SteelEquivalents.com

Material datasheet
As of Aug 20, 2026

MATERIAL NUMBER 1.8825 · CLASS 1.8

S420M

Material no. 1.8825

Chemical composition, mechanical and physical property values, and 7 standard designations from 3 regions.

DENSITY	OTHER DESIGNATIONS	PROPERTY VALUES
7.85 g/cm³	7 in 3 regions	15 on file

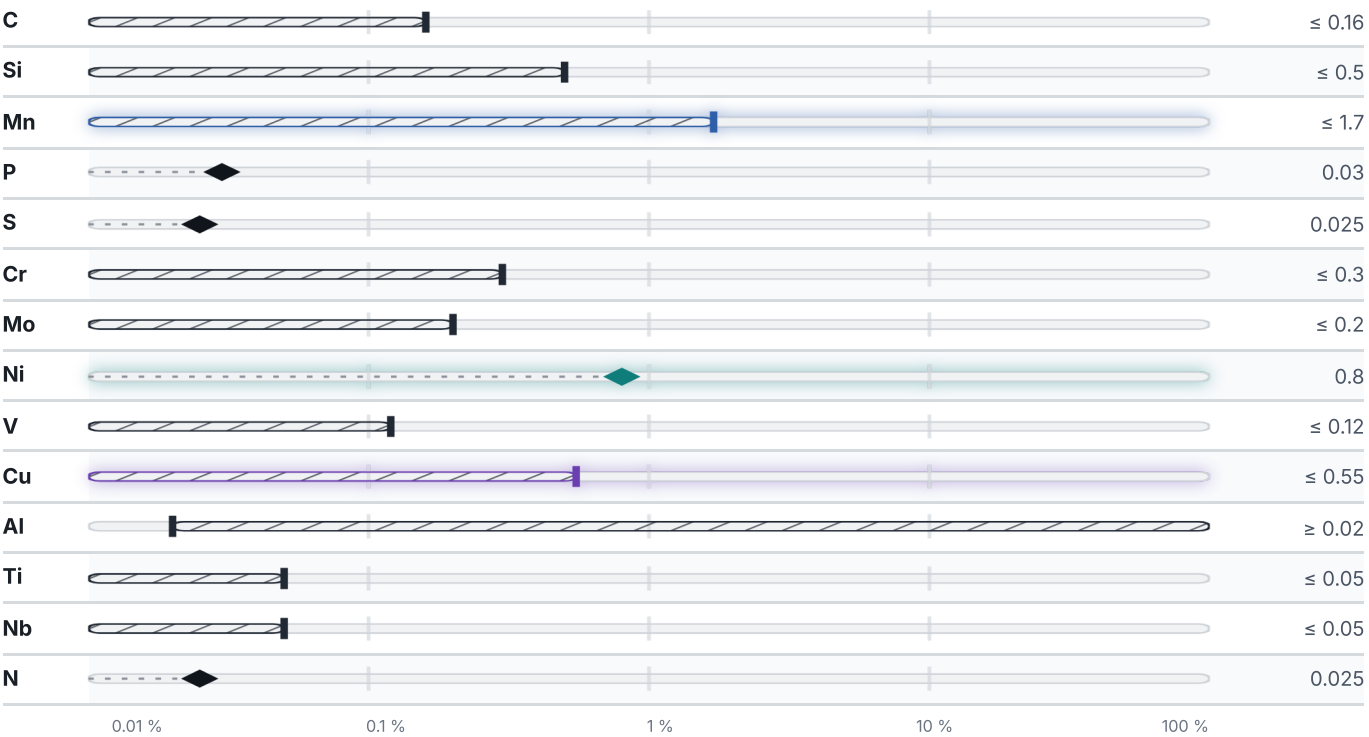
Chemical composition

Mass fraction in %

What this alloy is

Iron — the balance, never listed by a standard — 95.5 % · Mn — 1.7 % · Ni — 0.8 % · Cu — 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
810 °C	706 °C	403 °C	538 °C

Mechanical properties

11 values across 1 conditions

CONDITION · DIMENSION	REH N/mm²	RM N/mm²
≤ 16	420	–
16 – 40	400	–
≤ 40	–	520–680
40 – 63	390	500–660
63 – 80	380	480–640
80 – 100	370	470–630
100 – 120	365	460–620

Physical properties

1 values

PROPERTY	VALUE	UNIT
Density	7.85	g/cm³

Designations across standards

7 designations · 1 documented as identical

Europe 4

A945Gr.65	din-en
FeE420KGTM	din-en
S420M This grade's own name	din-en
StE 420 TM	din-en

United States 2

A572Gr.60	aisi-sae
A945Gr.65	aisi-sae

France 1

E420R	afnor

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 S420M

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	1.8825	Aug 20, 2026