

MATERIAL NUMBER 1.0254 · CLASS 1.0

P235TR1

Material no. 1.0254

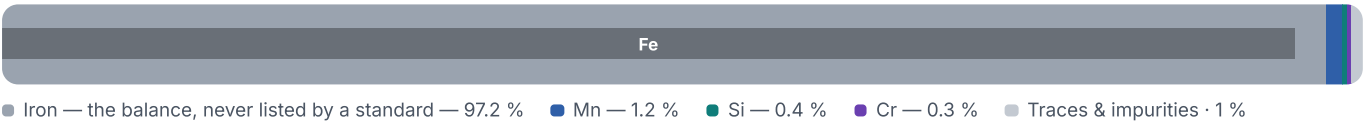
Chemical composition, mechanical and physical property values, and 11 standard designations from 5 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 11 in 5 regions	PROPERTY VALUES 20 on file
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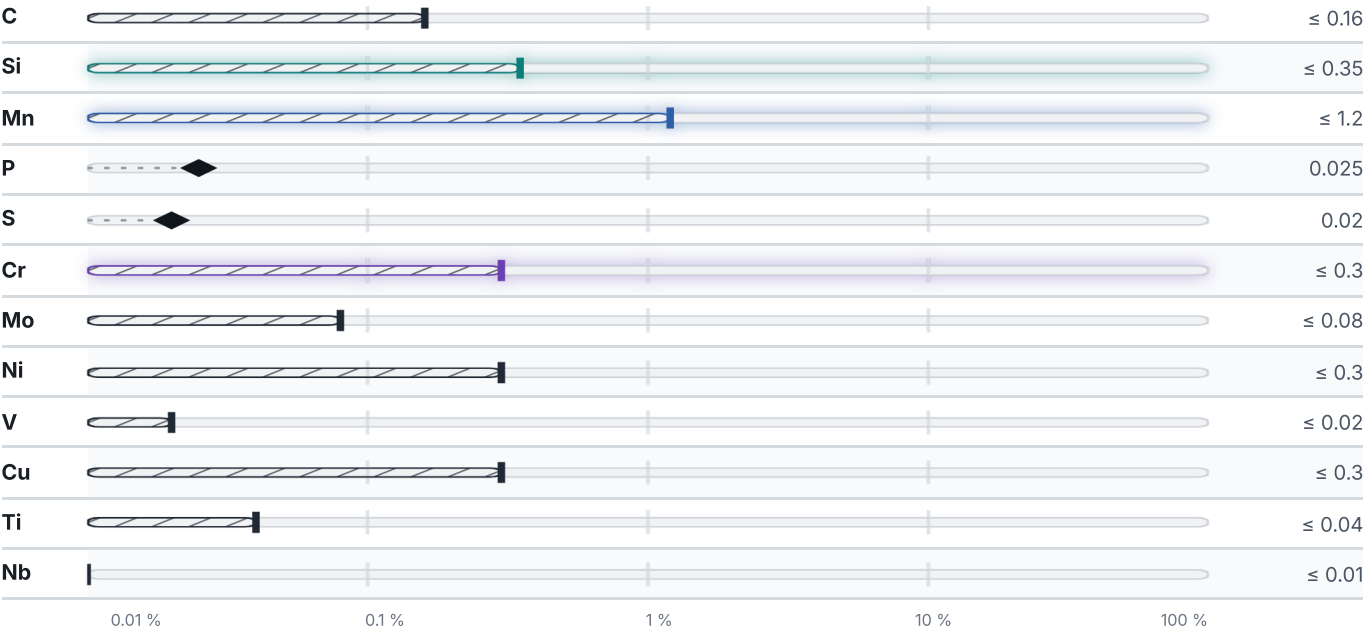
Chemical composition

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 819 °C	PREDICTED AE1 717 °C	PREDICTED ACM 399 °C	PREDICTED BS 568 °C
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Mechanical properties

35 values across 4 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²	HB
Pipe hot strain, GOST 550-75	431	255	22	50	780	–
Pipe, GOST 8731-87	412	245	21	–	–	–
Pipe, GOST 10705-80	372	225	22	–	–	–
Rolled stock cold-worked , GOST 1050-88	490	–	7	40	–	–
Rolled stock annealed , GOST 1050-88	390	–	21	50	–	–
Band annealed , GOST 2284-79	310–540	–	18	–	–	–
Band cold-worked , GOST 2284-79	490–830	–	–	–	–	–
(annealing) , GOST 1050-88	–	–	–	–	–	163
(cold-drawn, cold-worked) , GOST 1050-88	–	–	–	–	–	207
Sheet GOST 4041-71	–	–	–	–	–	127
Pipe GOST 550-75	–	–	–	–	–	156
Pipe GOST 8731-87	–	–	–	–	–	156
Sheet trick GOST 1577-93	–	–	–	–	–	156
CONDITION · DIMENSION						REH N/mm ²
≤ 16						235
16 – 40						225
40 – 60						215
CONDITION · DIMENSION					RM N/mm ²	A5 %
4 - 14					340–490	28
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %		
to 80	410	245	25	55		

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	7.859	213	–	52	–	–
100	7.834	203	11.6	50.6	486	219
200	7.803	199	12.6	48.6	498	292
300	7.77	190	13.1	46.2	514	381
400	7.736	182	13.6	42.8	533	487
500	7.699	172	14.1	39.1	555	601
600	7.659	160	14.6	35.8	584	758
700	7.617	–	14.8	32	636	925
800	7.624	–	12.9	–	703	1094
900	7.6	–	–	–	703	1135
1000	–	–	–	–	695	–

PROPERTY	VALUE	UNIT
Density	7.85	g/cm³
Transformation point Ac1	724	°C
Transformation point Ac3	845	°C
Transformation point Ar3	815	°C
Transformation point Ar1	682	°C

Technological properties

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

Designations across standards

11 designations · 4 documented as identical

Europe		4	United States		4
1.0254	din-en		K02501	This grade's own name	uns
P235TR1	This grade's own name	din-en	K02504	This grade's own name	uns
S235	din-en		1020		aisi-sae
St 37.0	This grade's own name	din-en	A 53 Grade A		astm
			Japan		1
			S20C		jis

China	1	Czechia	1
20	gb	11353	csn

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 P235TR1

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	1.0254	Aug 20, 2026