

Select 820-Ni1

Low Alloy / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

FEATURES

- Intended for use with 100% CO₂ or blends of 75-80% Ar/balance CO₂ 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.

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

DIAMETERS (in [mm])

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

AWS D1.8	0.052 in (1.3 mm), (75% Ar/25% CO ₂) 1/16 in (1.6 mm), (100% CO ₂) 1/16 in (1.6 mm), (75% Ar/25% CO ₂)
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POSITIONS



SHIELDING GAS

75-80%Ar/Balance CO₂, 100% CO₂
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 ₂	0.03	0.06	1.15	0.00	0.91	0.008	0.008	0.41	0.02
75%Ar / 25%CO ₂	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 ₂	86 (596)	74 (508)	27	As-Welded	-	90 (122)	50 (68)
75%Ar / 25%CO ₂	89 (614)	80 (552)	24	As-Welded	-	94 (127)	46 (62)



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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/25CO2, decrease voltage by 1 to 1.5 volts.

APPROVALS

Agency	Approval	Shielding Gas	Diameter(s) in (mm)
ABS	4YSA	C1 (100%CO2)	0.035 (0.9) - 1/16 (1.6)
		M21 (75%Ar / 25%CO2)	0.035 (0.9) - 1/16 (1.6)
CWB CSA W48-23	E551T1-C1A4-Ni1-H4 (E551T1-Ni1C-JH4)	C1 (100%CO2)	0.045 (1.2) - 1/16 (1.6)
	E551T1-M21A4-Ni1-H4 (E551T1-Ni1M-JH4)	M21 (75%Ar / 25%CO2)	0.045 (1.2) - 1/16 (1.6)
DNV	IV YMS (H5)	C1 (100%CO2)	0.045 (1.2) - 5/64 (2.0)
	III YMS	M21 (75%Ar / 25%CO2)	0.045 (1.2) - 5/64 (2.0)
LLOYDS	3YS (H5)	C1 (100%CO2)	0.035 (0.9) - 1/16 (1.6)
	3YS	M21 (75%Ar / 25%CO2)	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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