

Description

409NiMOD/1.4512, also known as Stainless Steel 409M, is a ferritic stainless steel that offers excellent resistance to atmospheric corrosion and exhaust gas. This grade is characterized by its high tensile strength and is often used in applications requiring good weldability and oxidation resistance at elevated temperatures.

Chemical Composition

The chemical composition of 409NiMOD is as follows:

Element	Composition (%)
Carbon (C)	Max 0.03
Silicon (Si)	Max 1.00
Manganese (Mn)	0.5 - 1.5
Chromium (Cr)	10.80 - 12.50
Nickel (Ni)	Max 1.5
Phosphorus (P)	Max 0.040

Sulfur (S)	Max 0.030
Nitrogen (N)	Max 0.03

Mechanical Properties

The mechanical properties of 409NiMOD include:

Property	Value
Yield Strength (MPa)	Min 275
Ultimate Tensile Strength (MPa)	Min 450
Elongation (%)	Min 22
Hardness (HRB)	Max 92
Density (kg/m ³)	7.89

Thermal & Physical Properties

- Thermal Conductivity: 25.4 W/m·K
- Specific Heat: 0.5 kJ/kg·K

- Melting Point: Approximately 1425 - 1510 °C
- Thermal Expansion: 16.5 µm/m·K

Other Designations

409NiMOD is equivalent to several other designations, including:

- UNS S40900
- AISI 409
- ASTM A240
- ASME SA240

Fabrication and Heat Treatment

409NiMOD/1.4512 can be fabricated through various methods, including welding, machining, and forming. It is not hardenable by heat treatment but can be annealed at temperatures between 800 °C to 900 °C for improved corrosion resistance and ductility.

Applications

Common applications of **409NiMOD/1.4512** include:

- Automotive exhaust systems
- Catalytic converters
- Mufflers
- Industrial and architectural applications where mild corrosion resistance is required

Supplied Form

409NiMOD is typically supplied in the following forms:

- Plates
- Sheets
- Coils
- Chequered plates

Features

- Excellent corrosion resistance
- High-temperature oxidation resistance
- Good weldability
- Enhanced mechanical properties compared to standard 409 grades

DIN Number

The DIN number for 409NiMOD is 1.4512.

This datasheet provides a comprehensive overview of the 409NiMOD grade, highlighting its properties, applications, and specifications, ensuring it is suitable for various industrial uses.

