



# CEWELD 316LMn Tig

**TYPE** Tig filler metal for welding fully austenitic CrNiMnMo stainless steels and low temperature steels. (Type 19 12 3Mn, 1.4455)

**APPLICATIONS** CEWELD® 316LMn Tig is designed for joining and surfacing of similar and matching austenitic CrNi(N) and CrNiMo(Mn,N) steels / cast steel grades with 16 - 21% Cr, 6 - 13% Ni, and 3% Mo. It is particularly suitable for corrosion conditions in urea synthesis plants.

**PROPERTIES** CEWELD® 316LMn Tig offers excellent resistance to intercrystalline and wet corrosion at temperatures up to **350°C (662°F)**. Its corrosion resistance is comparable to low-carbon **CrNiMo(Mn,N)** steels and cast steel grades. It is seawater resistant and exhibits good resistance to nitric acid, with a maximum selective attack of **200 µm**.  
Physical & Metallurgical Properties

- Magnetism: Non-magnetic (Permeability in a field of 8000 A/m is 1.01 max.).
- Microstructure: Fully austenitic.
- Ferrite Content: Maximum 0.6%.
- Service Temperature: Maximum 350°C.

**Welding & Heat Treatment Guidelines**

To ensure the integrity of the weld and material properties, the following parameters must be observed:

- Heat Input: Maximum 1.5 kJ/mm.
- Interpass Temperature: Maximum 100°C.
- Preheating: For surfacing (cladding), preheat to 150°C in accordance with the base material requirements.
- Stress Relieving: Can be performed at 510°C for up to 20 hours.
- Tempering: Before the final layer, tempering can be done at a maximum of 530°C.

**CLASSIFICATION**

AWS	A 5.9: ER316LMn
EN ISO	14343-A: W 20 16 3 Mn N L
W.Nr.	1.4455
F-nr	6
FM	5

**SUITABLE FOR** **ISO 15608: 8.1 Austenitic ≤ 19 % Cr**  
 1.3941, 1.3945, 1.3948, 1.3951, 1.3952, 1.3953, 1.3955, 1.3964, 1.3965, 1.3964, 1.4315, 1.4401, 1.4404, 1.4411, 1.4429, 1.4435, 1.4438, 1.4439, 1.4449, 1.4561, 1.4571, 1.6902, 1.6903, 1.6905, 1.5662, X5 CrNiMo 17-12-2, X2CrNiMoN 22-15, X2CrNiMoN 18-14-3, X2CrNiMo 18-15, X8 CrMnNi 18-8, X2 CrNiMo 17-13-2, X2 CrNiMo 18-14-3, X2CrNiMoN 17-13-3, X6 CrNiMoTi 17-12-2, X2 CrNiMoN 17-13-5, X3 CrNiMo 18-12-3, X2 CrNiMo 18-15-4, X2 CrNiN 18-10, GX6 CrNi 18-10, GX5 CrNiNb 18-10, X5CrNi19-9, X1CrNiMoTi18-13-2, 10CrNiTi18-10, (G)X4CrNi18-3, X2CrNi18-13, X4CrNiMnMoN19-13-8,  
 UNS S31600, S31603, S31635, S31700, S31703, S30453  
 AISI 316, 316L, 316Ti, 317, 317L, 304LN  
 3,5 – 5% Ni-Steel

**APPROVALS** CE

**WELDING POSITIONS**

**TYPICAL CHEMICAL ANALYSIS OF THE FILLER METAL (%)**

C	Si	Mn	P	S	Cr	Ni	Mo	N
0.02	0.55	7.5	0.01	0.01	20	16	3	0.01

**MECHANICAL PROPERTIES**

Heat Treatment	R <sub>P0.2</sub> (MPa)	R <sub>m</sub> (MPa)	A <sub>5</sub> (%)	Impact Energy (J) ISO-V		Hardness
				RT		
As Welded	440	620	35	120		HRc



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REDRYING                      Not required

GAS ACC. EN ISO 14175      I1



# CEWELD 316LMn Tig

316LMN TIG 1,6 X 1000MM

Packaging	KG/unit	EanCode
Tube	5	8720663414984

316LMN TIG 2,0 X 1000MM

Packaging	KG/unit	EanCode
Tube	5	8720663415028

316LMN TIG 2,4 X 1000MM

Packaging	KG/unit	EanCode
Tube	5	8720663415066