

MATERIAL NUMBER 1.7034 · CLASS 1.7

45CrH

Material no. 1.7034

also listed as 37Cr4

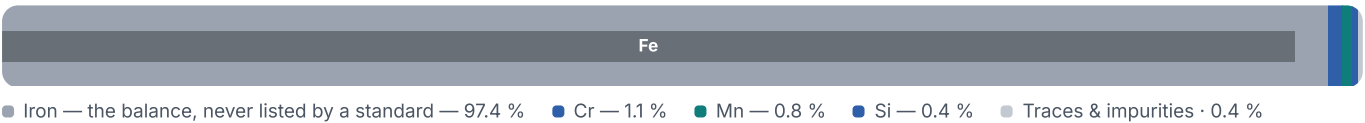
Chemical composition, mechanical and physical property values, and 104 standard designations from 23 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 104 in 23 regions	PROPERTY VALUES 14 on file
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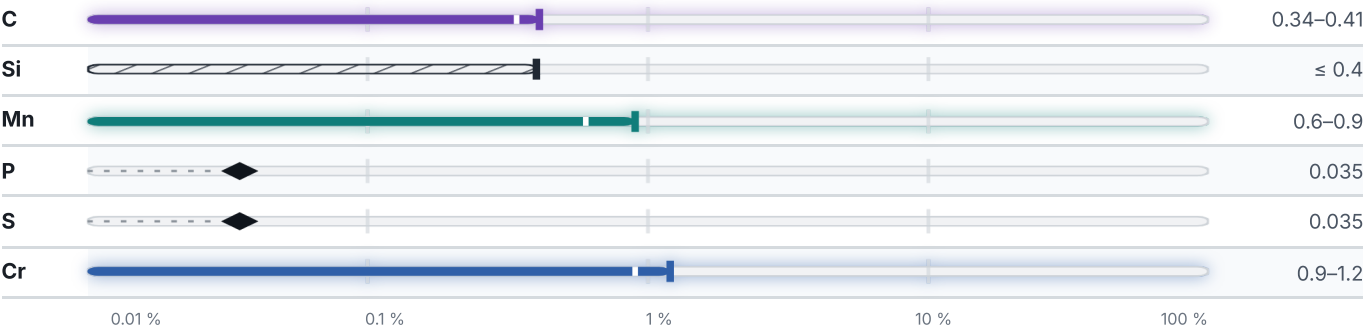
Chemical composition

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, Mo.

Mechanical properties

18 values across 5 conditions

CONDITION · DIMENSION	RM N/mm ²	A5 %	HB		
Pipe, GOST 8731-87	657	9	–		
Pipe cooling strain, GOST 8733-74	618	14	–		
(annealing) , GOST 4543-71	–	–	217		
Pipe GOST 8731-87	–	–	269		
Pipe GOST 8733-74	–	–	217		
Bar GOST 10702-78	–	–	179		
QUENCHED AND TEMPERED · ROUND PRODUCTS			A % · Lo = 5,65 √So		
≤ 16			11		
16 – 40			13		
40 – 100			14		
TREATED TO IMPROVE SHEARABILITY			HB		
Treated to improve shearability			255		
SOFT ANNEALED			HB		
Soft annealed			235		
QUENCHING 860°C, OIL, DRAWING 500°C, WATER	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Ø 25	980	785	10	45	590

Physical properties

8 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	7.82	214	–	–	–	210
100	7.8	211	11.9	46	466	285
200	7.77	206	12.5	42.7	508	346
300	7.74	203	13.2	42.3	529	425
400	7.7	185	13.8	38.5	563	528
500	7.67	176	14.1	35.6	592	642
600	7.63	164	14.4	31.9	622	780
700	7.59	143	14.6	28.8	634	936

CONDITION · DIMENSION	RHO g/cm³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
800	7.61	132	–	26	664	1100
900	7.56	–	–	26.7	–	1140
1000	7.51	–	–	28	–	1170
1100	7.47	–	–	28.8	–	120
1200	7.43	–	–	–	–	1230
PROPERTY				VALUE	UNIT	
Density				7.85	g/cm³	
Transformation point Ac1				743	°C	
Transformation point Ac3				782	°C	
Transformation point Ar3				730	°C	
Transformation point Ar1				693	°C	

Technological properties

PROPERTY	VALUE	UNIT
Weldability	hard weldability.	
Flake sensitivity	predisposed	
Temper brittleness	predisposed	

Heat treatment

6 regimes

STEP	TEMPERATURE	MEDIUM
source joins the operations with (or)		
Annealing	Temperature not stated	—
Tempering	Temperature not stated	—
Annealing	Temperature not stated	—
source joins the operations with + / procedural order		
Quenching	820–860 °C	—
Tempering	540–680 °C	—
Annealing	Temperature not stated	—
source joins the operations with + / procedural order		
Quenching	820–860 °C	—
Tempering	540–680 °C	—

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

Designations across standards

104 designations · 5 documented as identical

United States	12	United Kingdom	8
G51350	This grade's own name uns	37Cr4	bs
H51350	This grade's own name uns	41Cr4	bs
5135	This grade's own name aisi-sae	530A36	bs
5135H	This grade's own name aisi-sae	530A40	bs
5140	aisi-sae	530H36	bs
5140H	aisi-sae	530H40	bs
5140RH	aisi-sae	530M36	bs
G51350	aisi-sae	530M40	bs
G51400	aisi-sae		
Gr.5135	aisi-sae	Japan	8
H51350	aisi-sae	SCr 3 H	jis
H51400	aisi-sae	SCr3	jis
		SCr35H	jis
		SCr4	jis
		SCr435	jis
		SCr435H	jis
		SCr440	jis
		SCr440H	jis
Spain	11	Italy	8
37Cr4	une	36CrMn4	uni
38Cr4	une	36CrMn5	uni
38Cr4DF	une	37Cr4	uni
41Cr4	une	38Cr4	uni
41Cr4DF	une	38Cr4KB	uni
42Cr4	une	38CrMn4KB	uni
F.1201 -38 Cr 4	une	41Cr4	uni
F.1202	une	41Cr4KB	uni
F.1210	une		
F.1211	une	France	6
F1201	une	37Cr4	afnor
		38C4	afnor
		38C4FF	afnor
		41Cr4	afnor
		42C4	afnor
		42C4TS	afnor
China	9		
35Cr	gb		
38CrA	gb		
40Cr	gb		
40CrA	gb		
40CrH	gb		
45Cr	gb		
45CrH	gb		
ML38CrA	gb		
ML40Cr	gb		

Russia / CIS	6	Romania	3
38ChA	gost	40Cr10	stas
38KHA	gost	40Cr10q	stas
38KHA	gost	40Cr10X	stas
38XA	gost		
40KH	gost	Belgium	3
40X	gost	37Cr4	nbn
		41Cr4	nbn
		45C4	nbn
International	5		
34Cr4	iso	Europe	2
34CrS4	iso		
37Cr4	iso	37Cr4	This grade's own name din-en
37CrS4	iso	46Cr2	din-en
46Cr2	iso		
Hungary	4	Australia / New Zealand	2
37Cr4	msz	5132H	as-nzs
41Cr4	msz	5140	as-nzs
Cr2Z	msz		
Cr3Z	msz	Sweden	1
		2245	ss
Bulgaria	4	Czechia	1
37Cr4	bds	14140	csn
38ChA	bds		
40Ch	bds	Slovakia	1
41Cr4	bds	14 140	stn
South Korea	4	Latin America	1
SCr435	ks	5135	copant
SCr435H	ks		
SCr440	ks	Serbia	1
SCr440H	ks	Č.4134	srps
Poland	3	Austria	1
38HA	pn	41Cr4SP	onorm
40H	pn		
40HA	pn		

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 45CrH

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

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ISSUED

Aug 20, 2026