

MATERIAL NUMBER 1.7027 · CLASS 1.7

20Ch

Material no. 1.7027

also listed as 20Cr4

Chemical composition, mechanical and physical property values, and 25 standard designations from 12 regions.

DENSITY

7.85 g/cm³

OTHER DESIGNATIONS

25 in 12 regions

PROPERTY VALUES

17 on file

Chemical composition

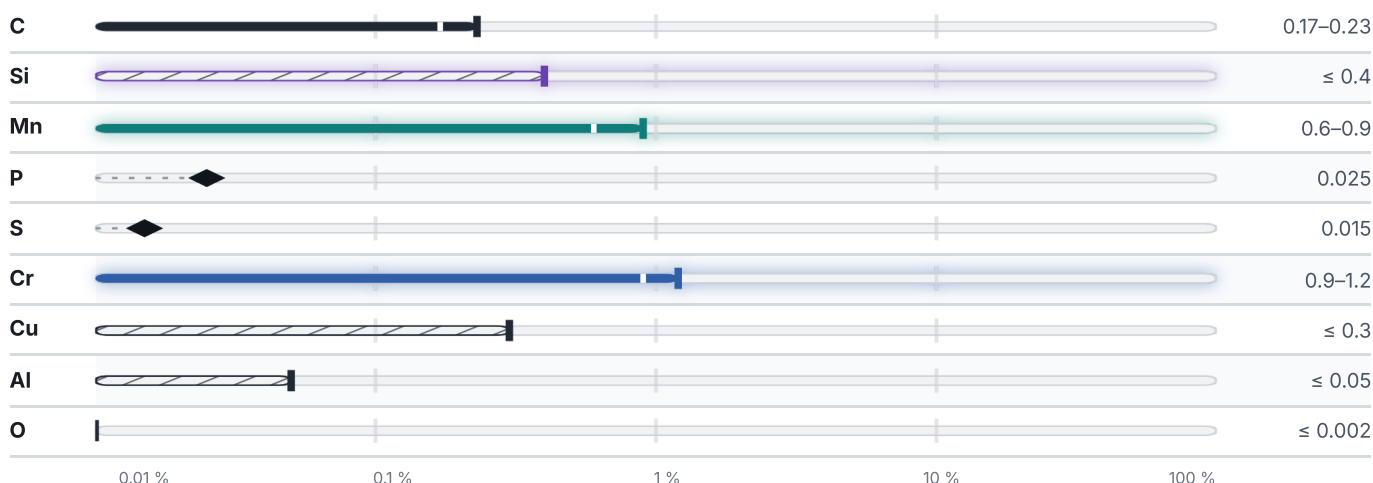
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 97.2 % ● Cr — 1.1 % ● Mn — 0.8 % ● Si — 0.4 % ● Traces & impurities · 0.6 %

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, Mo.

Mechanical properties

10 values across 2 conditions

CONDITION · DIMENSION	RM N/mm ²	A5 %	HB		
Pipe, GOST 8731-87	431	16	–		
(annealing) , GOST 4543-71	–	–	179		
(cold-worked) , GOST 4543-71	–	–	229		
Bar GOST 10702-78	–	–	163		
QUENCHING AND DRAWING	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 15	780	635	11	40	590

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm³	E GPa	ALPHA 10^-6/K	LAMBDA W/(m·K)	CP J/(kg·K)
20	7.83	216	–	42	–
100	7.81	213	10.5	42	496
200	7.78	198	11.6	41	508
300	–	193	12.4	40	525
400	7.71	181	13.1	38	537
500	–	171	13.6	36	567
600	7.64	165	14	33	588
700	–	143	–	32	626
800	–	133	–	31	706
PROPERTY					VALUE UNIT
Density				7.85	g/cm³
Transformation point Ac1				750	°C
Transformation point Ac3				825	°C
Transformation point Ar3				755	°C
Transformation point Ar1				665	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	without limitations.	
Flake sensitivity	weakly predisposed	

PROPERTY	VALUE	UNIT
Temper brittleness	not predisposed	

Heat treatment

19 regimes

STEP	TEMPERATURE	MEDIUM
Soft annealing	Temperature not stated	—
Spheroidize annealing	Temperature not stated	—
Solution annealing	Temperature not stated	—
Soft annealing	Temperature not stated	—
Soft annealing	Temperature not stated	—
Soft annealing	Temperature not stated	—
Quenching and tempering	Temperature not stated	—
source joins the operations with + / procedural order		
Normalizing	Temperature not stated	—
Tempering	Temperature not stated	—
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 + / procedural order		
Annealing	Temperature not stated	—
Annealing	Temperature not stated	—
Tempering	Temperature not stated	—
Normalizing	Temperature not stated	—
Tempering	Temperature not stated	—
Spheroidize annealing	Temperature not stated	—
source joins the operations with + / procedural order		
Quenching	880 °C	—
Quenching	780–820 °C	—
Tempering	200 °C	—

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

Designations across standards

25 designations · 3 documented as identical

United States	7	Japan	2
G51200 This grade's own name	uns	SCr420	jis
5117	aisi-sae	SCr420H	jis
5120 This grade's own name	aisi-sae		
5120H	aisi-sae	Europe	1
G51170	aisi-sae	20Cr4 This grade's own name	din-en
G51200	aisi-sae		
H51200	aisi-sae	France	1
		18C3	afnor
Russia / CIS	5	China	1
20Ch	gost	20Cr	gb
20KH	gost		
20X	gost	Poland	1
20X	gost	20H	pn
CT.20X	gost		
United Kingdom	2	Serbia	1
207	bs	Č.4120.1	srps
527A19	bs		
		Hungary	1
International	2	BC2	msz
20Cr4	iso		
20CrS4	iso		

Bulgaria	1
20Ch	bds

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 20Ch

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	1.7027	Aug 20, 2026