Description

The **209/1.3964** grade of steel is a type of stainless steel known for its excellent corrosion resistance and high strength. It is commonly used in applications where both strength and resistance to oxidation are critical.

Chemical Composition

The chemical composition of the 209 grade typically includes the following elements (in weight percentage):

- Carbon (C): 0.08% max
- Manganese (Mn): 0.80% max
- Phosphorus (P): 0.045% max
- Sulfur (S): 0.030% max
- Silicon (Si): 1.00% max
- Chromium (Cr): 19.00%
- Nickel (Ni): 9.00%
- Molybdenum (Mo): 0.50% max

Mechanical Properties

The mechanical properties of the 209 grade include:

- Tensile Strength: 620 MPa (min)
- Yield Strength: 310 MPa (min)
- Elongation: 40% (min)
- Hardness: 217 HB (max)

Thermal & Physical Properties

- Density: 8.0 g/cm³
- Melting Point: 1450°C
- Thermal Conductivity: 25 W/m·K
- Specific Heat: 500 J/kg·K

Other Designations

- DIN Number: 1.3964
- Other Designations: UNS S20910, AISI 209

Fabrications and Heat Treatment

The **209/1.3964** grade can be fabricated using standard methods such as welding, machining, and forming. It is typically not heat treatable but can be cold worked to enhance strength.

Applications

The 209 grade is widely used in various applications, including:

- Aerospace components
- Marine applications
- Chemical processing equipment
- Food processing machinery

Supplied Form

The 209 grade is supplied in various forms, including:

- Bars

Features

- High corrosion resistance
- Good weldability
- Excellent strength-to-weight ratio

This datasheet provides a comprehensive overview of the 209 grade of bar, highlighting its composition, properties, and applications.