



Pinnacle Alloys are products of SOWESCO

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

## E111T1-K3M DATA SHEET

### Pinnacle Alloys E111T1-K3M

AWS CLASS E111T1-K3M

#### CODE AND SPECIFICATION DATA:

AWS A5.29 ASME SFA 5.29; UNS W21331

#### DESCRIPTION:

Pinnacle Alloys E111T1-K3M has a nominal composition (wt-%) of 2 Ni, 2 Mn, 0.5 Mo. These electrodes are used on many high-strength applications with steels having yield strengths of 100ksi and higher. Typical applications would include crane fabrication, trailer construction, and other structural applications involving higher strength materials. Filler metals of this classification are used to weld materials such as HY-80, HY-100, HSLA-80, ASTM A 514, and similar high strength steels. Preheat and interpass temperatures are typically kept between 275-325°F. This filler metal is used in the as welded condition.

**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)	0.15	0.07
Chromium (Cr)	0.15	0.09
Manganese (Mn)	0.75-2.25	2.03
Molybdenum (Mo)	0.25-0.65	0.38
Nickel (Ni)	1.25-2.60	1.99
Phosphorus (P)	0.03	0.01
Silicon (Si)	0.80	0.38
Sulfur (S)	0.03	0.01
Vanadium (V)	0.05	0.02

NOTE: Single values are maximums.



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### TYPICAL MECHANICAL PROPERTIES:

75% Ar/ 25% CO <sub>2</sub> Shielding Gas	AWS Spec (min)	As Welded
Ultimate Tensile Strength	110,000-130,000 psi (760-900 MPa)	126,900 psi (870 MPa)
Yield Strength	98,000 psi (680 MPa)	107,800 psi (740 MPa)
Percent Elongation in 2"	15%	19%
CVN @ 0°F (-20°C)	20 ft•lb <sub>f</sub> (27 Joules)	49 ft•lb <sub>f</sub> (66 Joules)
CVN @ -20°F (-30°C)	Not required	37 ft•lb <sub>f</sub> (50 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	20-28
	Vertical Up	200	24	265	100-230	20-27
.052"	Flat	300	27	360	100-330	18-31
	Overhead	225	25	245	150-310	20-27
	Vertical Up	225	24	245	150-280	20-26
1/16"	Flat	350	28	300	150-400	21-33
	Overhead	225	25	160	150-310	21-27
	Vertical Up	225	24	160	150-280	21-26

**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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