

MATERIAL NUMBER 1.1201 · CLASS 1.1

C45R

Material no. 1.1201

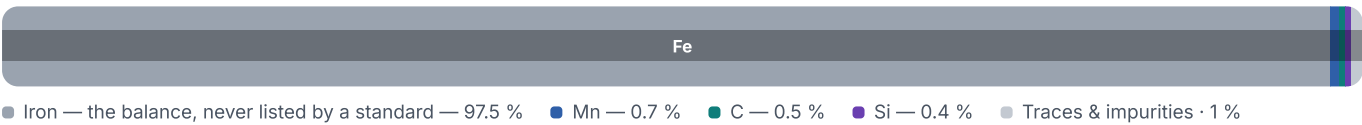
Chemical composition, mechanical and physical property values, and 22 standard designations from 10 regions.

DENSITY	OTHER DESIGNATIONS	PROPERTY VALUES
7.7 g/cm³	22 in 10 regions	9 on file

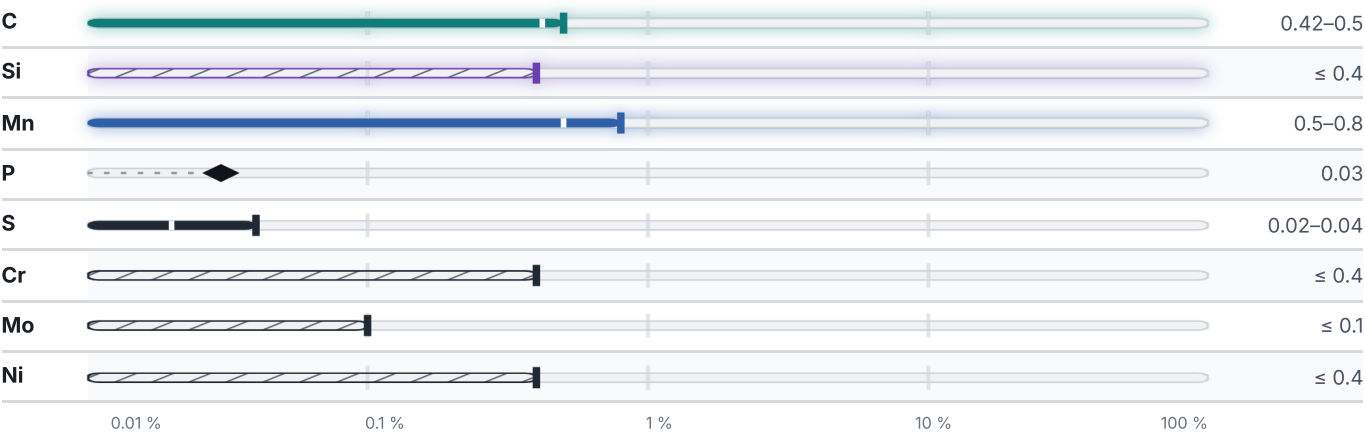
Chemical composition

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

Mechanical properties

19 values across 5 conditions

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
NORMALIZED	RM N/mm ²	A %
≤ 16	620	14
16 – 100	580	16
100 – 250	560	16
TREATED TO IMPROVE SHEARABILITY	HB	
Treated to improve shearability	255	
SOFT ANNEALED	HB	
Soft annealed	207	
AS ROLLED AND TURNED	HB	
As rolled and turned	172–242	

Physical properties

1 values

PROPERTY	VALUE	UNIT
Density	7.7	g/cm ³

Designations across standards

22 designations · 6 documented as identical

United States		5	Spain		4
G10450	This grade's own name	uns	C45K1		une
G10490	This grade's own name	uns	F.1145-C45k		une
1045	This grade's own name	aisi-sae	F1145		une
1049	This grade's own name	aisi-sae	F1145(1)		une
A830		astm	France		3
			C45R		afnor
			XC42H1		afnor
			XC48H1u		afnor

Europe	2	Japan	1
C45R This grade's own name	din-en	S50C	jis
Cm 45 This grade's own name	din-en		
United Kingdom	2	China	1
		50	gb
O80M46	bs	Italy	1
O80M50 C50 C50E C50R	bs		
International	2	C45	uni
C45M2	iso	Sweden	1
C50 C50E4 C50M2	iso	1660	ss

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 C45R

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	1.1201	Aug 20, 2026