

MATERIAL NUMBER 1.1152 · CLASS 1.1

20KhMFBR

Material no. 1.1152

also listed as C20E2C

Chemical composition, mechanical and physical property values, and 41 standard designations from 4 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 41 in 4 regions	PROPERTY VALUES 11 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

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

Mechanical properties

9 values across 2 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Normalizing 1100°C, Drawing 650°C, 6h	1076	958	13.3	46.6	150
CONDITION · DIMENSION	RM N/mm ²	A5 %	Z %	KCU kJ/m ²	
Bar	900	15	55	400	

Physical properties

5 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	LAMBDA W/(m·K)
20	7.9	217	–
100	–	211	41
200	–	205	46.1
300	–	196	48.2
400	–	188	50.2
500	–	180	52.8
600	–	167	54.4
700	–	152	56.1
PROPERTY	VALUE	UNIT	
Density	7.85	g/cm ³	
Transformation point Ac1	810	°C	
Transformation point Ac3	950	°C	
Transformation point Ar3	800	°C	
Transformation point Ar1	690	°C	

Designations across standards

41 designations · 4 documented as identical

Russia / CIS	35	Europe	3
20	gost	20kp	din-en
20-PV	gost	C20E2C This grade's own name	din-en
20A	gost	Cq 22 This grade's own name	din-en
20DKHL	gost		
20F	gost	United States	2
20FA	gost	G10230 This grade's own name	uns
20FL	gost	1023 This grade's own name	aisi-sae
20FTL	gost		
20FYu	gost	Japan	1
20GNMFL	gost	S22C	jis
20GNMYuL	gost		
20GS	gost		
20KHF	gost		
20KhFA	gost		
20KHGNR	gost		
20KHGNTR	gost		
20KHGR	gost		
20KHGSFL	gost		
20KHGSNDML	gost		
20KHGSA	gost		
20KhMFBR	gost		
20KHML	gost		
20KHN	gost		
20KHNR	gost		
20kp	gost		
20ps	gost		
20YuA	gost		
20YuCh	gost		
20YuChA	gost		
PA-ZhKh20KB	gost		
SHKH20SG	gost		
Sv-20GSTYuA	gost		
AS20KHGNM	gost		
ATS20KHGNM	gost		
X20K5	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 20KhMFBR

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ISSUED

Aug 20, 2026