Description

ER **309LSi/1.4828** is a stainless steel filler metal primarily used for welding applications. It has a higher silicon content than ER309L, enhancing bead appearance and improving ease of welding. This grade is suitable for welding similar alloys in both wrought and cast forms and is particularly effective for joining dissimilar materials, such as mild steel to stainless steel.

Chemical Composition

The typical chemical composition of ER 309LSi is as follows:

Element	Weight % (Typical)
C	0.019 max
Mn	1.85
Si	0.84
Cr	23.50
Ni	12.95
S	0.006

P	0.008
Mo	0.15
Cu	0.75 max

Mechanical Properties

The mechanical properties of ER 309LSi at room temperature are:

Property	Value
Ultimate Tensile Strength	89,000 psi (615 MPa)
Yield Strength (0.2%)	60,500 psi (417 MPa)
Elongation	35%
Reduction of Area	60%

Thermal & Physical Properties

- Density: Approximately 7.9 g/cm³
- Melting Range: 1400 - 1450 °C (2550 - 2640 °F)
- Thermal Conductivity: 16.2 W/m·K

Other Designations

- AWS: A5.9
- ASME: SFA 5.9
- UNS: S30988
- DIN Number: Not specified in the search results, but it is commonly associated with similar grades like 1.4828.

Fabrication and Heat Treatment

ER 309LSi does not require heat treatment after welding. It can be used in various welding processes, including:

- TIG (Tungsten Inert Gas)
- MIG (Metal Inert Gas)
- Submerged Arc Welding (SAW)

Application

ER 309LSi is widely used in applications such as:

- Joining stainless steels of types 304 and 347
- Overlay welding
- Dissimilar metal welding, particularly mild steel to stainless steel

Supplied Form

ER 309LSi is available in various forms, including:

- Welding wires in different diameters (e.g., 0.025", 0.030", 0.035", 0.045", 1/16")
- Typically supplied on spools of various weights (2#, 10#, 25#, etc.)

Features

- Enhanced arc stability due to higher silicon content
- Exceptional smooth bead appearance
- Good wetting characteristics for improved weld quality

This datasheet summarizes the key aspects of the ER 309LSi grade, which is essential for professionals in welding and materials engineering.