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

## 4130 DATA SHEET

### Pinnacle Alloys 4130

No AWS Specification; UNS Number G41300

#### DESCRIPTION:

Pinnacle Alloys 4130 is a copper coated solid wire for welding high strength steels with similar chemical composition. It is used for overlay applications where moderate hardness is required. It can also be used for joining Cr-Mo, such as 4130. Preheat and interpass temperature should be 400°F. Following welding, the weldment should be heat treated at 1550°F, oil quenched, then tempered at 1050°F. Users should also consult with the steel producer's recommendations.

**DIAMETERS:** .035", .045", 1/16", 3/32", 1/8"

**WELDING POSITIONS:** All positions

GMAW spray transfer limited to flat and horizontal fillet positions only



#### TYPICAL DEPOSIT COMPOSITION:

	Requirement	Weld Metal Analysis (%)
Carbon (C)	0.28-0.33	0.30
Chromium (Cr)	0.80-1.10	0.94
Copper (Cu)	N.S.	0.14
Manganese (Mn)	0.40-0.60	0.52
Molybdenum (Mo)	0.15-0.25	0.18
Nickel (Ni)	N.S.	0.04
Phosphorus (P)	0.035	0.008
Silicon (Si)	0.15-0.35	0.20
Sulfur (S)	0.04	0.007
Vanadium (V)	N.S.	0.001

\*N.S. means Not Specified.

NOTE: Single values are maximums.

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#### TYPICAL MECHANICAL PROPERTIES:

	After Heat Treatment
Ultimate Tensile Strength	145,000 psi (1,000 MPa)
Yield Strength	129,000 psi (890 MPa)
Percent Elongation in 2"	11%

#### TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	1/16"	60-130	9-12	100% Ar (DCEN)
	3/32"	70-180	9-13	
	1/8"	90-210	9-13	
GMAW	.035"	90-240	17-31	15-25% CO <sub>2</sub> / Balance Ar (DCEP)
	.045"	110-300	18-32	

**NOTE:** 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 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.