



Pinnacle Alloys are products of SOWESCO

ISO 9001:2008 REGISTERED  
Certificate No.: 50040 & 50415

## ER420 DATA SHEET

### Pinnacle Alloys ER420

AWS CLASS ER420

#### CODE AND SPECIFICATION DATA:

AWS A5.9 ASME SFA 5.9; UNS S42080

#### DESCRIPTION:

Pinnacle Alloys ER420 has a nominal composition (wt.-%) of 13 Cr and 0.38 C. ER420 is used for many surfacing operations requiring corrosion resistance and resistance to abrasion. It has somewhat higher hardness than weld metals deposited by ER410 electrodes. This increases wear resistance. Pinnacle Alloys ER420 requires preheat and interpass temperatures of 400°F followed by slow cooling. PWHT is used to temper the weld deposit.

**DIAMETERS:** .030", .035", .045", 1/16", 3/32", 1/8", 5/32"

**WELDING POSITIONS:** GTAW & GMAW: All positions



#### TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.25-0.40	0.395
Chromium (Cr)	12.0-14.0	13.48
Copper (Cu)	0.75	0.09
Manganese (Mn)	0.60	0.47
Molybdenum (Mo)	0.75	0.06
Nickel (Ni)	0.60	0.23
Nitrogen (N)	N.S.*	0.028
Phosphorus (P)	0.03	0.022
Silicon (Si)	0.50	0.36
Sulfur (S)	0.03	0.002

\*N.S. means Not Specified.

NOTE: Single values are maximums.



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#### FERRITE NUMBER AND PITTING RESISTANCE EQUIVALENT NUMBER:

To obtain Ferrite Numbers or PRE<sub>N</sub>, please contact SOWESCO technical support at the number below.

#### TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
<b>GTAW</b>	1/16"	80-110		100% Ar
	3/32"	90-130		
	1/8"	120-175		
	5/32"	150-220		
<b>GMAW</b> Spray Transfer	.030"	130-200	23-27	98% Ar/ 2% O <sub>2</sub> (35 cfh)
	.035"	150-225	23-26	
	.045"	200-325	24-28	
	1/16"	300-350	24-27	
<b>GMAW</b> Short-Circuit	.030"	50-150	14-20	90% He/ 7½% Ar/ 2½% CO <sub>2</sub> (25 cfh)
	.035"	60-200	14-22	
	.045"	75-225	15-23	
	1/16"	100-250	16-23	
<b>SAW</b>	3/32"	275-350	28-30	Suitable Flux
	1/8"	350-450	29-32	

**NOTE:** 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.