



**T H E H A R R I S P R O D U C T S G R O U P**  
**A L I N C O L N E L E C T R I C C O M P A N Y**  
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**TECHNICAL SPECIFICATION SHEET**

**309LSi STAINLESS STEEL WELDING WIRE**

**STATEMENT OF LIABILITY- DISCLAIMER**

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**NOMINAL COMPOSITION:**

Carbon	.03% max.	Chromium	23.0-25.0%
Nickel	12.0-14.0%	Manganese	1.0-2.5%
Copper	.75% max.	Silicon	.65-1%
Phosphorus	.03% max.	Sulfur	.03% max.
Molybdenum	.75% max.	Iron	Balance
Normal Ferrite Range	5-12		

**TYPICAL MECHANICAL PROPERTIES AS WELDED:**

Yield Strength (psi)	58,000	Elongation	48%
Tensile Strength (psi)	87,000	Reduction of Area	60%
Charpy V	95 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. The higher silicon contents will improve the wetting and washing behavior of the weld metal.

**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% CO<sub>2</sub> (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% O<sub>2</sub></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**

<u>Material</u>	<u>2% Thoriated</u>	<u>Filler Wire Size</u>	<u>Amps</u>	<u>Gas Cup</u>	<u>Argon(cfh)</u>
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 309LSi**

**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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