

3M415

also listed as 20Kh3MVF

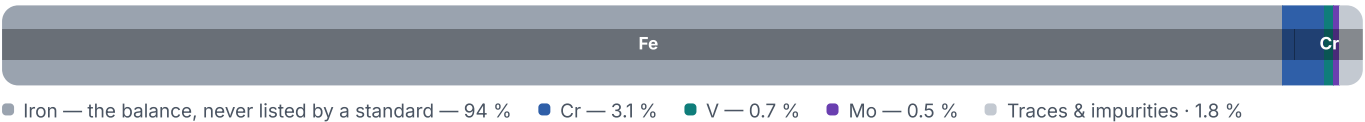
Chemical composition, mechanical and physical property values, and 5 standard designations from 1 regions.

OTHER DESIGNATIONS	PROPERTY VALUES
5 in 1 regions	16 on file

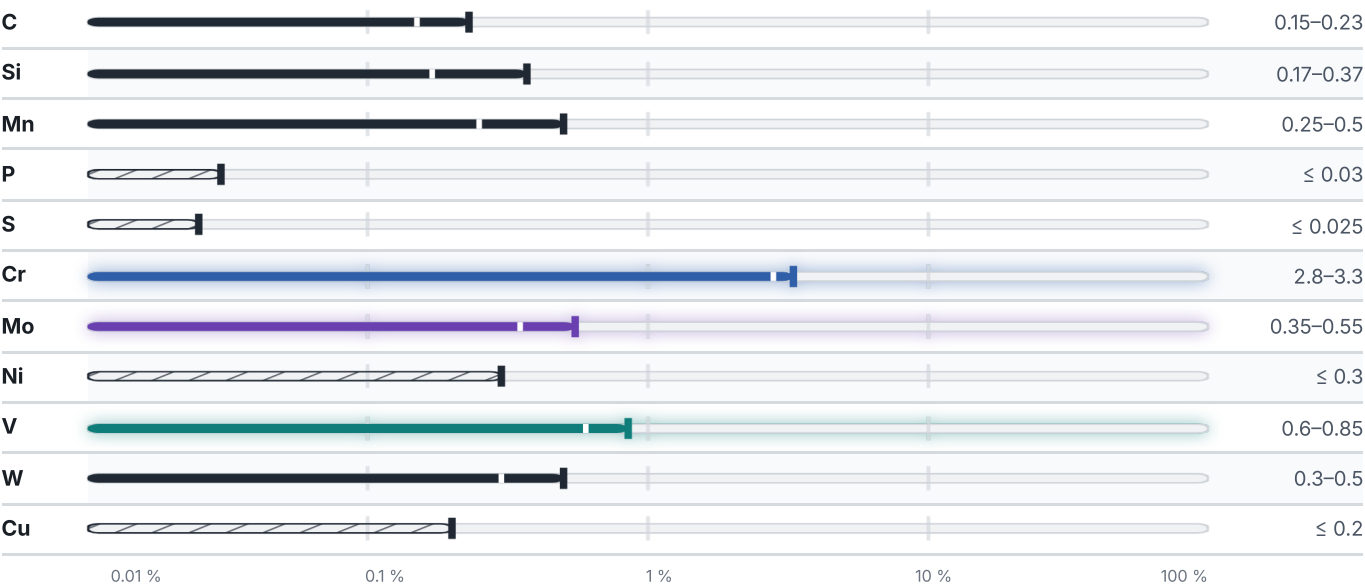
Chemical composition

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 812 °C	PREDICTED AE1 797 °C	PREDICTED ACM 529 °C	PREDICTED BS 467 °C
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Mechanical properties

16 values across 2 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Bar, band, GOST 20072-74	880	735	12	40	590
Arbor, rotor	750	650	13	40	500
Arbor, rotor	730	620	11	32	400
CONDITION · DIMENSION					HB
20Kh3MVF (20X3MBΦ) (hot-rolled, annealing) , GOST 20072-74					269

Physical properties

5 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	7.8	207	–	38.5	–	–
100	–	204	10.6	35.6	502	398
200	–	200	11.5	33.1	560	465
300	–	193	11.8	31.4	610	544
400	7.69	186	12.1	30.6	650	640
500	7.66	182	12.6	29.7	710	743
600	7.62	177	13	29.3	750	859
700	–	171	–	28.9	–	982
PROPERTY				VALUE	UNIT	
Transformation point Ac1				800	°C	
Transformation point Ac3				900	°C	
Transformation point Ar3				790	°C	
Transformation point Ar1				680	°C	

Technological properties

PROPERTY	VALUE	UNIT
Weldability	limited weldability.	

Designations across standards

5 designations · 1 documented as identical

Russia / CIS	5	20X3MBΦ	gost
20Kh3MVF This grade's own name	gost	ЭИ415	gost
20KhN3MFA	gost	ЭИ579	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 3M415
Quotation, availability, mill certificate or a technical question — directly on the material page.

Start an enquiry

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MATERIAL NO.
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ISSUED
Aug 15, 2026