

12Cr18Ni9

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

ELASTIC MODULUS 193 GPa	OTHER DESIGNATIONS 1 in 1 regions	PROPERTY VALUES 13 on file
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Chemical composition

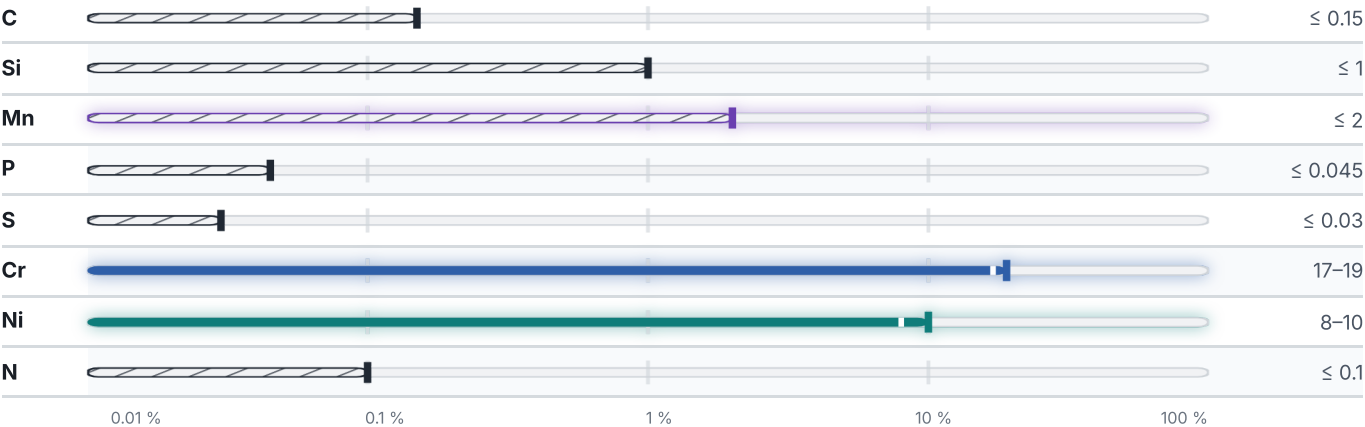
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 69.7 % ● Cr — 18 % ● Ni — 9 % ● Mn — 2 % ● Traces & impurities · 1.3 %

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

Not enough recorded composition to predict a transformation temperature for this grade — missing: Mo.

Physical properties

5 values

CONDITION · DIMENSION	E GPa	ALPHA 10^-6/K	LAMBDA W/(m·K)	CP J/(kg·K)
20	200	—	—	—
100	194	16	16.3	—
200	186	17	—	—
300	179	17	—	—
400	172	18	—	—
500	165	18.4	21.5	500

PROPERTY	VALUE	UNIT
Elastic modulus	193	GPa
Thermal expansion coefficient	17.3	10^-6/K
Thermal conductivity	15	W/(m·K)
Specific heat capacity	500	J/(kg·K)
Electrical resistivity	730	nΩ·m

Heat treatment

2 regimes

STEP	TEMPERATURE	MEDIUM
Solution annealing	Temperature not stated	—
source joins the operations with (or)		
Quenching	Temperature not stated	—
Solution annealing	1010–1150 °C	Water

Designations across standards

1 designations · 1 documented as identical

China	1
12Cr18Ni9 This grade's own name	gb

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 12Cr18Ni9

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

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MATERIAL NO.

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ISSUED

Aug 15, 2026