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A L I N C O L N E L E C T R I C C O M P A N Y
 4501 Quality Place • Mason, OH 45040 U.S.A Tel: 513-754-2000 Fax: 513-754-6015

TECHNICAL SPECIFICATION SHEET

309 STAINLESS STEEL WELDING WIRE

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NOMINAL COMPOSITION:

Carbon	.12% max.	Chromium	23.0-25.0%
Nickel	12.0-14.0%	Manganese	1.0-2.5%
Copper	.75% max.	Silicon	.30-.65% max.
Phosphorus	.03% max.	Sulfur	.03% max.
Molybdenum	.75% max.	Iron	Balance
Normal Ferrite Range	5-12		

TYPICAL MECHANICAL PROPERTIES AS WELDED:

Yield Strength	57,000	Elongation	47%
Tensile Strength	86,000	Reduction of Area	68%
Charpy V	105 ft./lb. @ room temp.	Brinell Hardness	160 HB
Rockwell B Hardness	85 HRB		

APPLICATION:

Used to weld base metals of similar composition in wrought or cast form; also used to weld type 304 and similar base metals where severe conditions may exist. At times used to weld dissimilar steels.

RECOMMENDED WELDING PARAMETERS:

***GMAW (MIG) Parameters (DC Reverse Polarity) Electrode Positive Short-Circuiting transfer**

<u>Wire Diameter</u>	<u>Amps</u>	<u>Volts</u>	<u>90% Helium + 7.5% Argon + 2.5% CO₂ (cfh)</u>	<u>Wire Feed (ipm)</u>
.030	60-125	17-22	20-25	150-430
.035	75-160	17-22	20-25	120-400
.045	100-200	17-22	20-25	100-240

***GMAW (MIG) Parameters (DC Reverse Polarity) Electrode Positive Spray transfer**

<u>Wire Diameter</u>	<u>Amps</u>	<u>Volts</u>	<u>Argon / 1-2% O₂</u>	<u>Wire Feed (ipm)</u>
.030	160-225	24-28	25	440-650
.035	180-300	24-29	30	430-500
.045	200-450	24-30	30-35	220-400
1/16	225-500	24-32	40	110-210
3/32	250-600	24-32	50	50-80

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*GTAW (Tig) Parameters (DCSP) Electrode negative

Material	2% Thoriated	Filler Wire Size	Amps	Gas Cup	Argon(cfh)
1/16"	1/16"	1/16"	80-120	3/8	20
3/32"	1/16"	1/16"	100-130	3/8	20
1/8"	3/32"	1/16"	120-150	7/16	20
3/16"	3/32"	3/32"	150-250	7/16	25
1/4"	1/8"	1/8"	200-350	1/2	25
1/2"	1/8"	1/8"	235-375	1/2	25

* All parameters are suggested as basic guidelines and will vary depending on joint design, number of passes and other factors.

SPECIFICATION COMPLIANCE: ANSI/AWS A5.9 &ASME SFA 5.9 ER 309

WARNING: PROTECT yourself and others. Read and understand this information.

FUMES AND GASES can be hazardous to your health.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can KILL.

- Before use, read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDSs), and your employer's safety practices.
- Keep your head out of fumes.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
- Wear correct eye, ear, and body protection.
- Do not touch live electrical parts.
- See American National Standard Z49.1, *Safety in Welding, Cutting, and Allied Processes*, published by the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA Safety and Health Standards, available from the U.S. Government Office, Washington, DC 20402

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