

MATERIAL NUMBER 1.7709 · CLASS 1.7

3M10

Material no. 1.7709

also listed as 21CrMoV5-7

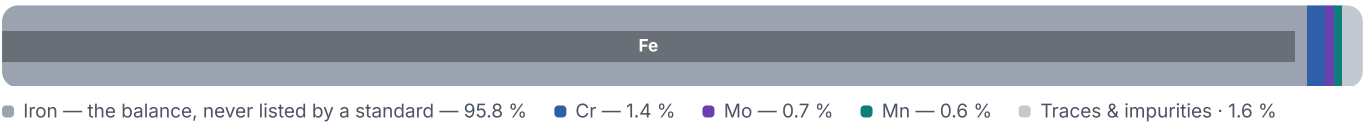
Chemical composition, mechanical and physical property values, and 14 standard designations from 7 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 14 in 7 regions	PROPERTY VALUES 18 on file
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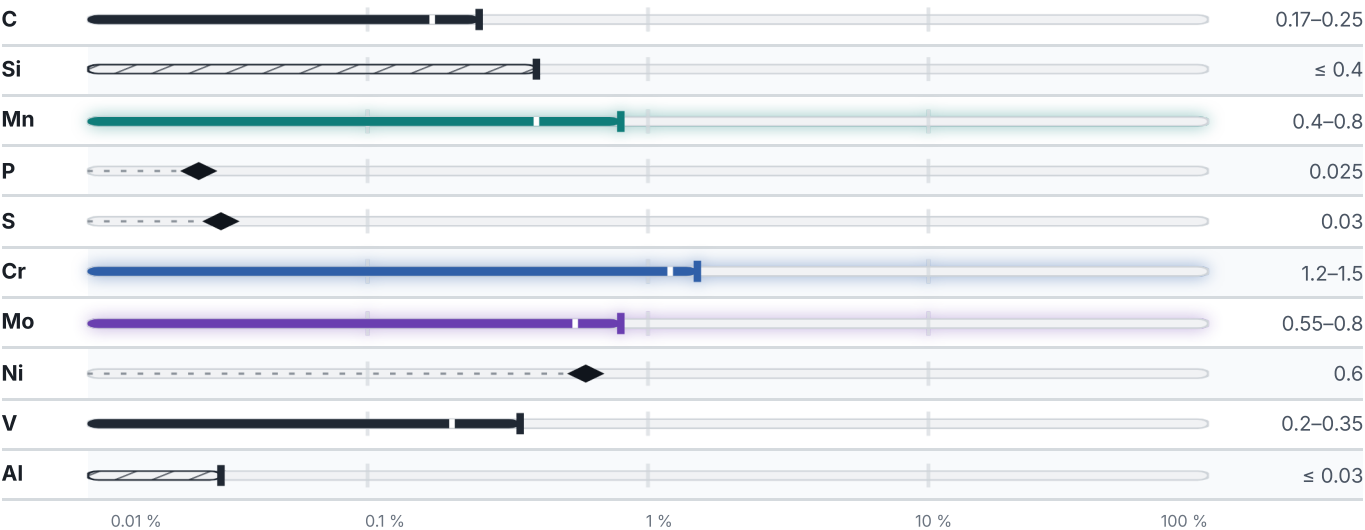
Chemical composition

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 803 °C	PREDICTED AE1 747 °C	PREDICTED ACM 514 °C	PREDICTED BS 502 °C
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Mechanical properties

14 values across 5 conditions

CONDITION · DIMENSION					HB
25Kh1MF (25X1MΦ) (quenching, tempering)					241–321
25Kh1MF (25X1MΦ) (hot-rolled, annealing) , GOST 20072-74					229
ANNEALED TO ACHIEVE SPHEROIDIZATION OF THE CARBIDES					HB
Annealed to achieve spheroidization of the carbides					229
TREATED TO IMPROVE SHEARABILITY					HB
Treated to improve shearability					255
QUENCHING 880 - 900°C, OIL, DRAWING 640 - 660°C, COOLING AIR	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
max thickness 25	880	735	14	50	590
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Bar, band, GOST 20072-74	780	665	16	50	590

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
20	7.84	217	–	–	–	–
100	–	211	11.3	39.8	462	312
200	7.79	206	11.7	37.9	–	396
300	–	198	12.8	36.9	–	475
400	7.72	191	13.9	35.9	–	574
500	–	180	14.2	34.8	–	680
600	7.65	167	14.4	–	–	826

PROPERTY	VALUE	UNIT
Density	7.85	g/cm³
Transformation point Ac1	760	°C
Transformation point Ac3	840	°C
Transformation point Ar3	760	°C
Transformation point Ar1	680	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	hard weldability.	
Flake sensitivity	predisposed	
Temper brittleness	not predisposed	

Designations across standards

14 designations · 1 documented as identical

Russia / CIS	8	France	1
21Kh1M1F	gost	20CDV5-07	afnor
25Ch1M1F	gost		
25KH1M1F	gost	Czechia	1
25KH1MF	gost	15320	csn
25X1M1Φ	gost		
25X1M1ΦA	gost	Slovakia	1
25X1MΦ	gost	15 320	stn
ЭИ10	gost		
Europe	1	Poland	1
21CrMoV5-7 This grade's own name	din-en	21HMF	pn
		Hungary	1
		MCrMoV	msz

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 ЭИ10

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	1.7709	Aug 20, 2026