



TM-81N1

New Improved Formula

GAS-SHIELDED FLUX-CORED WIRE
AWS E80T1-Ni1C H8, E80T1-Ni1M H8

090429 (Replaces - 081124)

TM-81N1 is comparable to E8018-C3 covered electrodes in deposit composition and properties. In most applications, TM-81N1 is more economical to use than stick electrodes. It is recommended for weathering-steel fabrication where color match is not required, and for mining and earthmoving equipment and other fabrication where low temperature impact values are needed. The improved slag system of this wire provides the superior welder appeal of acid slag (EXXT-1) products and the mechanical properties normally associated with basic slag wires. Weld metal diffusible hydrogen levels are kept low, making this an excellent choice for the more demanding applications. The wire is intended for use with 100% CO₂ or a 75% Ar/25% CO₂ gas mixture for shielding.

PRODUCT CHARACTERISTICS:

- 1% nickel weld metal
- Provides good toughness at low temperatures
- Intended for welding steels requiring good CVN values at sub-zero temperatures
- Improved welder appeal
- Low weld metal hydrogen levels

SPECIFICATIONS:

E80T1-Ni1C H8, E80T1-Ni1M H8 per AWS A5.29, ASME SFA 5.29

SHIELDING GAS:

100% CO₂, 75% Ar/25% CO₂, 35-50 cfh

WELDING POSITIONS:

Flat and horizontal

STANDARD DIAMETERS:

1/16", 5/64", 3/32"

TYPICAL UNDILUTED WELD METAL CHEMISTRY*:

	C	Mn	Si	P	S	Ni
100% CO₂	0.075	1.26	0.54	0.011	0.008	0.98
75% Ar/25% CO₂	0.06	1.40	0.65	0.007	0.011	0.91

TYPICAL MECHANICAL PROPERTIES*:

	75% Ar/25% CO ₂	100% CO ₂
Tensile Strength	96,000 psi (662 MPa)	91,000 psi (628 MPa)
Yield Strength	88,000 psi (607 MPa)	80,000 psi (552 MPa)
Elongation	25%	26%
CVN @ -20°F (-29°C)	45 ft•lbs (61 J)	37 ft•lbs (50 J)
CVN @ -50°F (-45°C)	40 ft•lbs (54 J)	32 ft•lbs (43 J)

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers Company expressly disclaims any liability incurred from any reliance thereon. Typical data is obtained when welded and tested in accordance with AWS A5.29 specification. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by Hobart Brothers Company.



TM-81N1

GAS-SHIELDED FLUX-CORED WIRE
AWS E80T1-Ni1C H8, E80T1-Ni1M H8

RECOMMENDED OPERATING PARAMETERS:

The information below was determined by welding performed with 100% CO₂ shielding gas at a flow rate of 35 cfh.

Diameter, Electrical Stickout (ES) Position	Arc Voltage (volts)	Current DCEP (+) (amps)	Approx. Wire Feed Speed (in/min)	Deposition Rate (lbs/hr)
1/16"	24	170	140	5.2
3/4" to 1"	25	215	175	6.5
Flat and Horizontal	28	320	325	12.3
	31	350	345	12.9
5/64"	26	240	125	7.3
3/4" to 1"	28	395	250	14.8
Flat and Horizontal	29	450	300	18.1
	30	495	350	21.2
	31	520	375	22.7
3/32"	27	400	130	10.8
1" to 1-1/4"	28	425	150	12.6
Flat and Horizontal	29	465	175	14.4
	30	525	225	19.7
	35	650	300	25.9

BOLD—Optimum parameters for welder appeal.

NOTICE:

Actual use of the product may produce varying results due to conditions and welding techniques over which Tri-Mark has no control, including, but not limited to, plate chemistry, weldment design, fabrication methods, electrode size, welding procedure, service requirements, and environment. The purchaser is solely responsible for determining the suitability of Tri-Mark products for the purchaser's own use. Any prior representations shall not be binding. Tri-Mark disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.

CAUTION:

Consumers should be thoroughly familiar with the safety precautions shown on the Warning Label posted on each shipment and in American National Standard Z49.1, "Safety in Welding and Cutting," published by the American Welding Society, 550 NW LeJeune Road, Miami, FL 33126, and OSHA Safety and Health Standards 29 CFR 1910, available from the U.S. Department of Labor, Washington, D.C. 20210.