

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.

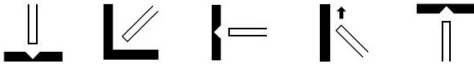
CONFORMANCES

AWS A5.29	E81T1-Ni1C-JH4 E81T1-Ni1M-JH4
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 ₂) 1/16 in (1.6 mm), (100% CO ₂) 1/16 in (1.6 mm), (75% Ar/25% CO ₂)

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 CO₂, 100% CO₂
Flow Rate: 40 - 50 CFM

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)



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.

Select 820-Ni1

Low Alloy / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

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

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)
MILITARY	MIL-81T1-Ni1C	C1 (100%CO2)	()
	MIL-81T1-Ni1M	M21 (75%Ar / 25%CO2)	()

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.



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.

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.



Revision: 9/14/2022

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.

600 Enterprise Drive, P.O. Box 259, Fort Loramie, Ohio 45845-0259 • 877-869-4009 • www.Select-SAI.com