

1.4435 Stainless Steel Seamless Pipe Specification (316LMo)

316LMo is an acid-resisting austenitic CrNiMo-Steel with 18% Cr, approx. 14% Ni and at least 2.5% Mo. Due to the increased Mo-content, this material has a significantly improved corrosion resistance compared to other CrNi-Steels. 316LMo is particularly strong against organic and inorganic acids as well as against halogen-containing media. Furthermore, it is also less susceptible to pitting. Its very low carbon content also improves the resistance to intergranular corrosion, allowing the use of this steel at temperatures up to 450 ° C in continuous operation. 316LMo can also be very well polished, very good deformable and can be easily welded.

Grade: 1.4435 Stainless Steel

Designation: X2CrNiMo18-14-3

Standard: EN 10216-5, DIN 17456 / DIN 17458

Product Form: Seamless Pipes & Tubes

1.4435 Equivalent Grades

Standard	Grade
EN	1.4435 (X2CrNiMo18-14-3)
UNS	S31603 (close to 316L but with higher Mo, often called "high Mo 316L")
ASTM	316L Modified (Special quality)
Werkstoff Nr.	1.4435

1. Chemical Composition (EN 10088-3)

Element	% Content
C (Carbon)	≤ 0.030
Si (Silicon)	≤ 1.00
Mn (Manganese)	≤ 2.00
P (Phosphorus)	≤ 0.045
S (Sulfur)	≤ 0.015

Element	% Content
Cr (Chromium)	17.0 - 18.5
Ni (Nickel)	12.5 - 15.0
Mo (Molybdenum)	2.5 - 3.0
N (Nitrogen)	≤ 0.11
Fe (Iron)	Balance

Key difference vs 316L (1.4404): 1.4435 has **higher Mo content**, giving it **better pitting resistance** in chloride-rich environments.

2. Mechanical Properties (at Room Temperature)

Property	Value
Tensile Strength (Rm)	500 - 700 MPa
Yield Strength (Rp0.2)	≥ 200 MPa
Elongation (A5)	≥ 40 %
Hardness	≤ 217 HB

3. Available Dimensions

- **Outside Diameter (OD):** 6 mm - 530 mm
 - **Wall Thickness (WT):** 0.5 mm - 40 mm
 - **Length:** Up to 12 m (random, cut, or custom lengths)
 - **Finish:** Annealed & Pickled (AP), Bright Annealed (BA), Polished
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4. Manufacturing & Standards

- Manufactured according to:
 - **EN 10216-5** (Seamless stainless tubes for pressure purposes)
 - **DIN 17456 / DIN 17458** (Stainless seamless tubes)
 - Equivalent ASTM standards: **ASTM A312, ASTM A213**

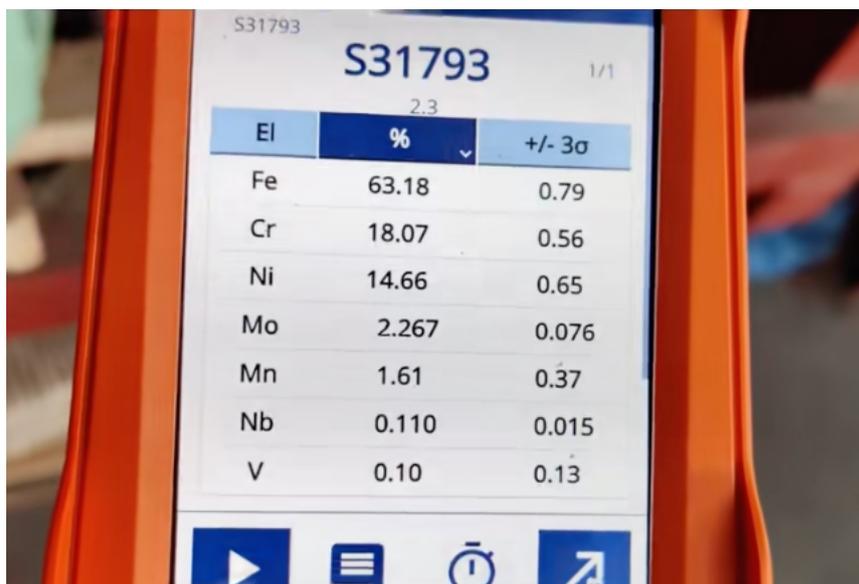
- Heat Treatment: **Solution Annealed**
 - Testing: Eddy current, hydrostatic, PMI (Positive Material Identification), mechanical tests, corrosion testing as per EN/ASTM
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5. Corrosion Resistance

- Excellent resistance to **pitting and crevice corrosion** (especially in chloride solutions).
 - Superior **intergranular corrosion resistance** even after welding.
 - Widely used in **high-purity applications** like pharmaceuticals, biotech, and chemical processing.
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6. Applications

- Pharmaceutical and biotechnology piping systems
- Chemical process equipment
- Food & beverage industry pipelines
- Marine & offshore applications
- Heat exchangers and condensers



El	%	+/- 3σ
Fe	63.18	0.79
Cr	18.07	0.56
Ni	14.66	0.65
Mo	2.267	0.076
Mn	1.61	0.37
Nb	0.110	0.015
V	0.10	0.13