

MATERIAL NUMBER 1.1191 · CLASS 1.1

A 194 Gr. 2

Material no. 1.1191

also listed as C45E

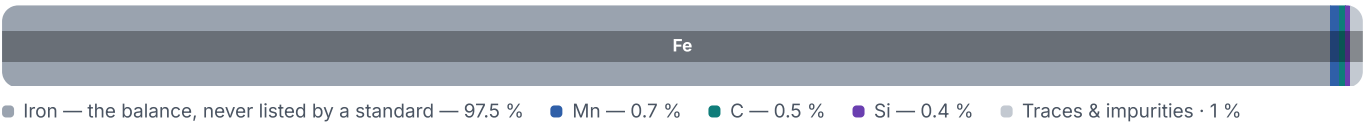
Chemical composition, mechanical and physical property values, and 39 standard designations from 20 regions.

DENSITY 7.7 g/cm ³	OTHER DESIGNATIONS 39 in 20 regions	PROPERTY VALUES 9 on file
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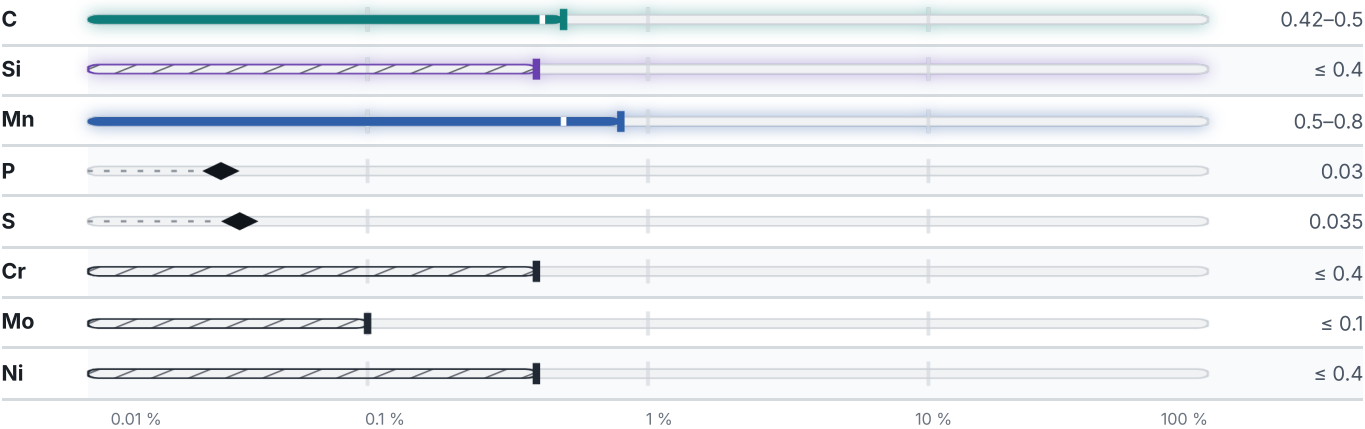
Chemical composition

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 764 °C	PREDICTED AE1 724 °C	PREDICTED ACM 637 °C	PREDICTED BS 556 °C
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Mechanical properties

38 values across 9 conditions

NORMALIZED	RM N/mm ²	A %	
≤ 16	620	14	
16 – 100	580	16	
100 – 250	560	16	
250 – 500	540	–	
500 – 1000	530	–	
COLD DRAWN / HARD	RM N/mm ²	A %	
5 – 10	750–1050	5	
10 – 16	710–1030	6	
16 – 40	650–1000	7	
40 – 63	630–900	8	
63 – 100	580–850	8	
QUENCHED AND TEMPERED	REH N/mm ²	RM N/mm ²	A %
≤ 8	490	700	14
8 – 20	430	650	16
20 – 50	370	630	17
50 – 80	340	600	17
SOFT ANNEALED	RM N/mm ²	A80 %	
0.3 – 3	570	18	
COLD ROLLED	RM N/mm ²		
0.3 – 3	1020		
TREATED TO IMPROVE SHEARABILITY	HB		
Treated to improve shearability	255		
SOFT ANNEALED	HB	HV	
Soft annealed	207	180	
AS ROLLED AND TURNED	HB		
As rolled and turned	172–242		

COLD ROLLED	HV
Cold rolled	290

Physical properties

1 values

PROPERTY	VALUE	UNIT
Density	7.7	g/cm ³

Designations across standards

39 designations · 10 documented as identical

United States	8	Sweden	2
G10420 This grade's own name	uns	1672	ss
G10450 This grade's own name	uns	SIS 1672 This grade's own name	ss
H10450 This grade's own name	uns	International	1
1042 This grade's own name	aisi-sae	C45E4	iso
1045 This grade's own name	aisi-sae	Japan	1
1045H This grade's own name	aisi-sae	S45C	jis
A 194 Gr. 2 This grade's own name	astm	Russia / CIS	1
A830	astm	45	gost
France	4	Italy	1
XC42	afnor	C45	uni
XC42H1	afnor	Czechia	1
XC45	afnor	12050	csn
XC48H1	afnor	Brazil	1
Europe	3	1045	abnt
1.1191	din-en	Latin America	1
C45E This grade's own name	din-en	1045	copant
Ck 45 This grade's own name	din-en	Slovakia	1
United Kingdom	3	12 050	stn
060A47	bs	Poland	1
080M46	bs	45	pn
CFS8	bs	Croatia	1
Spain	3	Č.1531	hrn
C45K	une	Hungary	1
F.1140-C45k	une	C 45	msz
F1140	une		
China	3		
45	gb		
45H	gb		
Ck45	gb		

Australia / New Zealand		1	Finland		1
K1045	as-nzs		C45	sfs	

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 194 Gr. 2

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	1.1191	Sep 8, 2026