

Stainless Steel Wire

(AWS ER308)

The nominal composition (wt.-%) of this classification is 21 Cr, 10 Ni. Commercial specifications for filler and base metals vary in the minimum alloy requirements; consequently, the names 18-8, 19-9, and 20-10 are often associated with filler metals of this classification. This classification is most often used to weld base metals of similar composition, in particular, type 304.

Classification

AWS A5.9	ER308
ASME SFA 5.9	UNS S30880

Physical Properties

Tensile Strength	600MPa/mm ²
Elongation	40%

Welding Positions



Shielding Gas

Argon
Argon/O₂-mixtures

Polarity

MIG Direct current (DC)
TIG Alternating current (AC)

Chemical Composition

	C%	Cr%	Ni%	Mo%	Mn%	Si%	P%	S%	N%	Cu%
AWS Requirements	0.08	19.5-22.0	9.0-11.0	0.75	1.0-2.5	0.30-0.65	0.03	0.03	—	0.75
Typical Results	0.05	19.58	9.25	0.04	1.49	0.54	0.018	0.01	—	0.09

Diameter

	0.8mm	0.9mm	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
MIG Wire	...	...	...	...				
TIG Rod				...	...	...	...	...

Packaging

	D100	D200	D300	K300	KS300	Box
MIG Wire	1Kg	5Kgs	15Kgs			
TIG Rod						5-10Kgs

Stainless Steel Wire

(AWS ER309)

The nominal composition (wt.-%) of this classification is 24 Cr, 13 Ni. Filler metals of this classification are commonly used for welding similar alloys in wrought or cast form. Occasionally, they are used to weld type 304 and similar base metals where severe corrosion conditions exist requiring higher alloy weld metal. They are also used in dissimilar metal welds.

Classification

AWS A5.9	ER309
ASME SFA 5.9	UNS S30980

Physical Properties

Tensile Strength	600MPa/mm ²
Elongation	40%

Welding Positions



Shielding Gas

Argon
Argon/O₂-mixtures

Polarity

MIG Direct current (DC)
TIG Alternating current (AC)

Chemical Composition

	C%	Cr%	Ni%	Mo%	Mn%	Si%	P%	S%	N%	Cu%
AWS Requirements	0.12	23.0-25.0	12.0-14.0	0.75	1.0-2.5	0.30-0.65	0.03	0.03	—	0.75
Typical Results	0.095	23.13	12.83	0.07	1.56	0.51	0.02	0.014	—	0.12

Diameter

	0.8mm	0.9mm	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
MIG Wire	...	...	...	...				
TIG Rod				...	...	...	...	...

Packaging

	D100	D200	D300	K300	KS300	Box
MIG Wire	1Kg	5Kgs	15Kgs			
TIG Rod						5-10Kgs

Stainless Steel Wire

(AWS ER316)

The nominal composition (wt.-%) of this classification is 19 Cr, 12.5 Ni. This filler metal is used for welding type 316 and similar alloys. It has been used successfully in certain applications involving special base metals for high-temperature service. The presence of molybdenum provides creep resistance at elevated temperatures and pitting resistance in a chloride atmosphere.

Classification

AWS A5.9	ER316
ASME SFA 5.9	UNS S31680

Physical Properties

Tensile Strength	583MPa/mm ²
Elongation	39%

Welding Positions



Shielding Gas

Argon
Argon/O₂-mixtures

Polarity

MIG Direct current (DC)
TIG Alternating current (AC)

Chemical Composition

	C%	Cr%	Ni%	Mo%	Mn%	Si%	P%	S%	N%	Cu%
AWS Requirements	0.08	18.0-20.0	11.0-14.0	2.0-3.0	1.0-2.5	0.30-0.65	0.03	0.03	—	0.75
Typical Results	0.04	18.53	11.46	2.32	1.24	0.32	0.018	0.019	—	0.12

Diameter

	0.8mm	0.9mm	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
MIG Wire	...	...	...	...	...	...	...	...
TIG Rod				...	...	...	...	...

Packaging

	D100	D200	D300	K300	KS300	Box
MIG Wire	1Kg	5Kgs	15Kgs			
TIG Rod						5-10Kgs