

MATERIAL NUMBER 1.0535 · CLASS 1.0

OLC50AT

Material no. 1.0535

also listed as C55

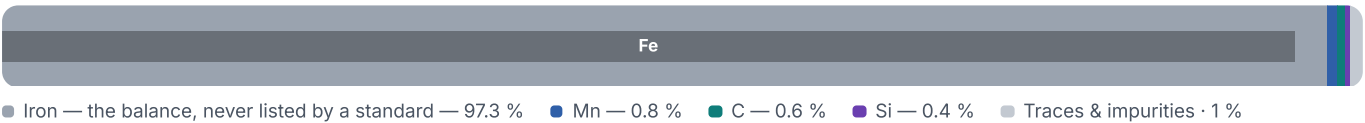
Chemical composition, mechanical and physical property values, and 101 standard designations from 21 regions.

DENSITY 7.85 g/cm³	OTHER DESIGNATIONS 101 in 21 regions	PROPERTY VALUES 16 on file
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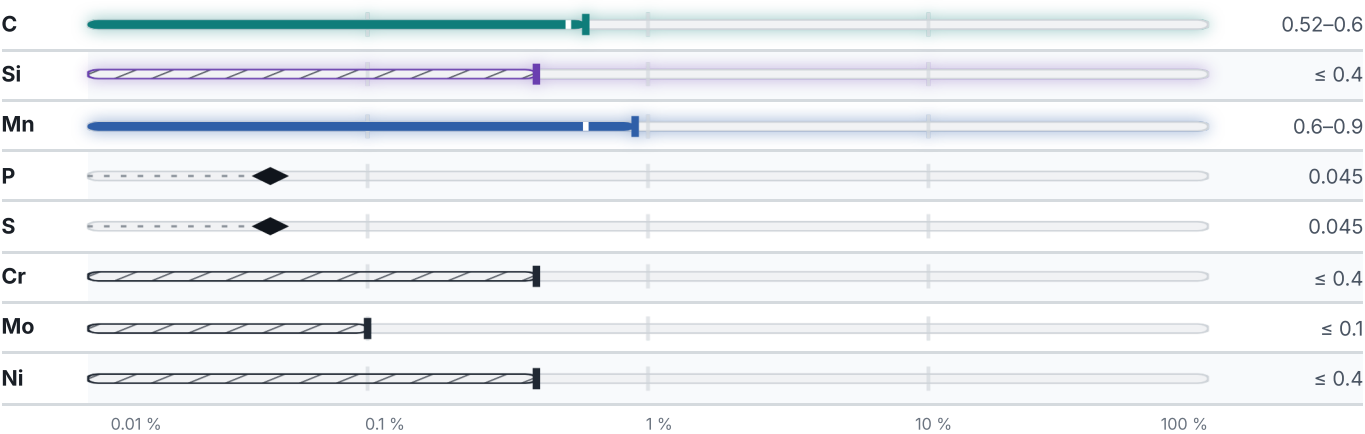
Chemical composition

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 744 °C	PREDICTED AE1 723 °C	PREDICTED ACM 687 °C	PREDICTED BS 547 °C
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Mechanical properties

33 values across 8 conditions

NORMALIZED		RM N/mm ²	A %	
≤ 16		680	11	
16 – 100		640	12	
100 – 250		620	12	
250 – 500		600	–	
500 – 1000		590	–	
COLD DRAWN / HARD		RM N/mm ²	A %	
5 – 10		770–1100	5	
10 – 16		730–1080	6	
16 – 40		690–1050	7	
40 – 63		650–1030	8	
CONDITION · DIMENSION	RM N/mm ²	A5 %	Z %	HB
Rolled stock cold-worked , GOST 1050-88	660	6	30	–
Rolled stock annealed , GOST 1050-88	560	12	40	–
Bar GOST 10702-78	–	–	–	217
Rolled stock GOST 1050-88	–	–	–	241
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %
to 80	630	375	14	40
TREATED TO IMPROVE SHEARABILITY				HB
Treated to improve shearability				255
ANNEALING		RM N/mm ²	A5 %	
6 - 60		580		17
SOFT ANNEALED				HB
Soft annealed				229
AS ROLLED AND TURNED				HB
As rolled and turned				181–269

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm³	E GPa	ALPHA 10^-6/K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
20	7.81	216	–	48	–	272
100	–	213	11.2	48	487	–
200	–	207	12	47	500	–
300	–	200	12.8	44	517	–
400	–	180	13.4	41	533	–
500	–	171	13.9	38	559	–
600	–	154	14.2	35	584	–
700	–	136	14.5	31	–	–
800	–	123	13.4	27	–	–
PROPERTY			VALUE	UNIT		
Density			7.85	g/cm³		
Transformation point Ac1			725	°C		
Transformation point Ac3			760	°C		
Transformation point Ar3			750	°C		
Transformation point Ar1			690	°C		

Technological properties

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

Heat treatment

1 regimes

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

Designations across standards

101 designations · 3 documented as identical

France		18	Italy		8
1C55		afnor	1C55		uni
2C50		afnor	C50		uni
2C55		afnor	C50E		uni
AF70		afnor	C50R		uni
AF70C55		afnor	C53		uni
C45E		afnor	C55		uni
C50E		afnor	C55E		uni
C50RR		afnor	C55R		uni
C54		afnor			
C55		afnor	Russia / CIS		6
C55E		afnor	50		gost
XC48H1		afnor	55		gost
XC48H1TS		afnor	55KH		gost
XC48TS		afnor	55SL		gost
XC50		afnor	55nn		gost
XC54		afnor	58		gost
XC55		afnor			
XC55H1		afnor	Spain		5
United States		9	C50E		une
G10550	This grade's own name	uns	C55		une
G10600		uns	C55E		une
1049		aisi-sae	C55k		une
1050		aisi-sae	F.1150		une
1055	This grade's own name	aisi-sae	Japan		5
1060		aisi-sae	S40C		jis
G10490		aisi-sae	S50C		jis
G10500		aisi-sae	S53C		jis
G10550		aisi-sae	S55C		jis
United Kingdom		9	S55C-CSP		jis
060A52		bs	China		5
060A57		bs	50		gb
070M55		bs	55		gb
080A52		bs	SM50		gb
080M50		bs	SM55		gb
C50E		bs	ZG340-640		gb
C55		bs			
C55E		bs	Poland		5
En9		bs	55		pn
			55A		pn
			55rs		pn
			60		pn
			D50		pn

Romania		5	Sweden		2
OLC50AT	stas		1655	ss	
OLC50X	stas		1674	ss	
OLC55	stas		Czechia		2
OLC55A	stas		12051	csn	
OLC55X	stas		12060	csn	
Bulgaria		5	Hungary		2
50	bds		C50E	msz	
55	bds		C55E	msz	
C50E	bds		Australia / New Zealand		2
C55	bds		1050	as-nzs	
C55E	bds		1055	as-nzs	
Europe		3	South Korea		2
1.0535	din-en		SM50C	ks	
C55	din-en	This grade's own name	SM55C	ks	
CF53	din-en		Slovakia		1
International		3	12 060	stn	
C50	iso		Serbia		1
C55	iso		Č.1630	srps	
C55E4	iso				
Belgium		3			
C53	nbn				
C55-1	nbn				
C55-2	nbn				

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 OLC50AT

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	1.0535	Aug 20, 2026