

MATERIAL NUMBER 1.0912 · CLASS 1.0

1.0912

Chemical composition, mechanical and physical property values, and 31 standard designations from 11 regions.

DENSITY

7.85 g/cm³

OTHER DESIGNATIONS

31 in 11 regions

PROPERTY VALUES

14 on file

Chemical composition

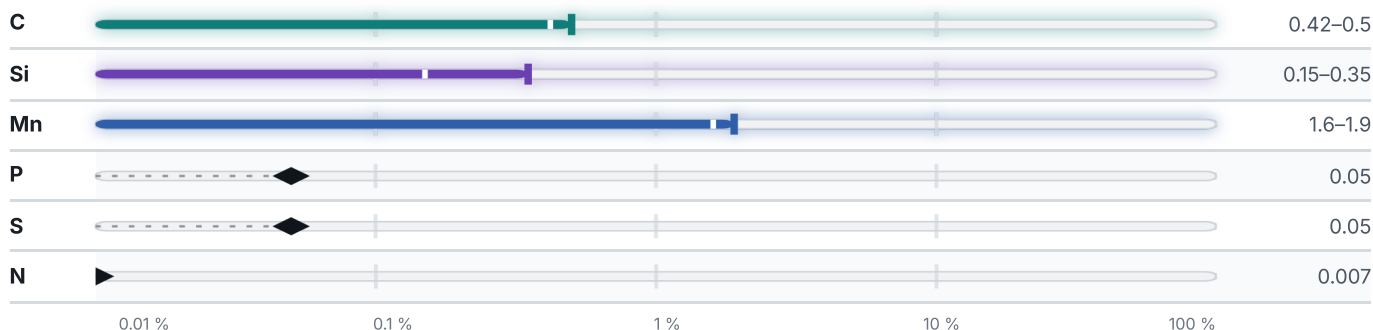
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 97.4 % ● Mn — 1.8 % ● C — 0.5 % ● Si — 0.3 % ● Traces & impurities · 0.1 %

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

6 values across 2 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
Bar, GOST 4543-71	1420	1275	7	35	390

CONDITION · DIMENSION	HB
45KHN2MFA (45XH2MΦA) (annealing) , GOST 4543-71	269

Physical properties

8 values

CONDITION · DIMENSION	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
20	216	–	34	–	300
100	207	11	34	480	363
200	197	11.6	33	500	460
300	188	12.1	32	520	557
400	176	12.7	31	540	677
500	168	13.3	30	555	822
600	152	13.7	29	–	993
700	136	13.9	27	–	1160
800	128	11.9	26	–	–

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³
Transformation point Ac1	735	°C
Transformation point Ac3	825	°C
Transformation point Ar3	470	°C
Transformation point Ar1	370	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	hard weldability.	
Flake sensitivity	predisposed	
Temper brittleness	not predisposed	

Heat treatment

5 regimes

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

STEP	TEMPERATURE	MEDIUM
Normalizing	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		
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	—

Designations across standards

31 designations · 5 documented as identical

United States	8	Japan	3
G13450 This grade's own name	uns	S45C	jis
H13450 This grade's own name	uns	S48C	jis
1040	aisi-sae	SMn443	jis
1045	aisi-sae		
1046	aisi-sae	China	3
1345 This grade's own name	aisi-sae	45	gb
1345H This grade's own name	aisi-sae	45Mn2	gb
G10460	aisi-sae	ML45Mn	gb
Russia / CIS	7	Czechia	2
45G	gost	13 250 PH	csn
45KHN2MFA	gost	13250	csn
45Г2	gost		
45XHMΦA	gost	Europe	1
4KH5V2FS	gost	46Mn7 This grade's own name	din-en
AS45G2	gost		
ЭИ958	gost	France	1
		C45E	afnor
United Kingdom	3		
080M46	bs	Italy	1
C45	bs	C45E	uni
C45E	bs		
		Poland	1
		45G	pn

Bulgaria	1
45G	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 1.0912
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	1.0912	Aug 20, 2026