Description

410NiMo/1.4006 is a stainless steel alloy primarily used for welding applications. It is characterized by its good corrosion resistance and mechanical properties, making it suitable for various industrial applications, especially in environments requiring high strength and wear resistance.

Chemical Composition

The chemical composition of 410NiMo is as follows:

Element	Weight %
Carbon (C)	0.06 max
Manganese (Mn)	0.6 max
Silicon (Si)	0.5 max
Chromium (Cr)	11-12.5
Nickel (Ni)	4-5
Sulfur (S)	0.03 max
Phosphorus (P)	0.03 max

Molybdenum (Mo)	0.4-0.7
Copper (Cu)	0.75 max

Mechanical Properties

The typical mechanical properties of 410NiMo are:

Property	Value
Ultimate Tensile Strength	118,900 psi (820 MPa)
Yield Strength (0.2%)	91,350 psi (630 MPa)
Elongation	20%

Thermal & Physical Properties

- Density: Approximately 7.75 g/cm³
- Melting Point: 1400-1450°C (2550-2640°F)
- Thermal Conductivity: 25 W/m·K (at 20°C)

Other Designations

410NiMo is also designated under various standards:

- UNS S41086
- AWS ER 410NiMo
- DIN 1.4006

Fabrication and Heat Treatment

- Welding: Preheating and interpass temperatures should be maintained at not less than 300°F. Post-weld heat treatment should not exceed 1150°F to avoid hardening.
- Heat Treatment: Solution annealing at 1050-1100°C followed by rapid cooling is recommended to enhance toughness and ductility.

Applications

410NiMo is widely used in:

- Welding of cast and wrought materials of similar composition
- Hardfacing applications in industries such as hydroelectric power, pulp and paper machinery, and gas turbine rebuilding
- Manufacturing components that require high wear resistance

Supplied Form

410NiMo is typically supplied in:

- Welding wire (TIG, MIG)
- Solid wire for various welding processes

Features

- Excellent resistance to corrosion and pitting
- High strength and toughness
- Stable arc and spatter-free welding characteristics

This datasheet provides a comprehensive overview of the **410NiMo/1.4006** grade, suitable for engineers and professionals in the welding and materials science fields.