

MATERIAL NUMBER 1.6523 · CLASS 1.6

20NiCrMo3-1

Material no. 1.6523

also listed as 20NiCrMo2-2

Chemical composition, mechanical and physical property values, and 63 standard designations from 18 regions.

DENSITY 7.75 g/cm³	OTHER DESIGNATIONS 63 in 18 regions	PROPERTY VALUES 9 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 804 °C	PREDICTED AE1 725 °C	PREDICTED ACM 471 °C	PREDICTED BS 546 °C
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Mechanical properties

8 values across 5 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	KCU kJ/m ²
, GOST 4543-71	1180–1570	930	7	590
SOFT ANNEALED				HB
Soft annealed				212
TREATED TO HARDNESS RANGE				HB
Treated to hardness range				161–212
TREATED TO FERRITE-PEARLITE STRUCTURE AND HARDNESS RANGE				HB
Treated to ferrite-pearlite structure and hardness range				149–194
CONDITION · DIMENSION				RM N/mm ²
200				1100

Physical properties

1 values

PROPERTY	VALUE	UNIT
Density	7.75	g/cm ³

Heat treatment

4 regimes

STEP	TEMPERATURE	MEDIUM
Carburizing	Temperature not stated	—
source joins the operations with + / procedural order		
Quenching	Temperature not stated	—
Tempering	Temperature not stated	—
Quenching	Temperature not stated	—
source joins the operations with (or)		
Annealing	Temperature not stated	—
Tempering	Temperature not stated	—

Designations across standards

63 designations · 14 documented as identical

United States		20	Spain		3
G86170	This grade's own name	uns	20NiCrMo2		une
G86200	This grade's own name	uns	20NiCrMo2-2		une
H86170	This grade's own name	uns	20NiCrMo3-1		une
H86200	This grade's own name	uns			
K12147	This grade's own name	uns	China		3
8615 8617 8620 8622		aisi-sae	20CrNiMo		gb
8617	This grade's own name	aisi-sae	20CrNiMoH		gb
8617H	This grade's own name	aisi-sae	G20CrNiMo		gb
8620	This grade's own name	aisi-sae			
8620H	This grade's own name	aisi-sae	International		2
8620RH	This grade's own name	aisi-sae	20NiCrMo2		iso
8622H		aisi-sae	20NiCrMoS2		iso
8717	This grade's own name	aisi-sae			
EX5	This grade's own name	aisi-sae	Japan		2
G86170		aisi-sae	SNCM220		jis
G86200		aisi-sae	SNCM220H		jis
H86170		aisi-sae			
H86200		aisi-sae	Russia / CIS		2
J11442		aisi-sae	20KHGNM		gost
K12147		aisi-sae	20XГНМ		gost
United Kingdom		9	Czechia		2
20NiCrMo2-2		bs	16 125 PH		csn
20NiCrMoS2-2		bs	16125		csn
362		bs			
805H17		bs	Poland		2
805H20		bs	20HNM		pn
805H22		bs	20HNMA		pn
805M20		bs			
806M20		bs	Finland		2
EN362		bs	21NiCrMo2		sfs
			506		sfs
Australia / New Zealand		4	South Korea		2
8617		as-nzs	SNCM220		ks
8617H		as-nzs	SNCM220H		ks
8620		as-nzs			
8620H		as-nzs			
Europe		3	Italy		1
1.6523		din-en	20NiCrMo2		uni
20NiCrMo2-2	This grade's own name	din-en			
21NiCrMo2	This grade's own name	din-en	Sweden		1
			2506		ss
France		3	Latin America		1
20NCD2		afnor	8620		copant
20NiCrMo2		afnor			
22NCD2		afnor	Serbia		1
			Č.7422		srps

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 20NiCrMo3-1
Quotation, availability, mill certificate or a technical question — directly on the material page.

Start an enquiry

DATASHEET ONLINE
View the material page

GRADE SEARCH
Search all grades

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ISSUED
Aug 20, 2026