

SelectAlloy 309H-AP

Stainless Steel / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

FEATURES

- The added C provides higher tensile and creep strength at elevated temperatures.
- Designed for welding in all positions where well washed beads can be achieved with minimal weaving in both 100% CO₂ or 75-80% Ar/balance CO₂ shielding gas
- Applications for this alloy are in the welding of components of similar composition used in the refinery and chemical processing equipment where higher temperature strength is required. This alloy is suitable for welding of 24 Cr 12 Ni wrought and cast grades for corrosion and oxidation resistance.

CONFORMANCES

AWS A5.22

E309HT1-1
E309HT1-4
E309T1-1
E309T1-4

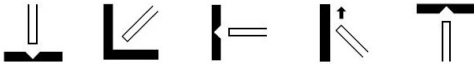
ASME SFA 5.22

E309HT1-1
E309HT1-4
E309T1-1
E309T1-4

DIAMETERS (in [mm])

0.035 (0.9), 0.045 (1.2), 1/16 (1.6)

POSITIONS



SHIELDING GAS

75-80% Ar + Balance CO₂, 100% CO₂

Flow Rate: 40 - 50 CFM

POLARITY

Direct Current Electrode Positive (DCEP)

TYPICAL WELD DEPOSIT CHEMISTRY (WT%)

Shielding Gas	C	Cr	Cu	Mn	Mo	Ni	P	S	Si	WRC-1992 Ferrite
100%CO ₂	0.06	23.50	0.17	1.05	0.10	12.60	0.02	0.01	0.74	9
75%Ar / 25%CO ₂	0.07	23.70	0.11	1.10	0.05	12.70	0.02	0.01	0.83	9

Bismuth is not intentionally added and levels are not known to be greater than 0.002 (WT%)

TYPICAL MECHANICAL PROPERTIES

Shielding Gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	Elongation (%)	Weld Condition	PWHT Temp
100%CO ₂	89 (614)	69 (476)	35	As-Welded	-
75%Ar / 25%CO ₂	91 (628)	70 (483)	34	As-Welded	-



Revision: 10/3/2022

Notice: Be sure to follow all your employers safety practices, policies and procedures when using this product. Refer to CSA W117.2 and ANSI Z49.1 Safety in Welding, Cutting and Allied Processes for further information and the manufactures SDS sheet. 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 use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.

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RECOMMENDED WELDING PARAMETERS

Diameter in (mm)	Shielding Gas	Position	WFS* in/min (m/min)	Amps	Volts	CTWD* in (mm)
0.035 (0.9 mm)	75% Ar/25% CO2	All Positions	325 (8.3)	110	23	1/2 (13)
		All Positions	400 (10.2)	120	24.5	1/2 (13)
		All Positions	470 (11.9)	130	26	1/2 (13)
		Flat & Horizontal	565 (14.4)	145	27.5	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	660 (16.8)	160	29	1/2 - 5/8 (13 - 16)
0.045 (1.2 mm)	75% Ar/25% CO2	All Positions	215 (5.5)	130	23	1/2 - 5/8 (13 - 16)
		All Positions	260 (6.6)	145	24.5	1/2 - 5/8 (13 - 16)
		All Positions	310 (7.9)	160	26	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	420 (10.7)	180	27.5	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	450 (11.4)	200	29	5/8 - 3/4 (16 - 19)
1/16 (1.6 mm)	75% Ar/25% CO2	All Positions	135 (3.4)	160	23	5/8 - 3/4 (16 - 19)
		All Positions	190 (4.8)	195	24.5	5/8 - 3/4 (16 - 19)
		All Positions	225 (5.7)	210	26	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	255 (6.5)	225	27.5	3/4 - 1 (19 - 25)
		Flat & Horizontal	290 (7.4)	245	29	3/4 - 1 (19 - 25)

* WFS = Wire Feed Speed, CTWD = Contact Tip To Work Distance

Parameters were established in 75% Ar/25% CO2. Raise by 1-1.5 volts when using 100% CO2.

PACKAGING (lbs (kgs))

33 (15) Spools, 60 (27.2) Coils, 500 (226.8) Round Drum, 800 (362.9) Hex Drum, 900 (408.2) Hex Drum

*Some packaging options may not be available depending on diameter and product. Special package options may be available upon request.

STORAGE AND HANDLING

All products should be stored in original packaging, in dry conditions and handled with care. For more information refer to our website.



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