AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

E81T1-Ni1 DATA SHEET

Pinnacle Alloys E81T1-Ni1
AWS CLASS E81T1-Ni1C, E81Ni1M
CODE AND SPECIFICATION DATA:
AWS A5.29 ASME SFA 5.29

DESCRIPTION:
Pinnacle Alloys E81T1-Ni1 is a gas-shield, flux cored electrode designed for the all position, single and multiple pass welding of carbon and low alloy steels which require moderate tensile strength and good CVN toughness at subzero temperatures.
Pinnacle Alloys E81T1-Ni1 is an excellent selection for welding steels requiring good low temperature CVN toughness and moderate (80,000 psi minimum) tensile strength, such as ASTM A203 Gr A, A352 Cr LC1 and LC2, A572, and A734. These steels are used in offshore platform fabrication, mining machinery, earthmoving equipment, and structural applications.

CHARACTERISTICS:
- Superior low temperature CVN toughness values.
- Smooth arc with very low spatter.
- Fast freezing characteristics facilitate all position welding.
- Smooth bead profile with minimum convexity.

SHIELDING GAS: 100% CO_2, 75-80% Ar/balance CO_2, 35-50 cfh

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

WELDING POSITIONS: All positions

TYPICAL DEPOSIT COMPOSITION:

	Wt% CO_2	Wt% 75 Ar/25 CO_2
Carbon (C)	0.03	0.03
Manganese (Mn)	1.15	1.29
Nickel (Ni)	0.91	0.90
Phosphorous (P)	0.008	0.009
Silicon (Si)	0.41	0.50
Sulfur (S)	0.008	0.009

TYPICAL MECHANICAL PROPERTIES (CO_2):

Ultimate Tensile Strength (psi)	86,400 psi
Yield Strength (psi)	73,700 psi
Percent Elongation	27%
CVN (ft•lb_f) @ -40°F	90 ft•lbs

TYPICAL MECHANICAL PROPERTIES (75%Ar/ 25%CO_2):

Ultimate Tensile Strength (psi)	89,000 psi
Yield Strength (psi)	80,000 psi
Percent Elongation	24%
CVN ($ft•lb_f$) @ -40°F	94 ft•lbs

TYPICAL WELDING PARAMETERS:

Diameter	Welding Position	WFS (ipm)	Amperage	Volts	Amperage Range	Volts Range
.045”	Flat	**282**	**250**	**28**	100-300	21-32
	Overhead	**265**	**200**	**26**	150-280	21-29
	Vertical Up	**265**	**200**	**25**	100-230	21-28
.052”	Flat	**360**	**300**	**28**	100-330	19-32
	Overhead	**245**	**225**	**26**	150-310	21-28
	Vertical Up	**245**	**225**	**25**	150-280	21-27
1/16”	Flat	**300**	**350**	**29**	150-400	22-34
	Overhead	**160**	**225**	**26**	150-310	22-28
	Vertical Up	**160**	**225**	**25**	150-280	22-27

NOTE: Optimum conditions are in boldface type. These parameters are with CO_2 shielding gas. For 75%Ar/25%CO_2, decrease voltage by 1 to 1.5 volts.

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, 550 NW LeJune Road, Miami, FL 33126: OSHA Safety and Health Standards 29 CRF 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.