

MATERIAL NUMBER 1.4057 · CLASS 1.4

431 S 29 En57

Material no. 1.4057

also listed as X 20 CrNi 17 2

Chemical composition, mechanical and physical property values, and 63 standard designations from 16 regions.

DENSITY**7.7** g/cm³**OTHER DESIGNATIONS****63** in 16 regions**PROPERTY VALUES****13** on file

Chemical composition

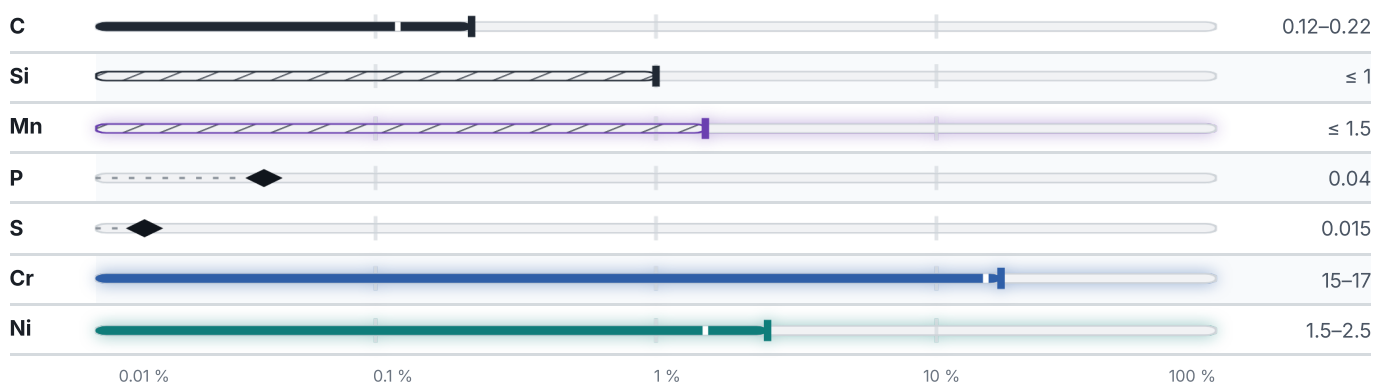
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 79.3 % ● Cr — 16 % ● Ni — 2 % ● Mn — 1.5 % ● Traces & impurities · 1.2 %

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: Mo.

Mechanical properties

27 values across 7 conditions

CONDITION · DIMENSION					HB
14KH17N2 (14X17H2) (quenching, tempering) , GOST 25054-81					248–293
14KH17N2 (14X17H2) (annealing) , Bar GOST 5949-75					285
14KH17N2 (14X17H2) (annealing) , Bar GOST 18907-73					302
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A %	Z %	AK J/cm ²
Bars/Rods	780	590	15	40	39
SOFT ANNEALED					HB
Soft annealed					295
QUENCHING 975 - 1040°C, OIL, DRAWING 275 - 350°C, AIR	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 60	1080	835	10	30	490
QUENCHING 1000 - 1030°C, OIL, DRAWING 620 - 660°C, AIR	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 60	835	635	16	55	750
QUENCHING 980 - 1020°C, OIL, DRAWING 680 - 700°C, AIR	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
to 1000	686	539	12–15	30–40	490–590
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %		
Sheet trick, GOST 7350-77	1080		885	10	

Physical properties

6 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	RHO_EL nΩ·m
20	7.75	197	–	20.9	720
100	–	–	9.8	21.7	780
200	–	–	10.6	22.6	840
300	–	167	10.8	23.4	890
400	–	–	11	24.3	990
500	–	151	11.1	25.1	1040
600	–	136	11.8	25.9	1110

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	RHO_EL nΩ·m
700	—	—	11	26.8	1130
800	—	—	10.7	28	1160
900	—	—	11.4	29.7	1170
1000	—	—	11.5	—	1180

PROPERTY	VALUE	UNIT
Density	7.7	g/cm ³
Transformation point Ac1	720	°C
Transformation point Ac3	830	°C
Transformation point Ar1	700	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	hard weldability.	
Temper brittleness	predisposed	

Heat treatment

2 regimes

STEP	TEMPERATURE	MEDIUM
Tempering	Temperature not stated	—
source joins the operations with + / procedural order		
Quenching	Temperature not stated	—
Solution annealing	Temperature not stated	—
Tempering	Temperature not stated	—
Ageing	Temperature not stated	—

Designations across standards

63 designations · 6 documented as identical

United States		20	United Kingdom		4
S43100	This grade's own name	uns	431 S 29 En57		bs
431	This grade's own name	aisi-sae	431S29		bs
51431		aisi-sae	7S80		bs
S43100		aisi-sae	En57		bs
A176		astm	Spain		4
A276		astm			
A314		astm	F.313		une
A473		astm	F.3427		une
A478		astm	F.3427-X15CrNi16		une
A479		astm	X19CrNi17-2		une
A484		astm	Czechia		4
A493		astm			
A580		astm	17 XXX NN		csn
A593		astm	17145		csn
A594		astm	17145PH		csn
F1613		astm	17150VN		csn
F2281		astm	France		2
F738		astm			
F836		astm	Z15CN16-02		afnor
F899		astm	Z15CNi6.02		afnor
Russia / CIS		8	United States / Aerospace		2
14Ch17N2		gost	5628		ams
14KH17N2		gost	5682		ams
20Ch17N2	This grade's own name	gost	Japan		2
20KH17N2		gost			
20X17H2		gost	SUS 431		jis
20X17H2		gost	SUS 431FB		jis
2X17H2		gost	China		2
cr.20X17H2		gost			
1Cr17Ni2					gb
ML1Cr17Ni2					gb
Poland		5	Italy		2
2H17N2		pn			
4H17N		pn			
4H17N 2 2H17N2		pn	X16CrNi1		uni
H17N2		pn	X16CrNi16		uni
H17N2A		pn	Sweden		1
Europe		4			
1.4057		din-en	2321		ss
X 20 CrNi 17 2	This grade's own name	din-en	Slovakia		1
X17CrNi16-2	This grade's own name	din-en			
X22CrNi17	This grade's own name	din-en	17 145		stn
			Serbia		1
			Č.4570		srps
			former Yugoslavia		1
			Č.4570		jus

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 431 S 29 En57

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

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ISSUED
Aug 20, 2026