



ENiCrMo3T1-1/4 DATA SHEET

Pinnacle Alloys ENiCrMo3T1-1/4

AWS CLASS ENiCrMo3T1-1, ENiCrMo3T1-4

CODE AND SPECIFICATION DATA:

AWS A5.34 ASME SFA 5.34; UNS W86625

DESCRIPTION:

Pinnacle Alloys ENiCrMo3T1-1/4 has a nominal composition (wt.-%) of 60 Ni, 22 Cr, 9 Mn, 3 Fe, 3.6 Nb + Ta. Electrodes of this classification are used for welding nickel-chromium-molybdenum and nickel-iron-chromium alloys to themselves and to steel. They are also used for surfacing steel with nickel-chromium-molybdenum weld metal. This electrode can also be used for welding other nickel-base alloys to steel. Typical specifications for the nickel-chromium-molybdenum base metals are ASTM B443, B444, and B446, all of which have a UNS Number of N06625. Typical specifications for nickel-iron-chromium base metals are ASTM B407, B409, B514, and B564, all of which have a UNS Number of N08800. Pinnacle Alloys ENiCrMo3T1-1/4 is widely used in offshore and marine environments. It is used to clad steel when exceptional corrosion resistance is required, such as exposure to chloride contaminated water in heat exchangers. Other applications include joining of 9% nickel steels utilized in LNG storage and conveyance equipment. It delivers superb performance characteristics in all positions, has little spatter, and easy-to-remove slag. Minimal weaving is required to achieve a flat, well-washed bead.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)**DIAMETERS:** .045", 1/16"**SHIELDING GAS:** 100% CO₂, 75-80% Ar/ balance CO₂, 35-50 cfh**WELDING POSITIONS:** All positions**TYPICAL MECHANICAL PROPERTIES:**

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	100,000 psi (690 MPa)	109,000 psi (750 MPa)
Yield Strength	Not required	65,000 psi (450 MPa)
Percent Elongation in 2"	25%	46%
CVN @ -320°F (-195°C)	Not required	59 ft•lb _f (80 Joules)



TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.10	0.02
Chromium (Cr)	20.0-23.0	21.1
Copper (Cu)	0.50	0.007
Iron (Fe)	1.00*	0.44
Manganese (Mn)	0.50	0.13
Molybdenum (Mo)	8.0-10.0	9.06
Nickel (Ni)	58.0 min	64.7
Phosphorus (P)	0.02	0.004
Silicon (Si)	0.50	0.28
Sulfur (S)	0.015	0.002
Titanium (Ti)	0.40	0.22
Niobium (Nb) + Tantalum (Ta)	3.15-4.15*	3.68

NOTE: Single values are maximums.

*Additional customer requirements may apply.

TYPICAL WELDING PARAMETERS:

Diameter	Position	Optimum			Amperage Range	Voltage Range
		Amperage	Voltage	WFS (ipm)		
.045"	Flat	190	28	400	125-215	25-29
	Out of Position	155	25	320	125-175	24-27
1/16"	Flat	200	27	225	150-230	24-29
	Out of Position	175	25	175	150-190	24-26

Note: Parameters and properties reflect CO₂ shielding gas - reduce by 1 volt when using 75-80% Ar/ balance CO₂. Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of material 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.

www.pinnaclealloys.com

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