

MATERIAL NUMBER 1.3505 · CLASS 1.3

EN31

Material no. 1.3505

also listed as 100Cr6

Chemical composition, mechanical and physical property values, and 61 standard designations from 21 regions.

DENSITY

7.8 g/cm³

OTHER DESIGNATIONS

61 in 21 regions

PROPERTY VALUES

17 on file

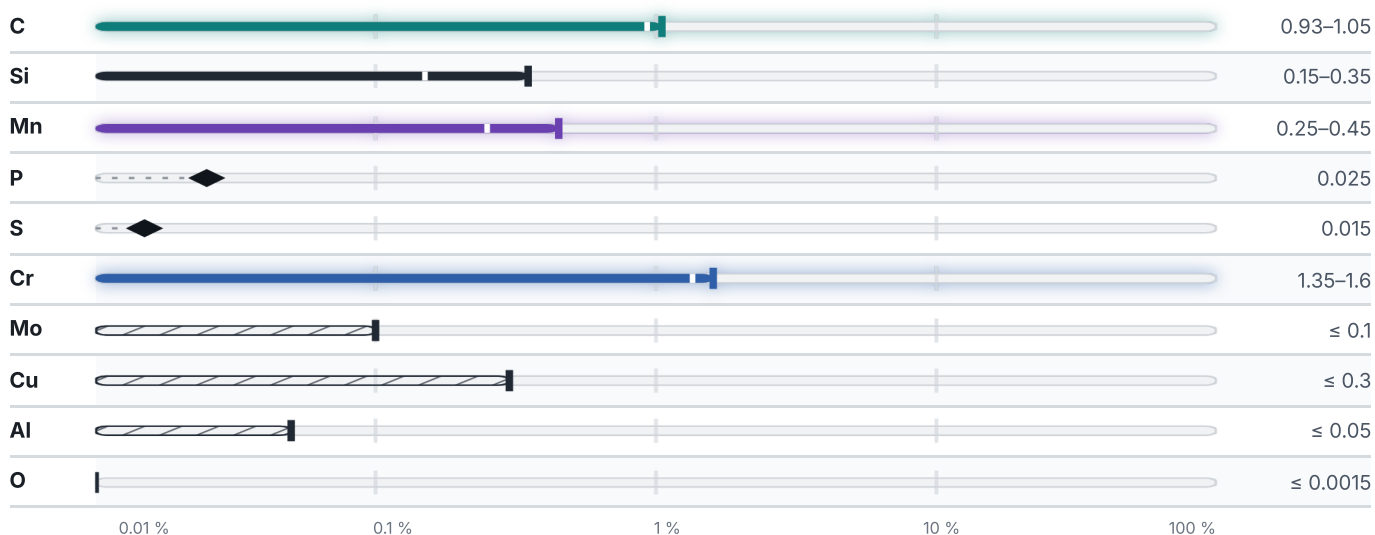
Chemical composition

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

Not enough recorded composition to predict a transformation temperature for this grade — missing: Ni.

Mechanical properties

6 values across 2 conditions

QUENCHING 850°C, OIL, DRAWING 600°C, AIR	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 25	620	370	15	40	490
CONDITION · DIMENSION					HB
(annealing) , GOST 4543-71					229

Physical properties

7 values

PROPERTY	VALUE	UNIT
Density	7.8	g/cm ³
Transformation point Ac1	715	°C
Transformation point Ac3	735	°C
Transformation point Ar3	710	°C
Transformation point Ar1	635	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	hard weldability.	
Temper brittleness	weakly predisposed	

Heat treatment

5 regimes

STEP	TEMPERATURE	MEDIUM
Quenching	Temperature not stated	—
Quenching	830–860 °C	Oil
Annealing	Temperature not stated	—
Spheroidize annealing	Temperature not stated	—
Annealing	Temperature not stated	—

Designations across standards

61 designations · 4 documented as identical

United States		13	Poland		3
AMS 6440		uns	LH15		pn
G52985		uns	ŁH15		pn
G52986		uns	NC4		pn
G52986 / G52950		uns			
J19965	This grade's own name	uns	Europe		2
K23080		uns	1.3505		din-en
S-22141		uns	100Cr6	This grade's own name	din-en
52100		aisi-sae	International		2
ASTM 52100		aisi-sae	100Cr6		iso
E52100		aisi-sae	3505		iso
G52986		aisi-sae			
J19965		aisi-sae	United States / Aerospace		2
A646		astm	6440		ams
			6444		ams
Russia / CIS		7	Japan		2
Šch15		gost	SUJ2		jis
SchCh15	This grade's own name	gost	SUJ4		jis
ShCh15		gost	Czechia		2
SHKH15		gost	14100		csn
ШХ15		gost	14109		csn
ШХ15-В		gost	Romania		2
ШХ15-Ш		gost	RUL1		stas
			RUL1v		stas
United Kingdom		5	South Korea		2
2S135		bs	STB2		ks
534A99		bs	STB4		ks
535A99	This grade's own name	bs	Italy		1
EN31		bs	100Cr6		uni
S135		bs	Sweden		1
Spain		5	2258		ss
100		une	Slovakia		1
100Cr6		une	14 109		stn
Cr6		une	Latin America		1
F.131		une	52100		copant
F.1310		une	Hungary		1
China		4	GO3		msz
45G		gb			
Cr2		gb			
GCr15		gb			
Gr15		gb			
France		3			
100C6		afnor			
100Cr6		afnor			
100Cr6RR		afnor			

Australia / New Zealand		1	Bulgaria		1
5210	as-nzs		SchCh15		bds

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 EN31

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	1.3505	Sep 8, 2026