

MATERIAL NUMBER 1.4028 · CLASS 1.4

3Cr13

Material no. 1.4028

also listed as X30Cr13

Chemical composition, mechanical and physical property values, and 67 standard designations from 17 regions.

DENSITY 7.7 g/cm³	OTHER DESIGNATIONS 67 in 17 regions	PROPERTY VALUES 14 on file
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Chemical composition

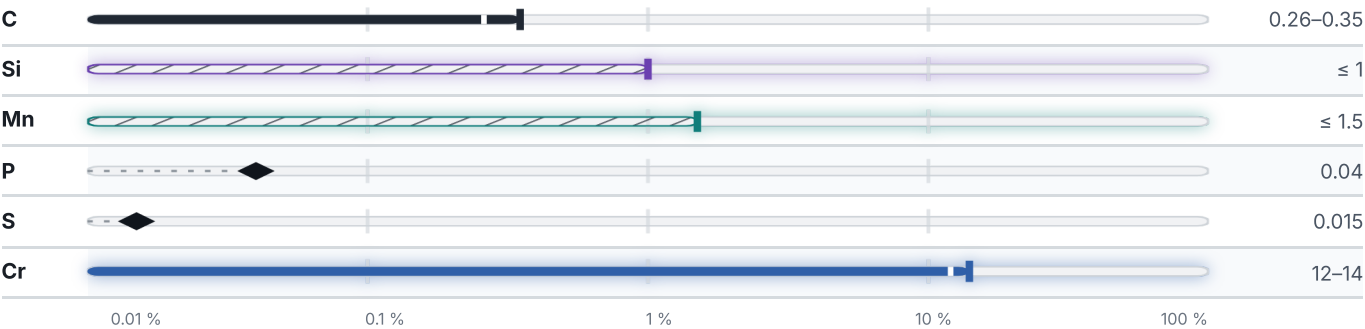
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 84.1 % ● Cr — 13 % ● Mn — 1.5 % ● Si — 1 % ● Traces & impurities · 0.4 %

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: Ni, Mo.

Mechanical properties

28 values across 6 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A %	Z %	AK J/cm ²	HB	HRC	HRB	HV
Plate/Sheet Hot-rolled	540	225	18	–	–	–	–	–	–
Bars/Rods	740	540	12	40	29	–	–	–	–
Hot-rolled	–	–	–	–	–	235	–	99	247
Quenched and tempered	–	–	–	–	–	–	40	–	–
CONDITION · DIMENSION			RM N/mm ²		A5 %			HB	
Bar, GOST 18907-73		530–780			12			–	
Wire, GOST 18143-72		590–830			12–16			–	
30KH13 (30X13) (quenching, tempering) , GOST 25054-81			–		–			235–277	
30KH13 (30X13) (annealing) , Bar GOST 5949-75			–		–			131–207	
SOFT ANNEALED			HB					HV	
Soft annealed			245					190–240	
QUENCHED AND TEMPERED								HV	
Quenched and tempered								500–540	
DRAWING 740 - 800°C					RM N/mm ²		A5 %		
1 - 4					540		17		
QUENCHING AND DRAWING	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²				
to 600	735	588	10–12	35–40	290–390				

Physical properties

8 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	7.67	223	–	–	–	522
100	7.65	–	9.98	26.4	473	595
200	7.62	214	10.65	27.2	502	684
300	7.6	206	11.13	27.7	540	769
400	7.57	197	11.7	27.7	582	858
500	7.54	185	11.83	27.2	653	935

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
600	7.51	174	12.3	26.7	749	1015
700	7.48	–	12.5	25.6	879	1099
800	7.45	–	12.6	25.1	783	–
900	7.46	–	–	26.7	657	–

PROPERTY	VALUE	UNIT
Density	7.7	g/cm ³
Transformation point Ac1	810	°C
Transformation point Ac3	860	°C
Transformation point Ar3	660	°C
Transformation point Ar1	710	°C

Technological properties

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

Heat treatment

2 regimes

STEP	TEMPERATURE	MEDIUM
source joins the operations with (or)		
Annealing	Temperature not stated	—
Tempering	Temperature not stated	—
source joins the operations with + / procedural order		
Quenching	Temperature not stated	—
Solution annealing	Temperature not stated	—
Tempering	Temperature not stated	—
Ageing	Temperature not stated	—

Designations across standards

67 designations · 2 documented as identical

United States		23	United Kingdom		5
S42000		uns	420 S 45		bs
S42020		uns	420 S 45 En56D		bs
420		aisi-sae	420S37		bs
420F		aisi-sae	En 56 C		bs
51420		aisi-sae	En56D		bs
51420F		aisi-sae			
S42000		aisi-sae	Spain		3
S42020		aisi-sae	F.3403		une
A1049		astm	F.3403-X30Cr 13		une
A176		astm	X30Cr13		une
A182		astm			
A276		astm	United States / Aerospace		3
A314		astm	5506		ams
A473		astm	5620		ams
A484		astm	5621		ams
A580		astm			
A582		astm	Sweden		3
A895		astm	2304		ss
F1079		astm	2304-03		ss
F116		astm	SIS 2304		ss
F1613		astm			
F2215		astm	China		2
F899		astm	3Cr13		gb
			Y3Cr13		gb
France		6	Italy		2
410F21		afnor	GX30Cr13		uni
Z20C13		afnor	X30Cr13		uni
Z20Cr13		afnor			
Z30C13		afnor	Poland		2
Z30Cr13		afnor	3H13		pn
Z33C13		afnor	3H14		pn
Japan		6	Europe		1
420J2	This grade's own name	jis	X30Cr13	This grade's own name	din-en
SUS 420F		jis			
SUS 420J2		jis			
SUS 420J2-CSP		jis	Czechia		1
SUS 420J2FB		jis	17023		csn
SUS 420J2TKA		jis			
Russia / CIS		6	Slovakia		1
30Ch13		gost	17 023		stn
30KH13		gost			
30X13		gost	Brazil		1
30X13		gost	420		abnt
3X13		gost			
CT.30X13		gost	Serbia		1
			Č.4173		srps

former Yugoslavia	1
Č.4173	jus

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 3Cr13

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	1.4028	Sep 8, 2026