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INFORMATION SHEET

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MATERIAL	AISI 302	FAMILY	Austenitic stainless steel	SHEET #	AISI302.FIE

EQUIVALENCY				
DIN	**AFNOR**	**UNS**	**SS**	**ISO**
1.4310 (X10CrNi18-8)	Z10 CN 18-09	S30200	2331	4310-301-00-I

USE

This material is commonly used for the manufacture of the following product elements:

☐ Cannula (tube) ☒ Stylet (wire) ☐ Hub ☐ Handle
☐ Adaptor ☐ Stopcock

GENERAL CHARACTERISTICS		
Straightness	**Circularity**	**Concentricity** *(only tube)*
2 mm difference for 1'000 mm length	- Wire: Circularity ≅ OD tolerance	≤ 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
Sharping	**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 PROPRIETIES	
Material state	**Tensile strength** Rm [MPa]
Hard	1'400-2'400

PHYSICAL PROPRIETIES		
Density ρ [kg/m^3]	**Electrical resistivity** ρ [$\mu\Omega \times$ m]	**Thermal conductivity** λ [W/(m × 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} / °C] between 20°C and 100°C	**Specific heat capacity** C_p [J/(kg × 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