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INFORMATION SHEET

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MATERIAL	AISI 302	FAMILY	Austenitic stainless steel	SHEET #	AISI302.FIE
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EQUIVALENCY				
DIN	AFNOR	UNS	SS	ISO
1.4310 (X10CrNi18-8)	Z10 CN 18-09	S30200	2331	4310-301-00-1

USE			
This material is commonly used for the manufacture of the following product elements:			
<input type="checkbox"/> Cannula (tube)	<input checked="" type="checkbox"/> Stylet (wire)	<input type="checkbox"/> Hub	<input type="checkbox"/> Handle
<input type="checkbox"/> Adaptor	<input type="checkbox"/> Stopcock		

GENERAL CHARACTERISTICS		
Straightness	Circularity	Concentricity (only tube)
2 mm difference for 1'000 mm length	- Wire: Circularity \cong OD tolerance	\leq 10% tube thickness
Outer surface finish	Inner surface finish (only tube)	-
N5 ($R_{a\ max} = 0.4$)	N7 ($R_{a\ max} = 1.6$)	-

MANUFACTURING			
Turing, drilling, milling	Grinding	Laser cutting	Electro erosion machining
Bad	Excellent	Good	Excellent
Sharpening	Polishing	Laser marking	-
Good	Good	Excellent	-

ASSEMBLING			
Bonding	Press fit	Soldering	Laser welding / Plasma
Good	Not suggested	Good	Good

CHEMICAL COMPOSITION [%]									
C	Si	Mn	P	S	Cr	Ni	N	-	-
≤ 0.15	≤ 1.0	≤ 2.0	≤ 0.045	≤ 0.03	17.0-19.0	8.0-10.0	≤ 0.1	-	-

The reference to the chemical composition is the one from the standard ASTM F899.

The chemical composition from other equivalent standards may be slightly different from that provided in this information sheet.

MECHANICAL PROPERTIES	
Material state	Tensile strength Rm [MPa]
Hard	1'400-2'400

PHYSICAL PROPERTIES		
Density ρ [kg/m ³]	Electrical resistivity ρ [$\mu\Omega \times m$]	Thermal conductivity λ [W/(m \times K)] at 20°C
7'900	0.72	16.2
Modulus of elasticity E [GPa] at 20°C	Coefficient of linear thermal expansion α [$10^{-6} / ^\circ C$] between 20°C and 100°C	Specific heat capacity C _p [J/(kg \times K)] at 20°C
200	17.2	500

Corrosion resistance
Good corrosion resistance

BIOCOMPATIBILITY (ISO 10993-1)
The austenitic stainless steel AISI 302 is a metallic material compatible with standards of materials for medical devices. It is referenced in the American standard of surgical instruments ASTM F899 and therefore can be considered clinically established and a recognized material (state-of-the-art) for medical devices.
The customer is responsible to verify the compatibility of the material selected from its intended use.

STANDARDS	
ISO 15510	Stainless steels -Chemical composition
ISO 9626	Stainless steel needle tubing for the manufacture of medical devices
ISO 7153-1	Surgical instruments - Metallic materials - Part 1: Stainless steel
ASTM F899	Standard Specification for Wrought Stainless Steels for Surgical Instruments

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06.04.2017	Page 1/1
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