

## Classifications

EN ISO 14343-A	EN ISO 14343-B	AWS A5.9
W 22 9 3 N L	SS2209	ER2209

## Characteristics and typical fields of application

GTAW rod of type W 22 9 3 NL / ER2209 designed for welding ferritic-austenitic duplex steels like 1.4462 / UNS 31803. The deposit possess, in addition to high tensile strength and toughness, also excellent resistance to stress corrosion cracking and pitting (Huey-test ASTM A 262-79 practice C). The operating temperature range is  $-60\text{ °C}$  up to  $250\text{ °C}$ . To ensure particularly good weld metal properties care must be taken to achieve controlled dilution and thorough back purging. In case of severe corrosion requirement, small amounts of  $\text{N}_2$  can be added to the shielding respectively purging gas.

BÖHLER CN 22/9 N-IG is characterised by a precisely alloyed composition which includes extremely low oxygen content. It offers very high quality standards for ease of operation and good mechanical properties.

## Base materials

Same-alloyed duplex steels, as well as similar-alloyed, ferritic-austenitic steels with higher tensile strength

1.4462 X2CrNiMoN22-5-3, 1.4362 X2CrNiN23-4,  
1.4462 X2CrNiMoN22-5-3 with 1.4583 X10CrNiMoNb18-12,  
1.4462 X2CrNiMoN22-5-3 with P235GH/ P265GH, S255N, P295GH, S355N, 16Mo3  
UNS S31803, S32205

## Typical analysis of the TIG rods (wt.-%)

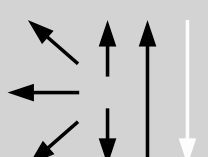
	C	Si	Mn	Cr	Ni	Mo	N		PRE <sub>N</sub>
wt-%	≤ 0.015	0.4	1.7	22.5	8.8	3.2	0.15		≥ 35

## Mechanical properties of all-weld metal

Condition	Yield strength R <sub>p0.2</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	-60 °C
u	<b>600</b> (≥ 450)	<b>800</b> (≥ 550)	<b>33</b> (≥ 20)	<b>150</b>	≥ 32

u untreated, as welded – shielding gas Argon

## Operating data

	<b>Polarity:</b> DC (-)	<b>Shielding gases:</b> 100 % Argon Argon + 1 – 2 % N <sub>2</sub>	<b>Rod marking:</b> front: ✦ W 22 9 3 NL back: ER 2209	<b>ø (mm)</b>
				1.6
				2.0
				2.4
				3.2

Preheat and post weld heat treatment is generally not required. Interpass temperature should not exceed  $150\text{ °C}$ .

## Approvals

TÜV (04484.), ABS (ER 2209), DNV (X (I1)), GL (4462), LR (X), Statoil, CE