

MATERIAL NUMBER 1.6511 · CLASS 1.6

110

Material no. 1.6511

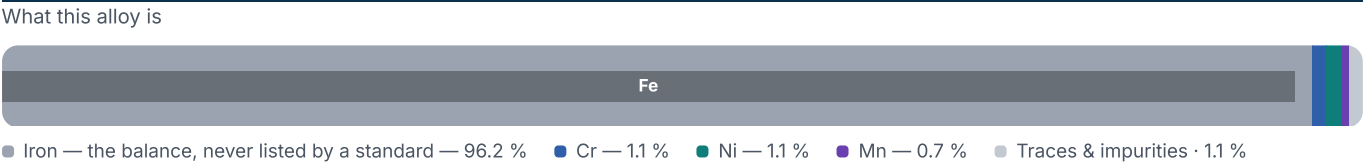
also listed as 36CrNiMo4

Chemical composition, mechanical and physical property values, and 91 standard designations from 17 regions.

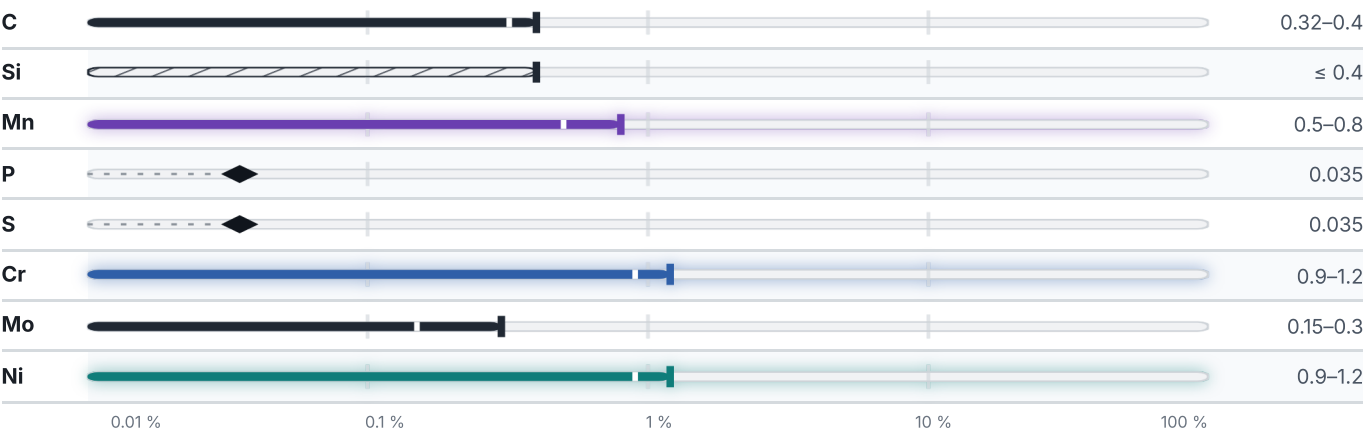
DENSITY 7.85 g/cm³	OTHER DESIGNATIONS 91 in 17 regions	PROPERTY VALUES 16 on file
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Chemical composition

Mass fraction in %



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 766 °C	PREDICTED AE1 731 °C	PREDICTED ACM 607 °C	PREDICTED BS 515 °C
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Mechanical properties

39 values across 5 conditions

QUENCHED AND TEMPERED	REH N/mm ²	RM N/mm ²	A %
≤ 8	900	1100	10
8 – 20	800	1000	11
20 – 50	700	900	12
50 – 80	600	800	13
≤ 160	–	750	14
160 – 330	–	700	15
330 – 660	–	650	16

QUENCHING 820°C, WATER, DRAWING 600°C, WATER	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 50	770	590	18	57	680
Ø 75	730	540	18	54	590
Ø 100	720	490	18	56	290

QUENCHING AND DRAWING	RM N/mm ²	RE N/mm ²	A5 %	Z %
Ø 25	660	380	12	40

CONDITION · DIMENSION	HB
(annealing) , GOST 4543-71	217

SOFT ANNEALED	HB
Soft annealed	241

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa
20	7.8	212

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³
Transformation point Ac1	713	°C
Transformation point Ac3	780	°C
Transformation point Ar3	710	°C
Transformation point Ar1	627	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	hard weldability.	
Flake sensitivity	predisposed	
Temper brittleness	predisposed	

Designations across standards

91 designations · 3 documented as identical

Russia / CIS	31	United Kingdom	10
36ChNM	gost	110	bs
36KhNM	gost	34CrNiMo6	bs
40G2	gost	36NiCrMo4	bs
40KhN2L	gost	708M40	bs
40KHN2MA	gost	816M40	bs
40KHN2MA	gost	817A37	bs
40KHN2SMA-VD	gost	817M37	bs
40KhN2VA	gost	817M40	bs
40KHSN2MA	gost	818M40	bs
40XH2MA	gost	EN 110	bs
40XH2MA-Ш	gost		
40XHBA	gost	United States	9
40XHMA	gost	G43400	uns
EI-643-VD	gost	G98400 This grade's own name	uns
PK40G2	gost	4340	aisi-sae
PK40Kh2	gost	9840 This grade's own name	aisi-sae
PK40KhN2G	gost	G43400	aisi-sae
PK40N2M	gost	G43406	aisi-sae
ПК40Г2-7.4	gost	G98400	aisi-sae
ПК40Н2М-6.4	gost	Gr.9840	aisi-sae
ПК40Н2М-6.8	gost	A829	astm
ПК40Н2М-7.2	gost		
ПК40Н2М-7.6	gost	France	7
ПК40Х2-6.4	gost	35NCD2	afnor
ПК40Х2-6.8	gost	35NCD5	afnor
ПК40Х2-7.4	gost	35NCD6	afnor
ПК40ХН2Г-6.4	gost	36CrNiMo4	afnor
ПК40ХН2Г-6.8	gost	36NiCrMo4	afnor
ПК40ХН2Г-7.4	gost	40NCD3	afnor
ст.40ХН2МА	gost	42CD4TS	afnor
ЭИ643-ВД	gost		
		Italy	6
		35NiCrMo6KB	uni
		36NiCrMo4	uni
		38NiCrMo4	uni
		38NiCrMo4KB	uni
		40NiCrMo7	uni
		KB	uni

Spain	5	Europe	2
35NiCrMo4	une	1.6511	din-en
36CrNiMo4	une	36CrNiMo4	This grade's own name din-en
42CrMo4	une		
F.1280	une	Poland	2
F.1280-35NiCrMo4	une	36HNM	pn
		40HNMA	pn
United States / Aerospace	5		
6359	ams	Bulgaria	2
6409	ams	36CrNiMo4	bds
6414	ams	40ChN2MA	bds
6415	ams		
6454	ams	International	1
		36CrNiMo4	iso
Czechia	4		
16 XXX NN	csn	Serbia	1
16341	csn	Č.5430	srps
16342	csn		
16343	csn	Hungary	1
		36CrNiMo4	msz
Japan	3		
SCNM439	jis	Australia / New Zealand	1
SNCM439	jis	4340	as-nzs
SNCM447	jis		
		Romania	1
		T35MoCrNi08	stas

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 110

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1.6511

ISSUED

Aug 20, 2026