

# Select 820-Ni1

Low Alloy / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

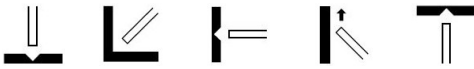
## FEATURES

- Intended for use with 100% CO<sub>2</sub> or blends of 75-80% Ar/balance CO<sub>2</sub> shielding gases.
- Designed with 1% nickel and microalloying to produce welds with enhanced CVN toughness.
- The arc transfer is soft; it melts onto the puddle in a small to medium droplet mode.
- Typically used to weld steels such as ASTM A203, Gr A, and A352, Gr LC1 and LC2.
- This product is used in offshore platform construction, welding mining machinery, and bridge construction.

## DIAMETERS [in (mm)]

0.045 (1.2), 0.052 (1.3), 1/16 (1.6), 5/64 (2.0)

## POSITIONS



## SHIELDING GAS

75-80%Ar/Balance CO<sub>2</sub>, 100% CO<sub>2</sub>

Flow Rate: 40 - 50 CFH

## POLARITY

Direct Current Electrode Positive (DCEP)

## TYPICAL WELD DEPOSIT CHEMISTRY [WT%]

Shielding Gas	C	Cr	Mn	Mo	Ni	P	S	Si	V
100%CO <sub>2</sub>	0.03	0.06	1.15	0.00	0.91	0.008	0.008	0.41	0.02
75%Ar / 25%CO <sub>2</sub>	0.03	0.08	1.29	0.01	0.90	0.009	0.009	0.50	0.03

## TYPICAL MECHANICAL PROPERTIES

Shielding Gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	Elongation (%)	Weld Condition	PWHT Temp	CVN @ -40°F (-40°C) ft-lb (J)	CVN @ -50°F (-46°C) ft-lb (J)
100%CO <sub>2</sub>	86 (596)	74 (508)	27	As-Welded	-	90 (122)	50 (68)
75%Ar / 25%CO <sub>2</sub>	89 (614)	80 (552)	24	As-Welded	-	94 (127)	46 (62)



Notice: Be sure to follow all your employers safety practices, policies and procedures when using this product. Refer to CSA W117.2 and ANSI Z49.1 Safety in Welding, Cutting and Allied Processes for further information and the manufactures SDS sheet. The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.

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## CONFORMANCES

AWS A5.29	E81T1-Ni1C-JH4 E81T1-Ni1M-JH4
MILITARY MIL-DTL-24403/1F	MIL-81T1-Ni1C-H4 MIL-81T1-Ni1M-H4
AWS A5.36	E81T1-C1A4-Ni1-H4 E81T1-M21A4-Ni1-H4
ASME SFA 5.29	E81T1-Ni1C-JH4 E81T1-Ni1M-JH4
AWS D1.8	0.052 in (1.3 mm), (75% Ar/25% CO <sub>2</sub> ) 1/16 in (1.6 mm), (100% CO <sub>2</sub> ) 1/16 in (1.6 mm), (75% Ar/25% CO <sub>2</sub> )

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## RECOMMENDED WELDING PARAMETERS \*\*

Diameter in (mm)	Shielding Gas	Position	WFS* in/min (m/min)	Amps	Volts	CTWD* in (mm)
0.045 (1.2 mm)	100% CO2	All Positions	200 (5.1)	145	23	1/2 - 5/8 (13 - 16)
		All Positions	235 (6.0)	160	24	1/2 - 5/8 (13 - 16)
		All Positions	300 (7.6)	185	26	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	375 (9.5)	215	27	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	440 (11.2)	235	29	5/8 - 3/4 (16 - 19)
0.052 (1.3 mm)	100% CO2	All Positions	170 (4.3)	155	23	5/8 - 3/4 (16 - 19)
		All Positions	200 (5.1)	175	24	5/8 - 3/4 (16 - 19)
		All Positions	250 (6.4)	225	26	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	310 (7.9)	250	27	3/4 - 1 (19 - 25)
		Flat & Horizontal	395 (10.0)	280	29	3/4 - 1 (19 - 25)
1/16 (1.6 mm)	100% CO2	All Positions	125 (3.2)	165	23	5/8 - 3/4 (16 - 19)
		All Positions	150 (3.8)	195	24	5/8 - 3/4 (16 - 19)
		All Positions	185 (4.7)	225	26	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	265 (6.7)	280	27	3/4 - 1 (19 - 25)
		Flat & Horizontal	325 (8.3)	320	29	3/4 - 1 (19 - 25)
5/64 (2.0 mm)	100% CO2	All Positions	100 (2.5)	195	23	3/4 (19)
		All Positions	110 (2.8)	210	24	3/4 (19)
		All Positions	130 (3.3)	240	26	3/4 (19)
		Flat & Horizontal	200 (5.1)	310	27	1 - 1 1/4 (25 - 32)
		Flat & Horizontal	225 (5.7)	350	29	1 - 1 1/4 (25 - 32)

\* WFS = Wire Feed Speed, CTWD = Contact Tip To Work Distance

\*\*The parameters listed are recommended starting points of operation and the ranges for amperage, wfs, and voltage could be extended based on fitness for application. For products with "all-position" capability, as determined and listed in classification, the position recommendation can be determined based on operator skill and material thickness and isn't limited to the listing.

For 75Ar/25CO<sub>2</sub>, decrease voltage by 1 to 1.5 volts.

## APPROVALS

Agency	Approval	Shielding Gas	Diameter(s) in (mm)
ABS	4YSA	C1 (100%CO <sub>2</sub> )	0.035 (0.9) - 1/16 (1.6)
		M21 (75%Ar / 25%CO <sub>2</sub> )	0.035 (0.9) - 1/16 (1.6)
CWB CSA W48-23	E551T1-C1A4-Ni1-H4 (E551T1-Ni1C-JH4)	C1 (100%CO <sub>2</sub> )	0.045 (1.2) - 1/16 (1.6)
	E551T1-M21A4-Ni1-H4 (E551T1-Ni1M-JH4)	M21 (75%Ar / 25%CO <sub>2</sub> )	0.045 (1.2) - 1/16 (1.6)
DNV	IV YMS (H5)	C1 (100%CO <sub>2</sub> )	0.045 (1.2) - 5/64 (2.0)
	III YMS	M21 (75%Ar / 25%CO <sub>2</sub> )	0.045 (1.2) - 5/64 (2.0)
LLOYDS	3YS (H5)	C1 (100%CO <sub>2</sub> )	0.035 (0.9) - 1/16 (1.6)
		M21 (75%Ar / 25%CO <sub>2</sub> )	0.035 (0.9) - 1/16 (1.6)

## PACKAGING (lbs [kgs])

33 (15) Spools, 60 (27.2) Coils, 500 (226.8) Round Drum, 800 (362.9) Hex Drum, 900 (408.2) Hex Drum

\*Some packaging options may not be available depending on diameter and product. Special package options may be available upon request.



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## **STORAGE AND HANDLING**

All products should be stored in original packaging, in dry conditions and handled with care. For more information refer to our website.



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