

Technical data sheet 011121MBA	Stainless steel filler metal – Solid wire WA TSS/MSS 316NFL	 Welding Alloys
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CLASSIFICATION

ASME IIC SFA 5.9 / AWS A 5.9:	ER316LMn
EN ISO 14343-A:	W 20 16 3 Mn N L / G 20 16 3 Mn N L
Equivalent material number:	1.4455

DESCRIPTION

- GTAW rod / GMAW stainless steel solid wire
- Produces a fully austenitic modified 316L weld metal with improved corrosion and hot cracking resistance
- High resistance to hot cracking
- Excellent cryogenic toughness

APPLICATIONS

WA TSS/MSS 316NFL are suitable for welding stainless steels with an alloy content between 16 to 21% Cr, 6 to 13% Ni and up to 3% Mo, where enhanced resistance to pitting and acid corrosion is required as well as for low operating temperatures.

Examples:

AISI	UNS	Material number	EN Symbol
316	S31600	1.4401	X5 CrNiMo 17-12-2
		1.3951	X2CrNiMoN 22-15
		1.3952	X2CrNiMoN 18-14-3
		1.3953	X2CrNiMo 18-15
316L	S31603	1.3965	X8 CrMnNi 18-8
		1.4404	X2 CrNiMo 17-13-2
		1.4435	X2 CrNiMo 18-14-3
		1.4429	X2CrNiMoN 17-13-3
316Ti	S31635	1.4571	X6 CrNiMoTi 17-12-2
		1.4439	X2 CrNiMoN 17-13-5
317	S31700	1.4449	X3 CrNiMo 18-12-3
317L	S31703	1.4438	X2 CrNiMo 18-15-4
304LN	S30453	1.4311	X2 CrNiN 18-10
		1.6902	GX6 CrNi 18-10
		1.6905	GX5 CrNiNb 18-10

TYPICAL WIRE ANALYSIS (weight %)

C	Mn	Si	Cr	Ni	Mo	N	S	P
0.020	7	0.35	20.2	16	2.8	0.16	0.008	0.020

Typical ferrite level: 0 FN


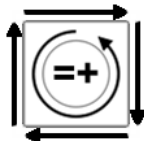
MINIMUM ALL-WELD METAL MECHANICAL PROPERTIES (GMAW)

Rm [MPa]	Rp0.2% [MPa]	As [%]	CVN [J]
480	300	25	-196°C: 32

TYPICAL ALL-WELD METAL MECHANICAL PROPERTIES (GMAW)

Rm [MPa]	Rp0.2% [MPa]	As [%]	CVN [J]
620	410	32	-196°C: 50

SHIELDING GAS – OPERATING CONDITIONS – WELDING POSITIONS

GTAW		GMAW	
Shielding gas according to EN ISO 14175	Welding positions Current type	Shielding gas according to EN ISO 14175	Welding positions Current type
I1 (100 % argon)		M12 mixed gas (Ar + 0.5-2.5% CO ₂) M13 mixed gas (Ar + 0.5-3% O ₂)	

PACKAGING

Spools	Ø mm	0.8	1.0	1.2	1.6
Rods	Ø x1000 mm	1.6	2.0	2.4	3.2

Other diameters are available on request

Welding products and techniques evolve constantly. All descriptions, illustrations and properties given in this data sheet are subject to change without notice and can only be considered as suitable for general guidance. This document is intended to help the user make the correct choice of product. It is his responsibility to assess its suitability for his intended application.