



Pinnacle Alloys are products of SOWESCO

ISO 9001:2015 REGISTERED  
Certificate No.: 50040 & 50415

## E101T1-GM DATA SHEET

### Pinnacle Alloys E101T1-GM

AWS CLASS E101T1-GM

#### CODE AND SPECIFICATION DATA:

AWS A5.29 ASME SFA 5.29

#### DESCRIPTION:

Pinnacle Alloys E101T1-GM has a nominal composition (wt-%) of 0.9 Ni (meeting NACE MRO 175 requirements), 0.35 Mo, 1.4 Mn. These electrodes are designed for single and multi-pass welding of quenched and tempered steels that require a post weld stress relief. Typical applications would include the welding of materials such as AISI 4130, 8630, and similar materials. These are often used on oilfield components. Pinnacle Alloys E101T1-GM can also be used in the as welded condition. It is a good choice for high strength, low alloy steels where 100ksi minimum tensile strength and excellent toughness are required in the as welded condition. Preheat and interpass temperatures are typically kept between 300-350°F. This filler metal is used in the as welded or PWHT condition, typically around 1150-1175°F for one hour.

**DIAMETERS:** .045", .052", 1/16"

**WELDING POSITIONS:** All positions



#### TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
		75% Ar/ 25% CO <sub>2</sub>
Carbon (C)	N.S.	0.06
Manganese (Mn)	0.50 min	1.40
Molybdenum (Mo)	0.20 min	0.35
Nickel (Ni)	0.50 min*	0.85
Phosphorus (P)	0.03	0.01
Silicon (Si)	1.00	0.30
Sulfur (S)	0.03	0.007

NOTE: Single values are maximums. N.S. means Not Specified.

\*Pinnacle Alloys restricts Ni to 0.9999 max.

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### TYPICAL MECHANICAL PROPERTIES:

75% Ar/ 25% CO <sub>2</sub> Shielding Gas	AWS Spec (min)	As Welded
Ultimate Tensile Strength	100,000-120,000 psi (620-760 MPa)	111,100 psi (765 MPa)
Yield Strength	88,000 psi (540 MPa)	98,700 psi (680 MPa)
Percent Elongation in 2"	16%	19%
CVN @ -20°F (-30°C)	Not required	65 ft•lb <sub>f</sub> (87 Joules)
CVN @ -50°F (-46°C)	Not required	47 ft•lb <sub>f</sub> (64 Joules)

75% Ar/ 25% CO <sub>2</sub> Shielding Gas	SR 1 HR @ 1150°F	SR 8 HR @ 1175°F
Ultimate Tensile Strength	103,000 psi (710 MPa)	106,400 psi (735 MPa)
Yield Strength	94,000 psi (645 MPa)	99,100 psi (685 MPa)
Percent Elongation in 2"	22%	22%
CVN @ -20°F (-30°C)	36 ft•lb <sub>f</sub> (48 Joules)	--
CVN @ -25°F (-32°C)	--	22 ft•lb <sub>f</sub> (30 Joules)

### TYPICAL WELDING PARAMETERS:

Diameter	Position	Optimum			Amperage Range	Voltage Range
		Amperage	Voltage	WFS (ipm)		
.045"	Flat	250	27	282	100-300	20-31
	Overhead	200	25	265	150-280	21-28
	Vertical Up	200	24	265	100-230	21-27
.052"	Flat	300	27	360	100-330	19-31
	Overhead	225	25	245	150-310	21-27
	Vertical Up	225	24	245	150-280	21-26
1/16"	Flat	350	28	300	150-400	21-33
	Overhead	225	25	160	150-310	22-27
	Vertical Up	225	24	160	150-280	22-26

**NOTE:** Parameters reflect 75-80% Ar/ balance CO<sub>2</sub> shielding gas. Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of steel being welded.

**NOTICE:** 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 the use in the field. The manufacturer disclaims any warranty of merchantability of fitness for any particular purpose with respect to its products.

**CAUTION:** Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standards A49.1, "Safety in Welding and Cutting," published by the American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33126; OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Pinnacle Alloys SDS sheets may be obtained on the website below.

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