Arosta® 316L

EMR SAHARA®

CLASSIFICATION

AWS A5.4	E316L-16	**A-Nr**	8	**Mat-Nr**	1.4430
ISO 3581-A	E 19 12 3 L R 1 2	**F-Nr**	5		
		9606 FM	5		

TEMPERATURE RANGE

Pressurized parts : -120...+350°C
Oxidation resistance : n.a

GENERAL DESCRIPTION

Rutile-basic all position stainless steel electrode for 316L or equivalent steels
Molybdenum level min. 2.7 %
High resistance to general and intergranular corrosion
Smooth weld appearance
Easy slag release
Strong electrode coating
Weldable on AC and DC
Also available in vacuum sealed Sahara ReadyPack® (SRP)

WELDING POSITIONS (ISO/ASME)

PA/1G **PB/2F** **PC/2G** **PF/3Gu** **PE/4G** **PH/5Gu**

CURRENT TYPE

AC / DC + / -

APPROVALS

ABS	BV	DNV	GL	LR	RINA	RMRS	TÜV	DB
+	316L	316L	4571	316L	316L	316L	+	+

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	FN (acc.WRC 1992)
0.02	0.8	0.8	18.0	11.5	2.85	4-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) +20°C	Impact ISO-V(J) -20°C	Impact ISO-V(J) -120°C
Required: AWS A5.4		not required	min. 490	min. 30	not required		
ISO 3581-A		min. 320	min. 510	min. 25			
Typical values	AW	450	580	39	not required	60	40

PACKAGING AND AVAILABLE SIZES

	Diameter (mm)	1.5	2.0	2.5	3.2	4.0	5.0
	Length (mm)	250	300	350	350	350	350
carton box	**Pieces / unit**	140	200	135	150	90	65
	Net weight/unit (kg)	0.7	2.3	2.7	4.9	4.8	5.0
SRP	**Pieces / unit**	-	-	69	56	-	-
	Net weight/unit (kg)	-	-	1.4	1.8	-	-
Linc Can™	**Pieces / unit**	-	-	217	134	80	-
	Net weight/unit (kg)	-	-	4.7	4.4	4.2	-

Identification Imprint: 316L-16 / AROSTA 316 L Tip Color: pink

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EXAMPLES OF MATERIALS TO BE WELDED

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C <0.03%)					
	X2CrNiMo17-12-2		1.4404	(TP)316L	S31603
				CF-3M	J92800
	X2CrNiMo18-14-3		1.4435	(TP)316L	S31603
	X2CrNiMoN17-11-2		1.4406	(TP)316LN	S31653
	X2CrNiMoN17-13-3		1.4429		
Medium carbon (C >0.03%)					
	X4CrNiMo17-12-2		1.4401	(TP)316	S31600
	X4CrNiMo17-13-3		1.4436		
		GX5CrNiMo19-11	1.4408	CF 8M	J92900
Ti-, Nb stabilized					
	X6CrNiMoTi17-12-2		1.4571	316Ti	S31635
	X6CrNiMoNb17-12-2		1.4580	316Cb	S31640
	X6CrNiNb18-10		1.4550	(TP)347	S34700
		GX5CrNiNb19-10	1.4552	CF-8C	J92710

CALCULATION DATA

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (S)*	Energy - per electrode at max. current - E(kJ)	Dep. rate - per electrode at max. current - H(kg/h)	Weight/ 1000 pcs (kg)	Electrodes/ kg weldmetal B	kg electrodes/ kg weldmetal 1/N
1.5 x 250	20 - 40	DC+	25	19	0.44	5.8	330	1.92
2.0 x 300	30 - 50	DC+	42	44	0.58	10.7	150	1.61
2.5 x 350	40 - 75	DC+	50	86	0.88	19.9	82	1.61
3.2 x 350	60 - 110	DC+	57	157	1.3	32.9	49	1.61
4.0 x 350	80 - 150	DC+	64	240	1.7	49.2	32	1.59
5.0 x 350	140 - 220	DC+	67	396	2.6	77.1	20	1.59

*Stub end 35mm

WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions PA/1G	PB/2F	PC/2G	PF/3Gup	PE/4G	PH/5Gup
1.5	30A	35A	35A			
2.0	40A	45A	45A	40A	40A	40A
2.5	70A	70A	70A	60A	60A	60A
3.2	100A	100A	100A	70A	70A	70A
4.0	140A	140A	140A	80A		
5.0	180A	180A	180A			

For root pass, DC- is recommended