

MATERIAL NUMBER 1.7131 · CLASS 1.7

1.7131

Chemical composition, mechanical and physical property values, and 78 standard designations from 23 regions.

DENSITY 7.76 g/cm³	OTHER DESIGNATIONS 78 in 23 regions	PROPERTY VALUES 14 on file
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Chemical composition

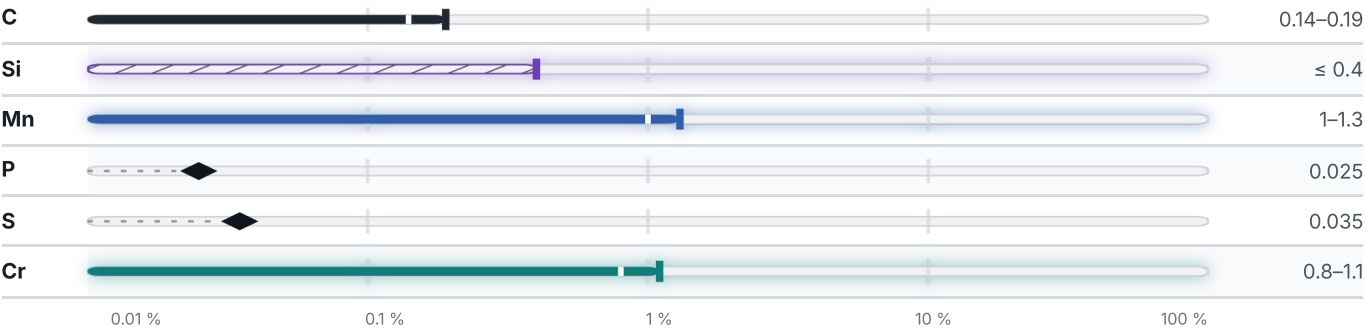
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 97.3 % ● Mn — 1.2 % ● Cr — 1 % ● Si — 0.4 % ● Traces & impurities · 0.2 %

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

24 values across 8 conditions

QUENCHING 850°C, OIL, DRAWING 200°C, AIR	RM N/mm²	RE N/mm²	A5 %	Z %	KCU kJ/m²
5	1520	1320	12	50	720
20	980	730	15	55	1130

CONDITION · DIMENSION					HB
(annealing) , GOST 4543-71					217
(cold-worked) , GOST 4543-71					229
SOFT ANNEALED		HB	HRB	HV	
Soft annealed		207	84	170	
TREATED TO HARDNESS RANGE					HB
Treated to hardness range					156–207
TREATED TO FERRITE-PEARLITE STRUCTURE AND HARDNESS RANGE					HB
Treated to ferrite-pearlite structure and hardness range					140–187
NORMALIZED					HB
Normalized					138–187
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Bar, GOST 4543-71	980	885	9	50	780
CONDITION · DIMENSION					RM N/mm ²
200					1000

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)
20	7.8	211	–	37	–
100	–	205	10	38	495
200	–	197	11.5	38	508
300	–	191	12.3	37	525
400	–	176	12.8	35	537
500	–	168	13.3	34	567
600	–	155	13.6	31	588
700	–	136	–	30	626
800	–	129	–	29	705

PROPERTY	VALUE	UNIT
Density	7.76	g/cm ³
Transformation point Ac1	740	°C
Transformation point Ac3	825	°C
Transformation point Ar3	730	°C
Transformation point Ar1	650	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	without limitations.	
Flake sensitivity	not predisposed	
Temper brittleness	weakly predisposed	

Heat treatment

2 regimes

STEP	TEMPERATURE	MEDIUM
source joins the operations with + / procedural order		
Quenching	Temperature not stated	—
Tempering	Temperature not stated	—
Carburizing	Temperature not stated	—

Designations across standards

78 designations · 6 documented as identical

United States		11	Russia / CIS		8
G51150	This grade's own name	uns	18ChG		gost
G51170	This grade's own name	uns	18KHG		gost
G51200		uns	18KHGT		gost
5115	This grade's own name	aisi-sae	18YuA		gost
5117	This grade's own name	aisi-sae	18XГ		gost
5120		aisi-sae	Sv-18KhGS		gost
G51150		aisi-sae	Sv-18KhMA		gost
G51200		aisi-sae	ct.18XГ		gost
H51200		aisi-sae			
SAE5115		aisi-sae	United Kingdom		6
SA-29 Grade 5115		astm	16MnCr5		bs
			20MnCr5		bs
			527M17		bs
			527M20		bs
			590H17		bs
			590M17		bs

Spain	5
16MnCr5	une
20MnCr5	une
F.1515	une
F.1515-16MnCr5	une
F.1516	une
International	5
16MnCr5	iso
16MnCrS5	iso
20MnCr5	iso
20MnCrS5	iso
21MnCr5	iso
China	5
15CrMn	gb
16MnCr	gb
18CrMn	gb
20CrMn	gb
20CrMnTi	gb
France	4
16MC4	afnor
16MC5	afnor
16MnCr5RR	afnor
20MC5	afnor
Sweden	4
2127	ss
2173	ss
2511	ss
SIS 14 2127	ss
Czechia	4
14220	csn
14221	csn
14222	csn
14223	csn
Poland	4
15HG	pn
16HG	pn
18HGT	pn
20HG	pn

Romania	4
17MnCr10	stas
18MnCr10q	stas
18MnCr11	stas
20MnCr12	stas
Europe	2
1.7131	din-en
16MnCr5	This grade's own name din-en
Japan	2
SMnC420	jis
SMnC420H	jis
Italy	2
16MnCr5	uni
20MnCr5	uni
Hungary	2
BC3	msz
BC3Z	msz
Australia / New Zealand	2
5120	as-nzs
5120H	as-nzs
Bulgaria	2
16ChG	bds
18ChG	bds
Slovakia	1
14 220	stn
Latin America	1
5115	copant
Serbia	1
Č.4320	srps
Belgium	1
16MnCr5	nbn
Finland	1
20MnCr5	sfs
South Korea	1
SMnC420H	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 1.7131
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ISSUED
Aug 20, 2026