

MATERIAL NUMBER 1.4301 · CLASS 1.4

A 312 Grade TP304

Material no. 1.4301

also listed as X 5 CrNi 18 9

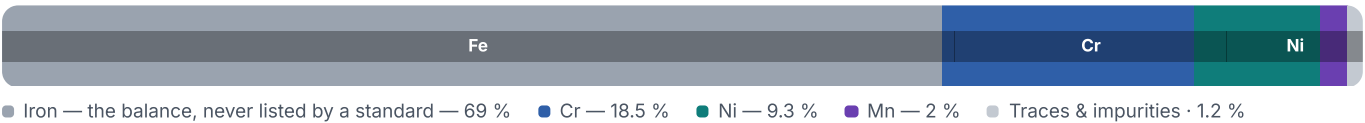
Chemical composition, mechanical and physical property values, and 170 standard designations from 22 regions.

DENSITY 7.9 g/cm³	OTHER DESIGNATIONS 170 in 22 regions	PROPERTY VALUES 10 on file
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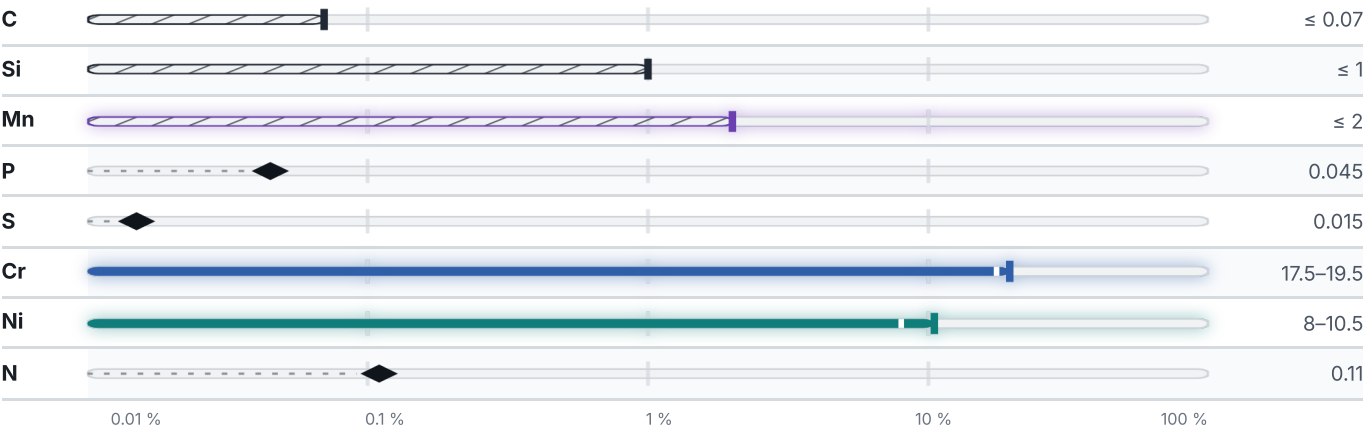
Chemical composition

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

Not enough recorded composition to predict a transformation temperature for this grade — missing: Mo.

Mechanical properties

37 values across 9 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	HB	
Pipe cooling strain, GOST 9941-81	529	–	37	–	–	
Pipe hot strain, GOST 9940-81	510	–	40	–	–	
Bar cold-worked , GOST 18907-73	880–930	–	–	–	–	
Bar, GOST 18907-73	640–780	–	20	–	–	
Forging, GOST 25054-81	470	196	38–40	45–50	–	
Sheet thin, GOST 5582-75	740–930	–	25	–	–	
Sheet thin cold-worked , GOST 5582-75	930	–	10	–	–	
08KH18N10 (08X18H10) , Forging GOST 25054-81	–	–	–	–	170	
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
COLD ROLLED						HV
Cold rolled						220–450
SOFT ANNEALED						HB
Soft annealed						215
SOLUTION ANNEALED						HB
Solution annealed						200
QUENCHING 1020 - 1100°C	RM N/mm ²	RE N/mm ²	A5 %	Z %		
Ø 60	470	196	40	55		
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %			
Sheet trick, GOST 7350-77	510	205	43			
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %			
Sheet thin, GOST 5582-75	510	185	45			
CONDITION · DIMENSION	RM N/mm ²	A5 %				
Sheet thin, GOST 4986-79	530	20–40				

Physical properties

2 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
20	7.85	196	–	17	–	800
100	–	–	16	–	504	–
200	–	–	17	–	–	–
300	–	–	17	–	–	–
400	–	–	18	–	–	–
500	–	–	18	–	–	–
PROPERTY	VALUE		UNIT			
Density	7.9		g/cm ³			

Technological properties

PROPERTY	VALUE	UNIT
Weldability	without limitations.	

Heat treatment

3 regimes

STEP	TEMPERATURE	MEDIUM
source joins the operations with (or)		
Quenching	Temperature not stated	—
Solution annealing	1010–1150 °C	Water
source joins the operations with (or)		
Quenching	Temperature not stated	—
Solution annealing	Temperature not stated	—
Solution annealing	Temperature not stated	—

Designations across standards

170 designations · 9 documented as identical

United States		75		
S30300		uns	A493	astm
S30400	This grade's own name	uns	A511	astm
S30403		uns	A554	astm
S30451	This grade's own name	uns	A580	astm
S30453		uns	A593	astm
S30500		uns	A632	astm
303		aisi-sae	A666	astm
30304		aisi-sae	A688	astm
304	This grade's own name	aisi-sae	A738	astm
304H		aisi-sae	A774	astm
304L		aisi-sae	A793	astm
304LN		aisi-sae	A813	astm
304N	This grade's own name	aisi-sae	A814	astm
305		aisi-sae	A836	astm
S30400		aisi-sae	A837	astm
A 182 Grade F304		astm	A851	astm
A 312 Grade TP304		astm	A879	astm
A 403 Grade WP304		astm	A880	astm
A 479 304	This grade's own name	astm	A899	astm
A1012		astm	A908	astm
A1022		astm	A924	astm
A1049		astm	A943	astm
A182		astm	A965	astm
A182 F 304	This grade's own name	astm	A988	astm
A193		astm	F1667	astm
A194		astm	F2215	astm
A213		astm	TP304	astm
A240		astm	TP304L	astm
A249		astm		
A269		astm		
A270		astm		
A276		astm		
A312		astm		
A313		astm		
A314		astm		
A320		astm		
A336		astm		
A358		astm		
A368		astm		
A376		astm		
A403		astm		
A409		astm		
A430		astm		
A473		astm		
A478		astm		
A479		astm		
A492		astm		
			United Kingdom	
			18	
			302 S 17	bs
			304 S 40	bs
			304S11	bs
			304S15	bs
			304S15 EN 58E	bs
			304S16	bs
			304S17	bs
			304S18	bs
			304S25	bs
			304S31	bs
			801	bs
			En 58 E	bs
			LW 13	bs
			LW 15	bs
			LW 21	bs
			LWCF 13	bs
			LWCF 15	bs
			LWCF 21	bs

United States / Aerospace		17	Russia / CIS		8
5501	ams		07Ch18N10		gost
5511	ams		08Ch18N10		gost
5513	ams		08KH18N10		gost
5560	ams		08X18H10		gost
5563	ams		08X18H10		gost
5564	ams		0X18H10		gost
5565	ams		PROKh18N10		gost
5566	ams		ct.08X18H10		gost
5567	ams				
5639	ams		Spain		6
5697	ams		F.3451		une
5857	ams		F.3451-X5CrNi18-10		une
5868	ams		F.3504		une
5910	ams		F.3541		une
5911	ams		F.3551		une
5912	ams		X5CrNi18-10		une
5913	ams				
Japan		11	China		4
SUS 304	jis		0Cr18Ni9		gb
SUS 304-CSP	jis		0Cr19Ni9		gb
SUS 304A	jis		0Cr19Ni9N		gb
SUS 304FB	jis		0Cr18Ni9		gb
SUS 304N1	jis				
SUS 304TB	jis		Europe		3
SUS 304TBS	jis		1.4301		din-en
SUS 304TKA	jis		X 5 CrNi 18 9 This grade's own name		din-en
SUS 304TKC	jis		X5CrNi18-10 This grade's own name		din-en
SUS 304TP	jis				
SUS F 304	jis		Sweden		3
			2332		ss
			2333		ss
			2333-02		ss
France		10			
304F00	afnor		Italy		2
AFNOT Z7CN18-09 This grade's own name	afnor				
X5CrNi18-10	afnor		X3CrNi18-10		uni
Z4CN19-10FF	afnor		X5CrNi18-10		uni
Z5CN17-08	afnor				
Z5CN18-09	afnor		Poland		2
Z5CN18-10	afnor		00H18N10		pn
Z5CN19-09	afnor		0H18N9		pn
Z6CN18.09	afnor				
Z7CN18-09	afnor		Austria		2
			X5CrNi18-10OS		onorm
			X5CrNi18-10S		onorm
			International		1
			X5CrNi18-10		iso

Czechia	1	former Yugoslavia	1
17240	csn	Č.4580	jus
Slovakia	1	Australia / New Zealand	1
17 240	stn	304	as-nzs
Brazil	1	Finland	1
304	abnt	725	sfs
Serbia	1	South Korea	1
Č.4580	srps	SUS304	ks

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 A 312 Grade TP304

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

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DATASHEET ONLINE

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ISSUED

Sep 8, 2026