

12G2S

also listed as 12G2A

Chemical composition, mechanical and physical property values, and 11 standard designations from 1 regions.

OTHER DESIGNATIONS	PROPERTY VALUES
11 in 1 regions	15 on file

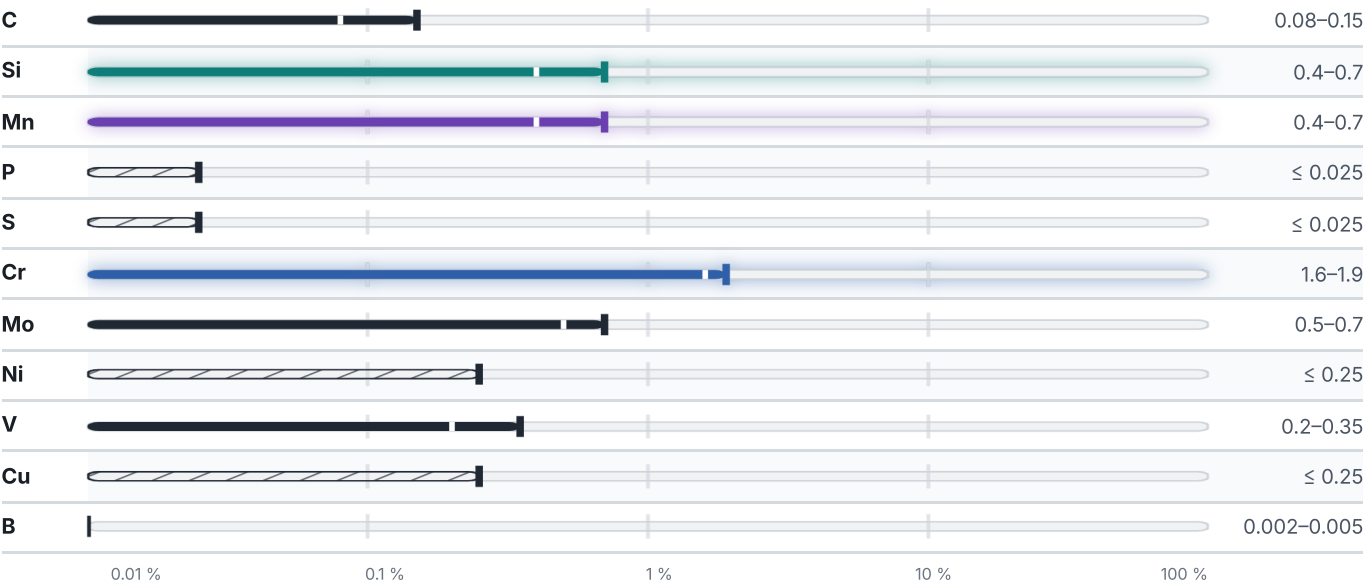
Chemical composition

Mass fraction in %



● Iron — the balance, never listed by a standard — 95.6 % ● Cr — 1.8 % ● Mo — 0.6 % ● Si — 0.6 % ● Traces & impurities · 1.5 %

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	PREDICTED AE1	PREDICTED ACM	PREDICTED BS
841 °C	769 °C	447 °C	507 °C

Mechanical properties

13 values across 1 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 42 × 6	240	480	24	–	2700
Ø 32 × 5	530	330	22	–	2300
Ø 273 × 36	600	440	24	72	1900

Physical properties

4 values

CONDITION · DIMENSION	RHO g/cm ³	ALPHA 10 ^{^-6} /K	LAMBDA W/(m·K)
20	7.8	–	29.4
100	–	10.95	–
200	–	11.95	–
300	–	12.65	–
400	–	13.15	–
500	–	13.7	–
600	–	14	–
700	–	14.3	–

PROPERTY	VALUE	UNIT
Transformation point Ac1	775	°C
Transformation point Ac3	865	°C
Transformation point Ar3	770	°C
Transformation point Ar1	715	°C

Designations across standards

11 designations · 1 documented as identical

Russia / CIS	11
12G2A	gost
12G2F	gost
12G2FD	gost
12G2S	gost
12G2SB	gost
12G2SD	gost
12Kh2M	gost
12Kh2MFSR This grade's own name	gost
12KhN2MDF	gost
12X2M-БД	gost
12X2MΦCP	gost

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 12G2S

Quotation, availability, mill certificate or a technical question — directly on the material page.

[Start an enquiry](#)

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GRADE SEARCH
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MATERIAL NO.
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ISSUED
Aug 15, 2026