

Classification				
AWS A5.9/A5.9M	EN ISO 14343-A	EN ISO 14343-B		
ER 309L	W 23 12 L	SS309L		

Characteristics and field of use
<ul style="list-style-type: none"> BOHLER TIG N 309L is a high-alloy 23 Cr 13 Ni wire primarily intended for surfacing low-alloy steels and for dissimilar welding between mild steels and stainless steels, offering a ductile and crack resistant weldment. The chemical composition, when surfacing, is equivalent to that of ASTM 304 from the first run. The weld metal reduces inter granular corrosion where severe corrosion condition exist requiring high alloy weld metal.

Base Materials
<p><i>Dissimilar Joint Welds:</i> Of and between high-strength, mild steels and low-alloyed QT-steels, stainless, ferritic Cr-and austenitic Cr-Ni-steels, manganese steels.</p> <p><i>Surfacing:</i> For the first layer of corrosion resistant weld surfacing on ferritic-pearlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N, as well as of high temperature steels like 22NiMoCr4-7 acc. SEW-Werkstoffblatt 365, 366, 20MnMoNi5-5 and G18NiMoCr3-7</p>

Typical Composition of solid wire (wt. - %)						
C	Si	Mn	Cr	Mo	Ni	FN (WRC-92)
≤0.02	0.32	1.83	23.20	0.13	12.37	10-14

Mechanical Properties of all weld				
Heat treatment condition	Yield strength R_e N/mm ²	Tensile strength R_m N/mm ²	Elongation ($L_0=5d_0$)	Impact Test Values
	MPa	MPa	%	+20°C
As Welded	≥320	≥520	≥30	≥100J

Operating data		
Position 	Polarity DCEN	Size: Ø mm - 1.2, 1.6, 2.0, 2.4, 3.2 Length: 1000mm Packaging: 5Kg Plastic Tubes in 20Kgs Corrugated Box

Shielding Gases: 100% Argon Rod Marking: Front: ER 309 L Back: W 23 12 L	Interpass Temperature: Max. 150°C Heat Input: Max.2.0KJ/mm. Heat Treatment: Generally none. For constructions that include low-alloy steels in mixed joints, a stress-relieving annealing stage may be advisable. However, this type of alloy may be susceptible to embrittlement inducing precipitation in the temperature range 550- 950°C. Always consult the supplier of the parent metal or seek other expert advice to ensure that the correct heat treatment process is carried out. Scaling Temperature: Approx. 1000°C (air) Corrosion Resistance: Superior to 308L. The corrosion resistance obtained on the first layer when surfacing corresponds to that of ASTM 304.
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