

MATERIAL NUMBER 1.0501 · CLASS 1.0

40GR

Material no. 1.0501

also listed as C35

Chemical composition, mechanical and physical property values, and 123 standard designations from 23 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 123 in 23 regions	PROPERTY VALUES 18 on file
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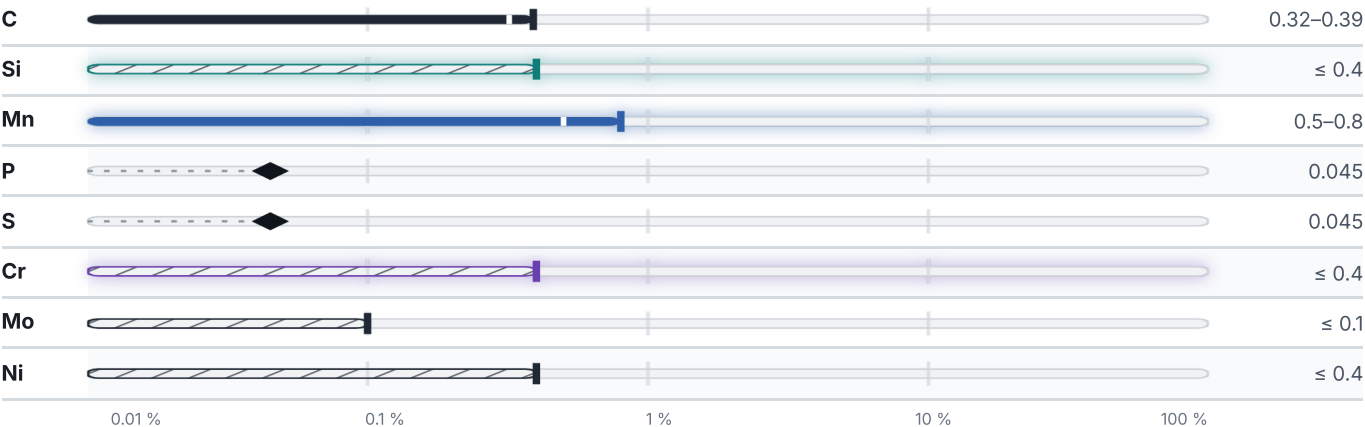
Chemical composition

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

computed from composition · °C

PREDICTED AE3 783 °C	PREDICTED AE1 724 °C	PREDICTED ACM 572 °C	PREDICTED BS 563 °C
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Mechanical properties

48 values across 9 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	HB
Pipe hotrolled	600	340	16	–	–
Rolled stock cold-worked , GOST 1050-88	610	–	6	35	–
Rolled stock annealed , GOST 1050-88	510	–	14	40	–
Band annealed , GOST 2284-79	440–690	–	14	–	–
Band cold-worked , GOST 2284-79	690–1030	–	–	–	–
Sheet GOST 4041-71	–	–	–	–	167
Rolled stock GOST 1050-88	–	–	–	–	241
NORMALIZED	RM N/mm ²		A %		
≤ 16	550		18		
16 – 100	520		19		
100 – 250	500		19		
250 – 500	480		–		
500 – 1000	470		–		
COLD DRAWN / HARD	RM N/mm ²		A %		
5 – 10	650–1000		6		
10 – 16	600–950		7		
16 – 40	580–880		8		
40 – 63	550–840		9		
63 – 100	520–800		9		
AS ROLLED AND TURNED					HB
As rolled and turned					154–207
CONDITION · DIMENSION	RM N/mm ²		A5 %		
4 - 14	510–660		21		
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %		
Pipe cold-rolled	580	320	17		

CONDITION · DIMENSION		RM N/mm ²	Z %	
Bar cold-drawn , GOST 10702-78		590	40	
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %
to 80	570	335	19	45
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %
6 - 60	570	335	19	45

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	7.85	213	–	51.5	483	160
100	–	210	11.9	50.6	486	221
200	–	198	12.7	48.1	497	296
300	–	190	13.5	45.6	512	387
400	–	185	14.05	41.9	529	493
500	–	179	14.5	38.1	550	619
600	–	167	14.9	33.5	574	766
700	–	160	15.15	30	628	932
800	–	–	12.5	24.8	674	1110
900	–	–	13.5	25.7	657	1150
1000	–	–	14.5	26.9	653	1180
1100	–	–	15.2	28	649	1207
1200	–	–	15.8	29.5	649	1230

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³
Transformation point Ac1	724	°C
Transformation point Ac3	790	°C
Transformation point Ar3	760	°C
Transformation point Ar1	680	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	limited weldability.	
Flake sensitivity	not predisposed	
Temper brittleness	not predisposed	

Heat treatment

1 regimes

STEP	TEMPERATURE	MEDIUM
Annealing	Temperature not stated	—

Designations across standards

123 designations · 7 documented as identical

Russia / CIS		28	France		17
35		gost	1C35		afnor
40		gost	2C35		afnor
40GR		gost	AF55		afnor
40GTL		gost	AF55C35		afnor
40KhFL		gost	C30E		afnor
40KHGTR		gost	C35		afnor
40KHL		gost	C35E		afnor
40KHMFA		gost	C35RR		afnor
40KhML		gost	CC35		afnor
40KhNL		gost	RF36		afnor
40KHS		gost	XC32		afnor
40L		gost	XC35		afnor
AS40Kh		gost	XC38		afnor
CHVG40		gost	XC38H1		afnor
ct35		gost	XC38H1TS		afnor
PK40		gost	XC38H2FF		afnor
PK40NM		gost	XC38TS		afnor
A40KHE		gost	United States		11
AS40		gost			
AS40KHGNM		gost	G10340	This grade's own name	uns
ПК40-6.0		gost	G10350	This grade's own name	uns
ПК40-6.4		gost	1034	This grade's own name	aisi-sae
ПК40-6.8		gost	1035	This grade's own name	aisi-sae
ПК40-7.2		gost	1038		aisi-sae
ПК40-7.6		gost	C1034	This grade's own name	aisi-sae
ПК40HM-6.8		gost	G10340		aisi-sae
ПК40HM-7.2		gost	G10350		aisi-sae
ПК40HM-7.6		gost	G10380		aisi-sae
			G10400		aisi-sae
			Gr.1035		aisi-sae

United Kingdom	11	Belgium	4
060A35	bs	C35	nbn
070M36	bs	C35-1	nbn
080A32	bs	C35-2	nbn
080A35	bs	C36	nbn
080A42	bs		
080A5	bs	Europe	3
080M36	bs	1.0501	din-en
1449-40CS	bs	C35 This grade's own name	din-en
40HS	bs	Gr.1035	din-en
C35	bs		
C35E	bs	Sweden	3
		1550	ss
Italy	8	1572	ss
1C35	uni	T550	ss
1CD35	uni		
C35	uni	Bulgaria	3
C35C	uni	35	bds
C35E	uni	C35	bds
C35R	uni	C35E	bds
C36	uni		
C38	uni	Austria	3
		C35	onorm
Spain	5	C35SW	onorm
C35	une	Ck35S	onorm
C35E	une		
C35k	une	International	2
F.113	une	C35	iso
F.1130	une	C35E4	iso
Japan	5	Poland	2
S35	jis	35	pn
S35C	jis	D35	pn
S38C	jis		
SWRCH35K	jis	Hungary	2
SWRCH38K	jis	C35E	msz
		MC	msz
China	4		
35	gb	Switzerland	2
40 This grade's own name	gb	C35	snv
ML35	gb	Ck35	snv
ZG270-500	gb		
		South Korea	2
Romania	4	SM35C	ks
OLC35	stas	SM38C	ks
OLC35AS	stas		
OLC35q	stas	Czechia	1
OLC35X	stas	12040	csn
		Slovakia	1
		12 040	stn

Serbia	1	Australia / New Zealand	1
Č.1430	srps	1035	as-nzs

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 40GR

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	1.0501	Aug 20, 2026