SteelEquivalents.com

Material datasheet
As of Aug 15, 2026

05Cr17Ni4Cu4Nb

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

ELASTIC MODULUS	OTHER DESIGNATIONS	PROPERTY VALUES
196 GPa	**1** in 1 regions	**14** on file

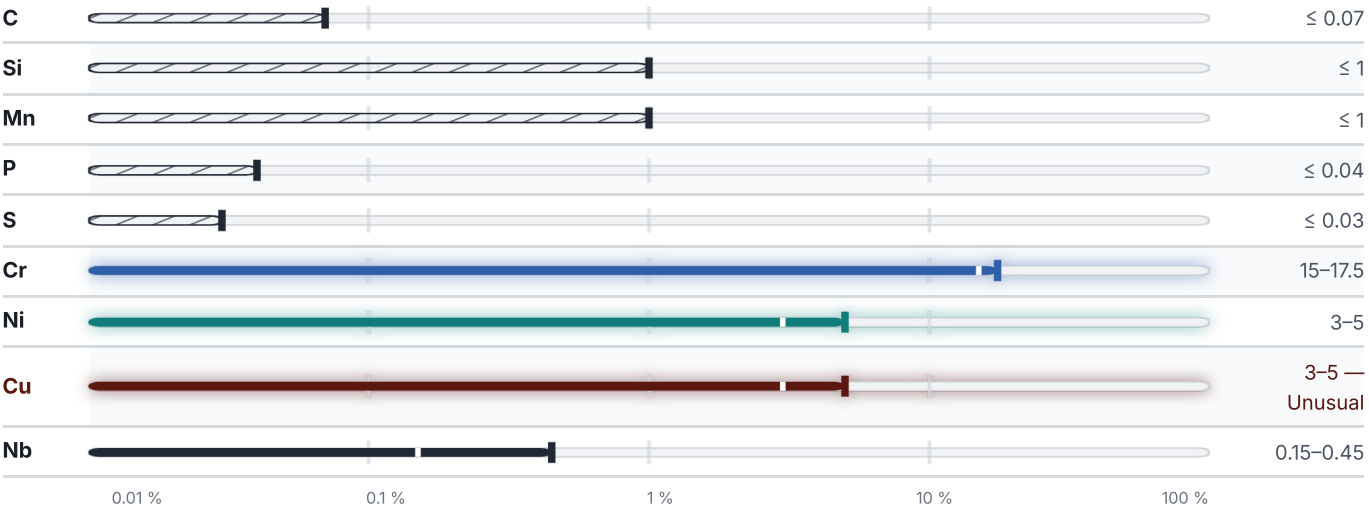
Chemical composition

Mass fraction in %

What this alloy is

Iron — the balance, never listed by a standard — 73.3 % · Cr — 16.3 % · Ni — 4 % · Cu — 4 % · Traces & impurities · 2.4 %

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.

Mechanical properties

4 values across 1 conditions

CONDITION · DIMENSION	HB
H480	≥ 375
H550	≥ 331
H580	≥ 302
H620	≥ 277

Physical properties

5 values

CONDITION · DIMENSION	E GPa	ALPHA 10^-6/K	LAMBDA W/(m·K)	CP J/(kg·K)
20	200	–	–	–
100	195	11.1	17.2	–
200	185	11.5	–	–
300	175	11.8	–	–
400	170	12.2	–	–
500	–	12.6	23	460

PROPERTY	VALUE	UNIT
Elastic modulus	196	GPa
Thermal expansion coefficient	10.8	10^-6/K
Thermal conductivity	16	W/(m·K)
Specific heat capacity	500	J/(kg·K)
Electrical resistivity	710	nΩ·m

Heat treatment

12 regimes

STEP	TEMPERATURE	MEDIUM
multiple operations, source states neither order nor alternation		
Precipitation hardening	480 °C	—
Ageing	Temperature not stated	—
Ageing	550 °C	—
multiple operations, source states neither order nor alternation		
Precipitation hardening	550 °C	—
Ageing	Temperature not stated	—

STEP	TEMPERATURE	MEDIUM
multiple operations, source states neither order nor alternation		
Precipitation hardening	580 °C	—
Ageing	Temperature not stated	—
Ageing	580 °C	—
Ageing	620 °C	—
multiple operations, source states neither order nor alternation		
Precipitation hardening	620 °C	—
Ageing	Temperature not stated	—
Solution annealing	Temperature not stated	—
source joins the operations with (or)		
Solution annealing	Temperature not stated	—
Annealing	Temperature not stated	—
multiple operations, source states neither order nor alternation		
Precipitation hardening	Temperature not stated	—
Ageing	620 °C	—
multiple operations, source states neither order nor alternation		
Precipitation hardening	Temperature not stated	—
Ageing	480 °C	—
Solution annealing	Temperature not stated	—

Designations across standards

1 designations · 1 documented as identical

China	1
05Cr17Ni4Cu4Nb 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.

DATASHEET ONLINE	GRADE SEARCH	MATERIAL NO.	ISSUED
View the material page	Search all grades	—	Aug 15, 2026