Transformation point Ar3	840	°C
Transformation point Ar1	685	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	is not used.	
Flake sensitivity	predisposed	
Temper brittleness	not predisposed	

Heat treatment

1 regimes

STEP	TEMPERATURE	MEDIUM
Solution annealing	Temperature not stated	—

Designations across standards

72 designations · 2 documented as identical

Russia / CIS		12	United States		8
08Ch16N11M3T	gost		S31635		uns
08Ch17N13M2T	gost		316H		aisi-sae
08KH17N13M2T	gost		316Ti		aisi-sae
08X17H13M2T	gost		318		aisi-sae
08X17H13M2T	gost		S31635		aisi-sae
10Ch17N13M2T	gost	This grade's own name	A 182 Grade F316Ti		astm
10Ch17N13M3T	gost		A312		astm
10KH17N13M2T	gost		TP 316Ti		astm
10X17H13M2T	gost		France		6
10X17H13M2T	gost				
X17H13M2T	gost		Z6 CNDT 17.12		afnor
3N448	gost		Z6CNDNB17-12B		afnor
United Kingdom		9	Z6CNDT17-13		afnor
			Z6CNDT17-2		afnor
2 1	bs		Z6CNT17-12		afnor
320 S 31	bs		Z6NDT17-12		afnor
320S17	bs		China		6
320S18	bs				
321S12	bs		0Cr18Ni12Mo2Ti		gb
4 Ti	bs		0Cr18Ni12Mo3Ti		gb
58J	bs		1Cr18Ni12Mo2Ti		gb
EN58J	bs		1Cr18Ni12Mo3Ti		gb
S17EN58J	bs		Cr18Ni12Mo2T		gb
			OCr18Ni12Mo2Ti		gb

Spain		5	Sweden		3
F.310.B	une		2350	ss	
F.3535	une		2350-02	ss	
F.3552	une		2353	ss	
F.3552-X 6 CrNiMoTM 7-12-03	une		Czechia		3
X6CrNiMoTi17-12-2	une		17347	csn	
Japan		4	17347PH	csn	
316Ti	jis		17348	csn	
SUS 316Ti	jis		Austria		2
SUS 316TiTB	jis		X6CrNiMoi17-17-122S	onorm	
SUS 316TiTP	jis		X6CrNiMoTi17-12-2S	onorm	
Poland		4	Slovakia		1
H17N13M2T	pn		17 348	stn	
H17N13M2T H18N10MT	pn		Serbia		1
H17N13M2T lub H18N10MT	pn		Č.4574	srps	
H18N10MT	pn		former Yugoslavia		1
Europe		3	Č.4574	jus	
1.4571	din-en		Finland		1
X10CrNiMoTi18-10	din-en		761	sfs	
X6CrNiMoTi17-12-2	din-en	This grade's own name			
Italy		3			
X6CrNiMoTi 17 12 KG	uni				
X6CrNiMoTi 17 12 KW	uni				
X6CrNiMoTi1712	uni				

Note on use. The data is compiled to the best of our knowledge from publicly available standards and manufacturer documentation. It replaces neither material testing nor an inspection document to EN 10204. Please request a mill certificate to EN 10204 2.1, 3.1 or 3.2 together with your enquiry. The standard in its current valid edition always prevails.

Enquiry about 320S18

Quotation, availability, mill certificate or a technical question — directly on the material page.

Start an enquiry

DATASHEET ONLINE	GRADE SEARCH	MATERIAL NO.	ISSUED
View the material page	Search all grades	1.4571	Sep 8, 2026