

MATERIAL NUMBER 1.0511 · CLASS 1.0

FR38

Material no. 1.0511

also listed as C40

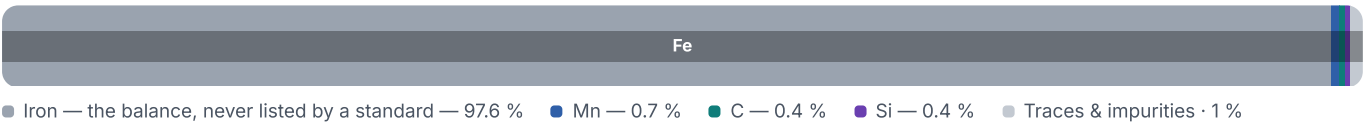
Chemical composition, mechanical and physical property values, and 63 standard designations from 21 regions.

DENSITY 7.85 g/cm³	OTHER DESIGNATIONS 63 in 21 regions	PROPERTY VALUES 9 on file
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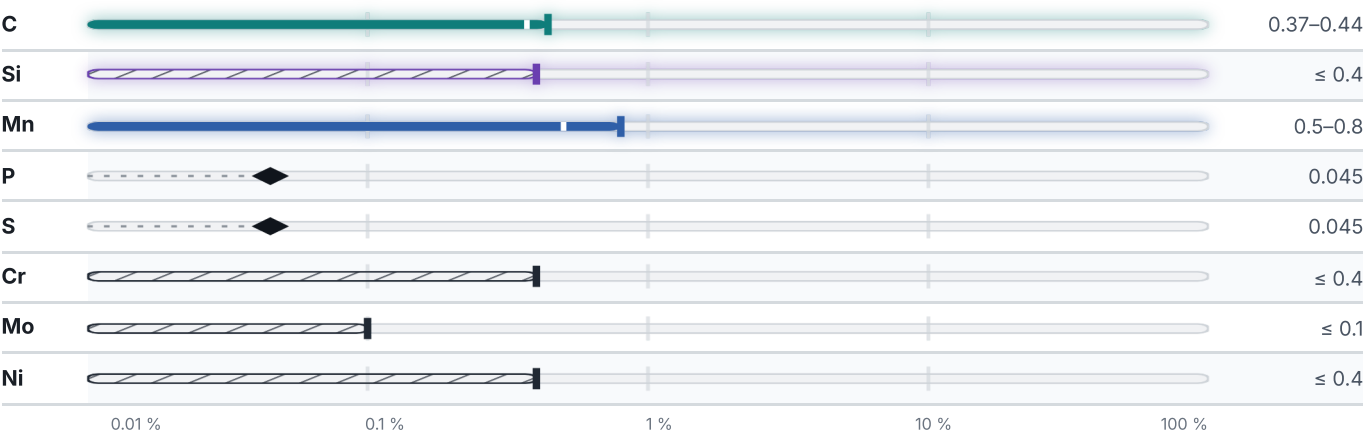
Chemical composition

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

computed from composition · °C

PREDICTED AE3 774 °C	PREDICTED AE1 724 °C	PREDICTED ACM 603 °C	PREDICTED BS 560 °C
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Mechanical properties

17 values across 3 conditions

COLD DRAWN / HARD	RM N/mm ²	A %
5 – 10	700–1000	6
10 – 16	650–980	7
16 – 40	620–920	8
40 – 63	590–840	9
63 – 100	550–820	9
NORMALIZED	RM N/mm ²	A %
≤ 16	580	16
16 – 100	550	17
100 – 250	530	17
AS ROLLED AND TURNED	HB	
As rolled and turned	163–211	

Physical properties

1 values

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³

Designations across standards

63 designations · 3 documented as identical

France		12	United Kingdom		8
2C40	afnor		060A40		bs
AF60C40	afnor		070M40		bs
AF60C45	afnor		080A40		bs
C40E	afnor		080M40		bs
CC40	afnor		C40		bs
FR38	afnor		C40E		bs
XC 42	afnor		CS40		bs
XC3841	afnor		En8		bs
XC38H1	afnor				
XC42H1	afnor		United States		6
XC42HI	afnor		G10400	This grade's own name	uns
XP42HI	afnor		1038		aisi-sae
			1040	This grade's own name	aisi-sae
			1042		aisi-sae
			G10400		aisi-sae
			G10420		aisi-sae

Poland	5	Russia / CIS	2
40	pn	40	gost
40A	pn	ст.40	gost
40rs	pn		
D40	pn	Sweden	2
P40	pn	1555	ss
		1650	ss
Japan	4	Australia / New Zealand	2
S 40C	jis	1040	as-nzs
S43C	jis	M1040	as-nzs
SWRCH38K	jis		
SWRCH40K	jis		
Europe	3	Romania	2
1.0511	din-en	OLC40	stas
C40 This grade's own name	din-en	OLC40X	stas
Ck40	din-en	Bulgaria	2
Italy	3	40	bds
C40	uni	C40E	bds
C40E	uni	Czechia	1
C40R	uni	12041	csn
Spain	2	Slovakia	1
C40E	une	12 041	stn
F.114.A	une	Serbia	1
International	2	Č.1540	srps
C40	iso	Hungary	1
C40E4	iso	C40E	msz
China	2	Belgium	1
40	gb	C40-2	nbn
ML40	gb	South Korea	1
		SM40C	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 FR38

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

[Start an enquiry](#)

DATASHEET ONLINE

View the material page

GRADE SEARCH

Search all grades

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ISSUED

Aug 20, 2026