

MATERIAL NUMBER 1.1192 · CLASS 1.1

VCH45

Material no. 1.1192

also listed as C45EC

Chemical composition, mechanical and physical property values, and 14 standard designations from 3 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 14 in 3 regions	PROPERTY VALUES 16 on file
--	--	--------------------------------------

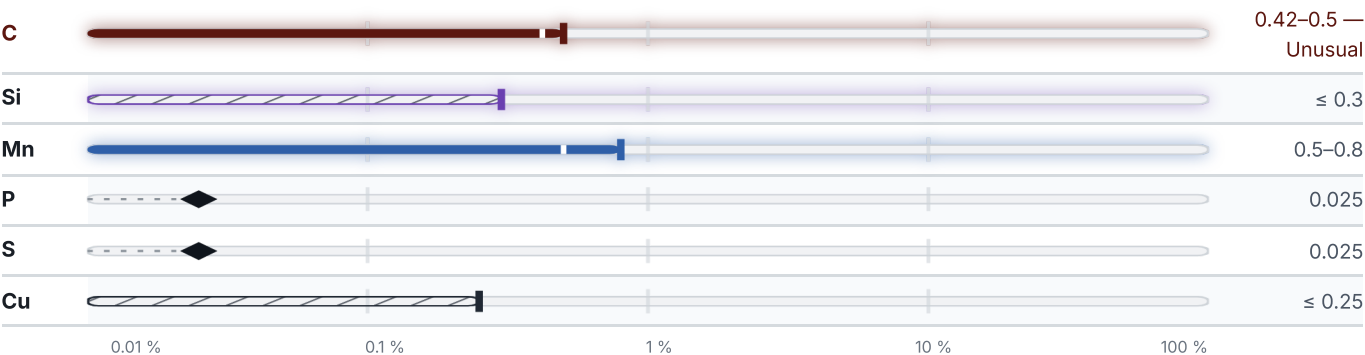
Chemical composition

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, Cr, Mo.

Mechanical properties

24 values across 4 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	HB
Pipe, GOST 8731-87	588	323	14	–	–
Rolled stock cold-worked , GOST 1050-88	640	–	6	30	–
Rolled stock annealed , GOST 1050-88	540	–	13	40	–
Band annealed , GOST 2284-79	440–690	–	14	–	–
Band cold-worked , GOST 2284-79	690–1030	–	–	–	–
Pipe GOST 8731-87	–	–	–	–	207
Rolled stock GOST 1050-88	–	–	–	–	229
CONDITION · DIMENSION	RM N/mm ²		Z %		
Bar cold-drawn , GOST 10702-78	590		40		
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %	
to 80	600	355	16	40	
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %	
6 - 60	600	355	16	40	

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)
20	7.826	200	–	–	–
100	7.799	201	11.9	48	473
200	7.769	193	12.7	47	494
300	7.735	190	13.4	44	515
400	7.698	172	14.1	41	536
500	7.662	–	14.6	39	583
600	7.625	–	14.9	36	578
700	7.587	–	15.2	31	611
800	7.595	–	–	27	720
900	–	–	–	26	708

PROPERTY	VALUE	UNIT
Density	7.85	g/cm³
Transformation point Ac1	730	°C
Transformation point Ac3	755	°C
Transformation point Ar3	690	°C
Transformation point Ar1	780	°C

Technological properties

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

Designations across standards

14 designations · 3 documented as identical

Russia / CIS		10	Europe		3
45		gost	C45EC	This grade's own name	din-en
45FL		gost	CF45		din-en
45GL		gost	Cq 45	This grade's own name	din-en
45KHN		gost			
45KHNM		gost	China		1
45L		gost	45	This grade's own name	gb
45T		gost			
CHVG45		gost			
VCH45		gost			
A45E		gost			

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 VCH45

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	1.1192	Aug 20, 2026