MATERIAL | AISI 316LVM
FAMILY | Austenitic stainless steel
SHEET # | AISI316LVM.FIE

EQUIVALENCY
- DIN 1.4441 (X2CrNiMo18-15-3)
- UNS Z 2 CN 18.14.3
- SS S31673
- ISO -

USE
This material is commonly used for the manufacture of the following product elements:
- Cannula (tube)
- Stylet (wire)
- Adaptor
- Stopcock
- Hub
- Handle

GENERAL CHARACTERISTICS

Straightness
- 2 mm difference for 1'000 mm length
- Tube: Circularity ≅ ID tolerance
- Wire: Circularity ≅ OD tolerance
- ≤ 10% tube thickness

Outer surface finish
- N5 (R_a max = 0.4)
- N7 (R_a max = 1.6)

CIRCULARITY
- ID tolerance
- OD tolerance
- 10% tube thickness

MANUFACTURING
- Turing, drilling, milling
- Grinding
- Laser cutting
- Electro erosion machining
- Bad: Excellent
- Good: Excellent
- Sharping
- Polishing
- Laser marking
- Good: Excellent
- ASSEMBLING
- Bonding
- Press fit
- Soldering
- Laser welding / Plasma
- Good: Excellent

CHEMICAL COMPOSITION [%]

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>N</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 0.03</td>
<td>≤ 1.0</td>
<td>≤ 2.0</td>
<td>≤ 0.025</td>
<td>≤ 0.01</td>
<td>17-19</td>
<td>13.0-15.0</td>
<td>2.25-3.00</td>
<td>≤ 0.1</td>
<td>≤ 0.5</td>
</tr>
</tbody>
</table>

MECHANICAL PROPERTIES
- Tensile strength
- Rm [MPa]
- Hard
- 1'200 – 2'000

PHYSICAL PROPERTIES
- Density
- ρ [kg/m³]
- 7.980
- Electrical resistivity
- ρ [μΩ·m]
- 0.75
- Thermal conductivity
- λ [W/(m·K)] at 20°C
- 15
- Modulus of elasticity
- E [GPa] at 20°C
- 200
- Coefficient of linear thermal expansion
- α [10^-6/°C] between 20°C and 100°C
- 17.5
- Specific heat capacity
- C_p [J/(kg·K)] at 20°C
- 500

BIOCOMPATIBILITY (ISO 10993-1)
- Excellent corrosion resistance

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
- ASTM F138: Standard Specification for Wrought 18Cr-14Ni-2 5Mo bar and wire for surgical implants

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