1.4913, X19CRMONBVN11-1

1.4913, X19CrMoNbVN11-1 high-alloyed chrome-molybdenum Creep resisting martensitic stainless steel formulated for primary forming into wrought products, 1.4913, X19CrMoNbVN11-1 high-alloyed chrome-molybdenum Creep resisting steel martensitic stainless steel formulated for primary forming into wrought products, Using Bolts, Nuts, When working at elevated temperatures resistant to 600 ℃, characterized by good resistance and creep limit. 1.4913 is the Numeric designation for this material. X19CrMoNbVN11-1 is the Chemical designation.Other Spec. EN 10269-2006, EN 10302-2008, EN 10269-2013, EN 10088-1-2005, **DIN EN 10269-2014**

Chemical Composition

Grade	Chemical Composition %															
	C	Mn	Si	P	S	Cr	Ni	Mo	V	Nb	Al	W	B	N	Cu	Ti
EN 1.4913, X19CrMoNbVN11-1	0.17 - 0.23	0.4 - 0.9	Max 0.5	Max 0.025	Max 0.015	10.0 - 11.5	0.2 - 0.6	0.5 - 0.8	0.1 - 0.3	0.25 - 0.55	Max 0.02	Max 0.7	0.005 - 0.015	0.05 - 0.10	-	-
NF Z20CDNbV11, 56T5	0.18 - 0.25	0.3 - 0.8	0.1 - 0.5	Max 0.025	Max 0.015	10.0 - 12.0	Max 1.0	0.5 - 1.0	0.1 - 0.3	0.25 - 0.55	-	-	-	0.05 - 0.10	-	-
NF Z21CDNbV11	0.16 - 0.25	0.3 - 0.8	0.1 - 0.5	Max 0.030	Max 0.015	10.0 - 12.0	Max 1.0	0.5 - 1.0	0.1 - 0.3	0.25 - 0.55	-	-	-	0.05 - 0.10	-	-
ISO X18CrMnMoNbVN12, 1.4916	0.15 - 0.20	0.5 - 1.0	Max 0.5	Max 0.040	Max 0.030	10.0 - 13.0	Max 0.6	0.3 - 0.9	0.1 - 0.4	0.2 - 0.6	-	-	-	0.05 - 0.10	-	-
18Ch11MNFB, 18Х11МНФБ, 2Х11МФБН, ЕП291	0.15 - 0.21	0.6 - 1.0	Max 0.6	Max 0.030	Max 0.025	10.0 - 11.5	0.5 - 1.0	0.8 - 1.1	0.2 - 0.4	0.20 - 0.45	-	Max 0.2	-	-		

Mechanical Properties

1.4913, X19CrMoNbVN11-1 Mechanical properties acc. to EN 10088-1, EN 10269, EN 10302, Condition +QT

- Tensile strength, R_m: 900 - 1050 MPa
- The yield point, R_e: > 750 MPa
- Elongation, A:> 12%
- Contraction, Z: >40%
- Impact resistance, $KV_{20℃}$: >20J
- Modulus of elasticity, E: 216 GPa
- Thermal capacity, $c_{p20℃}$: 460 J * kg^{-1} * K^{-1}
- Thermal conductivity, λ: 24,0 W * m^{-1} * K^{-1}
- Linear expansion coefficient, α: 10,5 * 10^{-6} K^{-1}

Thermal Properties

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Properties	Temperature (°C)											
	50	100	150	200	250	300	350	400	450	500	550	600
p0.2 (MPa)	Max 726	Max 701	Max 676	Max 651	Max 643	Max 627	Max 610	Max 577	Max 544	Max 495	Max 412	Max 305

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