



# DMV 316LVM

## 1. Applications

DMV 316LVM is characterised by:

- High strength
- Excellent cold workability with suitability for products requiring a high quality surface finishes
- Refined microcleanliness and structural homogeneity

Applications include:

- Medical Trauma and Cardio
- Ultra High Purity environments – instrumentation systems and equipment
- As a high quality redraw material

Carbon <b>C</b> ≤0.025	Chromium <b>Cr</b> 17.5	Nickel <b>Ni</b> 14	
Molybdenum <b>Mo</b> 2.8	Nitrogen <b>N</b> ≤0.1		
Manganese <b>Mn</b> 1.7	Silicon <b>Si</b> 0.6	Phosphorus <b>P</b> ≤0.025	Sulfur <b>S</b> ≤0.003

Chemical composition nominal %

## 2. Main Features

DMV 316LVM is a vacuum remelted, molybdenum alloyed, austenitic stainless steel.

## 3. Description

### 3.1 Reference Standards

- UNS S31673
- ISO 5832 Part 1
- ASTM F138 Bar

### 3.2 Chemical Composition

DMV 316LVM typical values:

	Weight %
<b>C</b>	≤0.025
<b>Si</b>	0.6
<b>Mn</b>	1.7
<b>P</b>	≤0.025
<b>S</b>	≤0.003
<b>N</b>	≤0.1
<b>Cr</b>	17.5
<b>Ni</b>	14.0
<b>Mo</b>	2.8
<b>Fe</b>	Balance

## 3.3 Mechanical Properties

The following are indicative properties:

Condition	Tensile Strength		Proof strength RP0.2		Elongation, A%
	MPa	ksi	MPa	ksi	
<b>Tube- thick wall annealed</b>	515-690	75-100	220	32	≥45
<b>Tube- thick wall cold worked</b>	880	127	690	100	≥12%
<b>Tube- thin wall annealed</b>	490-690	71-100	190	28	≥40%
<b>Tube- thin wall cold worked</b>	880	127	690	100	≥12%

( ) = calculated values

## 3.4 Physical properties

Density at 20°C	
g/cm <sup>3</sup>	lbs / in <sup>3</sup>
8.0	0.29

Specific heat capacity (20°C)	
J/(kg°C)	Btu/(lb °F)
485	0.11

Modulus of elasticity x10 <sup>3</sup> (20 °C)	
MPa	Okpsi
200	29

Thermal Conductivity 20 °C	
W/(m °C)	Btu/(ft h °F)
14	0.29

( ) = calculated values

### 3.5 Corrosion Resistance

DMV 316LVM has very good corrosion resistance bio-medical environments due to:

- High purity and high cleanliness and low ferrite content
- Pitting and crevice corrosion due to high molybdenum content

### 3.6 Microcleanliness

DMV 316LVM demonstrates a high level of microcleanliness, control of non-metallic inclusions and freedom of foreign phases.

### Products & Applications Delivery Condition

Pipes and tubes are delivered in cold or hot finished condition depending on size and specification. Normally they will be supplied in annealed condition.

### ISO4967 1969 Plate II Practice A Illustrative values

A-Sulphide		B-Alumina		C-Silicate		D-Globular Oxide		Total A+B+C+D		
1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0			
Thin	Heavy	T	H	T	H	T	H	T	H	Total
0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.00	1.00	2.00

## 4. Supply Range

### 4.1 Dimensional Range

<b>Trauma</b> Nails & Screws for internal fracture fixation.	<b>Dimensions:</b> Outside diameter from 6.0 to 20 mm. Wall Thickness from 1.0 to 5.0 mm.	
<b>Equipment</b> Surgical Tools & Instruments: endoscopic equipment, needles.	<b>Dimensions:</b> Outside diameter from 1.6 to 25 mm. Wall thickness from 0.1 to 2.0 mm.	
<b>Life Sciences</b> Precision Tubing used in Liquid Chromatography applications.	<b>Dimensions:</b> Outside diameter from 1.6 (1/16") to 8 mm (0.314").	
<b>Re-Draw Raw Materials</b> Austenitic grades. AOD and re-melt options.	<b>Dimensions:</b> Outside diameter from 38 to 63,5 mm. Wall thickness from 3.2 to 20 mm.	

Nominal Dimensional Range		
Cold Finished		
<b>Outside Diameter</b>	mm	inch
<b>min</b>	1.6	0.063
<b>max</b>	244.5	9.626
<b>Wall Thickness</b>	mm	inch
<b>min</b>	0.1	0.004
<b>max</b>	40	1.575
Hot Finished		
<b>Outside Diameter</b>	mm	inch
<b>min</b>	32	1.260
<b>max</b>	280	11.024
<b>Wall Thickness</b>	mm	inch
<b>min</b>	2.8	0.110
<b>max</b>	60	2.362

Specific dimensions by grade available upon request.

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