

MATERIAL NUMBER 1.8159 · CLASS 1.8

50ChGFA

Material no. 1.8159

also listed as 50CrV4

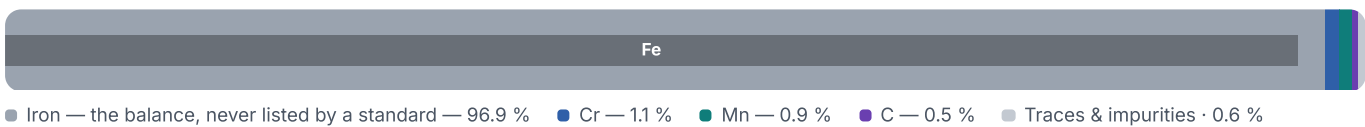
Chemical composition, mechanical and physical property values, and 73 standard designations from 26 regions.

DENSITY 7.7 g/cm³	OTHER DESIGNATIONS 73 in 26 regions	PROPERTY VALUES 15 on file
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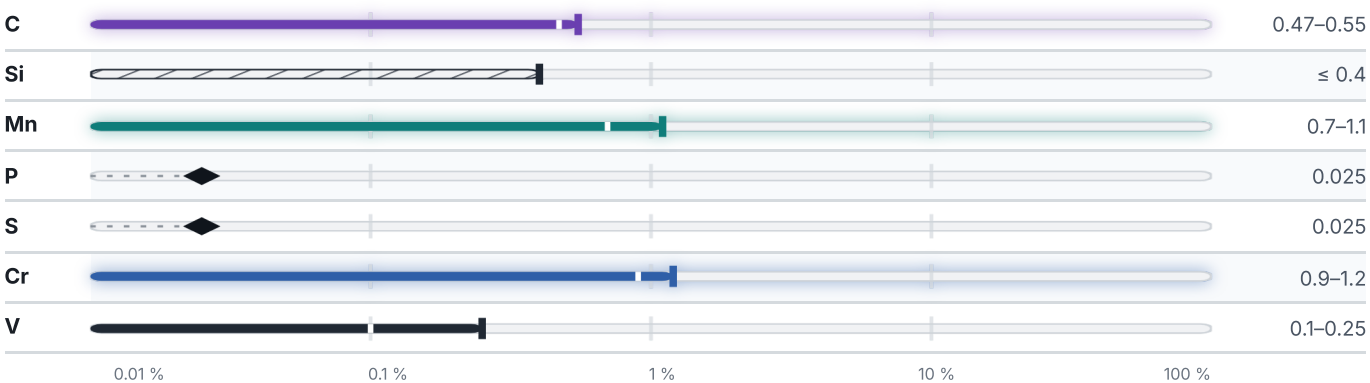
Chemical composition

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: Ni, Mo.

Mechanical properties

13 values across 4 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %
Bar	1300	1100	10	45
Rolled stock, GOST 14959-79	1270	1080	8	35
CONDITION · DIMENSION				HB
(without heat treatment) , Rolled stock GOST 14959-79				302
(heat treatment) , Rolled stock GOST 14959-79				269
CONDITION · DIMENSION				A5 %
0.1 - 4				8
CONDITION · DIMENSION				RM N/mm ²
0.1 - 4				780-1180

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	7.8	218	–	40	–	320
100	7.78	215	11.7	39	490	–
200	7.75	210	12.2	38	505	–
300	7.72	200	12.9	37	510	–
400	7.68	188	13.5	36	530	–
500	7.65	178	14	33	560	–
600	7.61	160	14.4	31	580	–
700	–	142	14.6	29	620	–
800	–	132	13.1	28	700	–
PROPERTY			VALUE	UNIT		
Density			7.7	g/cm ³		
Transformation point Ac1			752	°C		
Transformation point Ac3			788	°C		
Transformation point Ar3			746	°C		
Transformation point Ar1			688	°C		

Technological properties

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

Designations across standards

73 designations · 8 documented as identical

United States	9	Spain	4
G61500 This grade's own name	uns	51CrV4	une
H61500 This grade's own name	uns	CrV4	une
6145 This grade's own name	aisi-sae	F.1430-51	une
6150 This grade's own name	aisi-sae	F1430	une
6150H This grade's own name	aisi-sae		
G41500	aisi-sae	Italy	4
G61500	aisi-sae	48Si7	uni
H61500	aisi-sae	50CrV4	uni
A331	astm	51CrMnV4KU	uni
		51CrV4	uni
United Kingdom	7		
51CrV4	bs	Hungary	4
735A30	bs	51CrV4	msz
735A50	bs	CrV 3	msz
735A51	bs	CrV3Z	msz
735A54	bs	SZ2	msz
735h51	bs		
EN 47	bs	Europe	3
		1.8159	din-en
France	7	50CrV4 This grade's own name	din-en
50CrV4	afnor	51CrV4 This grade's own name	din-en
50CrV4RR	afnor		
50CV4	afnor	Japan	3
50CrV4	afnor	SCM445H	jis
51CrV4	afnor	SUP10	jis
51CrV4	afnor	SUP10-CSP	jis
55CrV4	afnor		
Russia / CIS	7	Romania	3
50ChFA	gost	51VCr11A	stas
50HFA	gost	51VMnCr11	stas
50KHFA	gost	51VMnCr11AT	stas
50KHGFA	gost		
50KHGFA	gost	Bulgaria	3
50XΦA	gost	50ChFA	bds
50XΦA	gost	50ChGFA	bds
		51CrV4	bds

China	2	Slovakia	1
50CrVA	gb	15 260	stn
50CrVA	gb		
Sweden	2	Latin America	1
2230	ss	6150	copant
SIS 14 2230 This grade's own name	ss	Brazil	1
Poland	2	6151	abnt
50HF	pn	Serbia	1
50HS	pn	Č.4830	srps
Australia / New Zealand	2	Croatia	1
6150	as-nzs	Č.4830	hrn
6150H	as-nzs	Türkiye	1
International	1	Ç 6150	mke
51CrV4	iso	Belgium	1
United States / Aerospace	1	50CrV4	nbn
6448	ams	South Korea	1
Czechia	1	SPS6	ks
15260	csn		

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 50ChGFA

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

Sep 8, 2026