

Martensitic Steel

July 2016 - rev.1.0

KLEINOX 4543-455 KL

DIN X3CrNiCuTiNb12-9

ASTM F899

CHEMICAL COMPOSITION %

C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni%	Cu %	Ti%	Nb/Ta %	Fe%
Max	Max	Max	Max	Max	11,00	Max	7,50	1,50	0,90	0,10	balance
0,03	0,50	0,50	0,015	0,015	12,50	0,50	9,50	2,50	1,40	0,50	

USES AND APPLICATIONS

KLEINOX 4543 (AISI XM-16) is a precipitation hardenable martensitic stainless steel. Its main attribute is its simplicity to use. Its forming is easy and the parts made out of it present a good corrosion resistance, similar to this of 15-17%Cr martensitic stainless steels. Furthermore, its stress corrosion resistance increases with the age hardening intensity. In the age hardened condition it has a high strength coupled with an excellent toughness.

Performing a correct heat treatment, it may reach 48 HRc hardness.

This steel is well indicated for the production of surgical instruments, cutting tools, surgical needles and spindles.

EXECUTIONS

Diameters	1.00 - 15.00 mm
Tolerances	ISO h8 (up to h5)
Delivery conditions	in cold drawn or ground bars 3m and Coils

MECHANICAL PROPERTIES

Magnetism	magnetized
Welding	good welding, no preheating avoid oxyacetylene welding
Cold working	it's recommended utilization at anneal condition (A condition)
Cutting speed	25-35 m/min
Heat treatment	solubilization: 480 - 540°C; furnace or air cooling
Precipitation hardening	480 - 540°C. 4h furnace. air cooling.
Resiliency E 20°C	(GPa) 200
Specific weight	(kg/dm ³) 7,76
Heat conductivity 20°C	(W/m K) 18,0
Specific Heat 20°C	(kJ/kg K) 0.46
Electrical resistivity	(Ω mm ² /m) 0.76

OTHER INFORMATION

Diagrams, treatment tabs or other information on request.