

MATERIAL NUMBER 1.0116 · CLASS 1.0

ВНЛ-3

Material no. 1.0116

also listed as S235J2G3

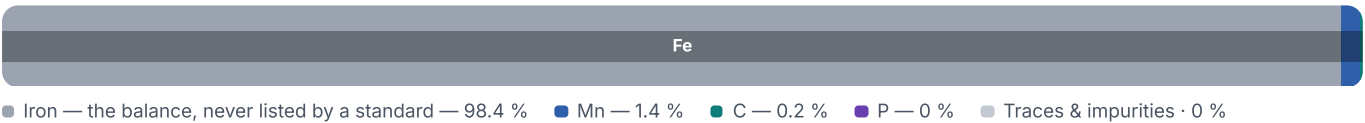
Chemical composition, mechanical and physical property values, and 66 standard designations from 11 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 66 in 11 regions	PROPERTY VALUES 12 on file
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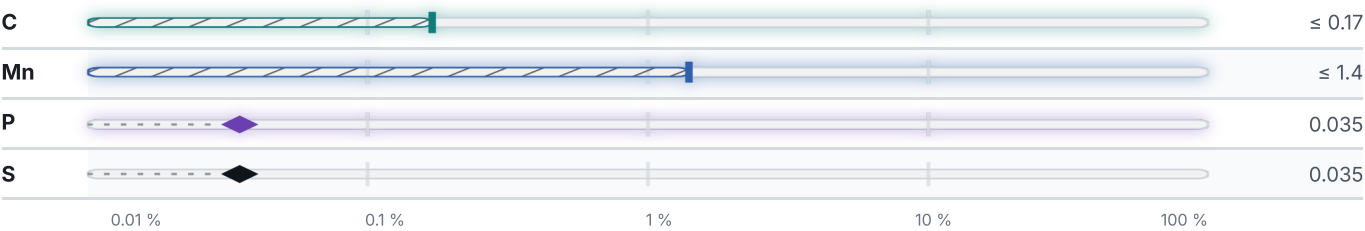
Chemical composition

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: Si, Ni, Cr, Mo.

Mechanical properties

26 values across 3 conditions

FLAT AND LONG PRODUCTS	REH N/mm ²	RM N/mm ²
≤ 3	—	360–510

FLAT AND LONG PRODUCTS	REH N/mm ²	RM N/mm ²	
3 – 100	–	360–510	
≤ 16	235	–	
16 – 40	225	–	
40 – 63	215	–	
63 – 80	215	–	
80 – 100	215	–	
100 – 150	195	350–500	
150 – 250	–	340–490	
150 – 200	185	–	
200 – 250	175	–	
250 – 400	–	330–480	
CONDITION · DIMENSION	A80 % · Lo = 80 mm	A % · Lo = 5,65 √So	
≤ 1	17	–	
1– 1.5	18	–	
1.5 – 2	19	–	
2 – 2.5	20	–	
2.5 – 3	21	–	
3 – 40	–	26	
40 – 63	–	25	
63 – 100	–	24	
100 – 150	–	22	
150 – 250	–	21	
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %
to 20	360–460	235	27

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa
20	7.85	213
100	–	208

CONDITION · DIMENSION	RHO g/cm ³	E GPa
200	–	202
300	–	195
400	–	187
500	–	176
600	–	167
700	–	153

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³
Transformation point Ac1	735	°C
Transformation point Ac3	850	°C
Transformation point Ar3	835	°C
Transformation point Ar1	680	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	without limitations.	
Flake sensitivity	not predisposed	
Temper brittleness	not predisposed	

Designations across standards

66 designations · 5 documented as identical

Russia / CIS		39	United States		11
08Kh14N5M2DL	gost		K01702	This grade's own name	uns
08X14H5M2ДЛ	gost		K02001	This grade's own name	uns
0Kh18N5G12AB	gost		K02601	This grade's own name	uns
0Kh20N4AG10	gost		K02701		uns
0X18H5Г12АБ	gost		A284		aisi-sae
0X20H4AГ10	gost		A573		aisi-sae
34KhM	gost		A611		aisi-sae
34XMA	gost		C A611 Gr. C		aisi-sae
A3	gost		A284		astm
CHKH3	gost		A573		astm
CHKH3T	gost		A611		astm
CHN3KHMSDH	gost				
L3	gost		United Kingdom		4
LR3	gost		4360-40C		bs
PA-ZhGr3	gost		D-1449-37C		bs
PA-ZhGr3M	gost		Gr 40D		bs
PA-ZhGr3TSs	gost		HS 37		bs
PA-ZhNGr3M	gost				
PF3	gost		France		3
PVK3	gost		E24-3		afnor
PZhR3	gost		E24-4		afnor
PZhV3	gost		S235J2G3		afnor
S245	gost				
VSt3Gps	gost		Europe		2
VSt3kp	gost		S235J2G3	This grade's own name	din-en
VSt3ps	gost		St 37-3 N	This grade's own name	din-en
VSt3sp	gost				
ACHS-3	gost		Spain		2
ВНЛ-3	gost		A360		une
ЖГр3	gost		A360 C		une
ЖГр3-20	gost				
ЖГр3-5.5	gost		Japan		1
ЖГр3M15	gost		SS34		jis
ЖГр3Цc4	gost				
ЖГр3Цc4У	gost		Sweden		1
ЖНГр3M15	gost		1313		ss
HH3	gost				
HH3Б	gost		Czechia		1
Ст3cp	gost		11378		csn
			Poland		1
			St3W		pn
			South Africa		1
			240 WDD		sans

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 ВНЛ-3
Quotation, availability, mill certificate or a technical question — directly on the material page.

Start an enquiry

DATASHEET ONLINE
View the material page

GRADE SEARCH
Search all grades

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ISSUED
Aug 20, 2026