

**NEW AND IMPROVED  
WELDABILITY AND IMPACTS  
TM-811N1**



**GAS-SHIELDED FLUX-CORED WIRE  
AWS E81T1-Ni1CJ H8, E81T1-Ni1 MJ H8**

080818 (Replaces 071116)

**TM-811N1** is comparable to E8018-C3 covered electrodes in deposit composition and properties. In many applications, TM-811N1 is more economical to use than stick electrodes. It is recommended for petro-chemical applications where deposit nickel must be kept low for weathering-steel fabrication where color match is not required. It is used for mining and earth moving equipment and other fabrication where good low temperature impact values are needed. TM-811N1 offers good welder appeal, with excellent arc stability, low spatter, fast-freezing slag to facilitate all-position welding, and very easy slag removal. It is recommended for single-and multiple-pass welding in all positions using either CO<sub>2</sub> or a 75% Ar/25% CO<sub>2</sub> gas mixture for shielding.

**PRODUCT CHARACTERISTICS:**

- 1% nickel weld deposit
- Can be used in place of E8018-C3 covered electrodes
- **Improved excellent arc stability, and low spatter levels**
- Can be used with either 100% CO<sub>2</sub> or 75% Ar/25% CO<sub>2</sub> shielding gas
- **Improved impacts**

**SPECIFICATIONS:**

E81T1-Ni1CJ H8, E81T1-Ni1MJ H8 per AWS A5.29, ASME SFA 5.29  
ABS Grade 3SA, 3YSA  
CWB 100% CO<sub>2</sub> E81T1-Ni1 H8, 90% Ar/10% CO<sub>2</sub> E81T-Ni1M H8

**SHIELDING GAS:**

100% CO<sub>2</sub>, 75% Ar/25% CO<sub>2</sub>, 35-50 cfh

**WELDING POSITIONS:**

All positions

**STANDARD DIAMETERS:**

.045", .052", 1/16"

**WELD TEST PARAMETERS:**

TM-811N1 .062" diameter electrode was welded using 100% CO<sub>2</sub> shielding gas with flow rate of 40 cfh, 275 amps (245 ipm), DCEP, and 27 volts with 3/4" electrical stickout and 300° ± 25°F interpass temperature. A total of six layers were welded, two passes each for Layers 1 through 5 and three passes on Layer 6. The direction of travel was reversed for each layer.

**TYPICAL UNDILUTED WELD METAL CHEMISTRY\*:**

	C	Mn	Si	P	S	Ni
75% Ar/25% CO <sub>2</sub>	0.06	1.40	0.36	0.015	0.010	0.97
100% CO <sub>2</sub>	0.06	1.21	0.24	0.015	0.011	0.96

**TYPICAL MECHANICAL PROPERTIES:**

	75% Ar/25% CO <sub>2</sub>	100% CO <sub>2</sub>
Tensile Strength	93,000 psi (641 MPa)	84,500 psi (583 MPa)
Yield Strength	85,000 psi (586 MPa)	75,100 psi (518 MPa)
Elongation	24.5%	27.3%
CVN @ -40°F (-40°C)	102 ft•lbs (138 J)	121 ft•lbs (164 J)

The above properties were determined with C25 shielding gas.

The above properties were determined with 100% CO<sub>2</sub> shielding gas.

\*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.



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## RECOMMENDED OPERATING PARAMETERS:

The information below was determined by welding performed with 100% CO<sub>2</sub> shielding gas at a flow rate of 35 cfh and an electrode stickout of 3/4".

Diameter, Electrical Stickout (ES) Position	Arc Voltage (volts)	Current DCEP (+) (amps)	Approx. Wire Feed Speed (in/min)	Deposition Rate (lbs/hr)
.045" 5/8" ± 1/8" Flat and Horizontal	24	125	196	2.7
	<b>28</b> 33	<b>235</b> 320	<b>488</b> 790	to 14.5
Vertical Up and Overhead	24	125	196	2.7
	<b>26</b> 27	<b>205</b> 225	<b>390</b> 454	to 8.8
.052" 3/4" ± 1/8" Flat and Horizontal	24	125	130	3.8
	<b>28</b> 33	<b>325</b> 375	<b>410</b> 495	to 15.8
Vertical Up and Overhead	24	125	130	3.8
	<b>25</b> 26	<b>200</b> 250	<b>225</b> 295	to 8.1
1/16" 7/8" ± 1/8" Flat and Horizontal	24	130	100	4.0
	<b>27</b> 34	<b>315</b> 415	<b>300</b> 460	to 17.4
Vertical Up and Overhead	24	150	117	4.0
	<b>25</b> 26	<b>190</b> 250	<b>156</b> 220	to 7.6

**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.