



## TECHNICAL DATASHEET

**Custom 455<sup>®</sup> – 1.4543 – Xm16 - X3CrNiCuTi 12-9-2  
FT 038 – Version 0**

A precipitation-hardened, martensitic stainless steel that offers exceptional hardness and mechanical strength. It is delivered in a machinable, solution heat treated state. Given its high mechanical strength to torsion torque, this alloy is particularly recommended for use in tools subjected to torque.

APPLICATIONS	ADVANTAGES
Surgical instruments Chemical, pharmaceutical and food industries	High corrosion resistance Toughness Torque resistance
STANDARDS	SHAPES
WERKSTOFF NR. 1.4543 ASTM F899 ASTM A564 AMS 5617 NFS 94-090	<b>BAR</b>  Diameter 4.76-63.5 mm  Length 3000-3500 mm  Tolerance h9 $\varnothing$ <30 h11 $\varnothing$ $\geq$ 30.0

### ➤ CHEMICAL COMPOSITION

%	C	P	Si	Ni	Cu	Nb/Ta	Ti	Mn	S	Cr	Mo	Fe
min				7.50	1.50	0.10	0.80			11.00		residue
max	0.05	0.040	0.50	9.50	2.50	0.50	1.40	0.50	0.030	12.50	0.50	



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### ➤ HEAT TREATMENT

Condition		Hardness
Annealed	Heated to 815-845°C, rapid cooling	331 HB
Ageing	4 hours at 482°C	49 HRc

### ➤ MECHANICAL PROPERTIES

Condition	Rm Tensile strength (MPa)	Rp0.2 Yield strength (MPa)	4D elongation (%)	Ra (%)	Hardness HRc
Solution heat treated	965	793	14	60	31
H900 - 482°C	1724	1689	10	45	49
H950 - 510°C	1620	1551	12	50	48
H1000 - 538°C	1448	1379	14	55	45
H1050 - 566 °C	1310	1207	15	55	40

### ➤ PHYSICAL PROPERTIES

Density (g/cm <sup>3</sup> )	7.8
Typical hardness (HRc)	40- 49
Modulus of elasticity at 20°C (N/mm <sup>2</sup> )	200 x10 <sup>3</sup>
Thermal conductivity at 20°C (W/m °C)	18
Electrical resistance μohm-mm	758 (H950)
Magnetic	YES

*The information and technical data contained in this sheet are for information purposes only. Only the information written on our material analysis certificates will be official.*