

Description

430FR/ 1.4105 is a ferritic stainless steel with increased silicon content, designed for soft magnetic components operating in corrosive environments. It offers improved magnetic characteristics, higher electrical resistivity, and increased hardness compared to standard 430 grade steel.

Chemical Composition (%)

Element	Minimum	Maximum
Carbon	--	0.07
Chromium	17.25	18.25
Iron	Balance	--
Manganese	--	0.80
Molybdenum	--	0.50
Nickel	--	0.60
Phosphorus	--	0.030

Silicon	1.00	1.50
Sulphur	0.250	0.040

Mechanical Properties (Annealed Bar)

Property	Value
Tensile Strength	78 ksi
Yield Strength	50 ksi
Elongation at Break	30%

Thermal & Physical Properties

- Increased hardness over 430F due to higher silicon levels
- Weak coercive magnetic force ($H_c = 1.88 - 3.00 \text{ Oe}$ [150 - 240 A/m])

Other Designations

- ASTM A838 Alloy 2
- EN 10088-3 Grade 1.4105, X6CrMoS17

Fabrication & Heat Treatment

- Steelmaking: ESR melting
- Hot forging/rolling
- Heat treatment

Applications

- Solenoid valves
- Injectors
- Aerospace
- Automotive
- Industrial components

Supplied Forms

- Round bar diameter: 1.00 mm to 600 mm
- Flat bar
- Plate

Features

- Corrosion resistance in fresh water, moderately acidic, and low chlorine environments
- Increased magnetic characteristics and higher electrical resistivity compared to standard 430 grade
- Controlled processing allows superior and consistent magnetic properties

The DIN number for 430FR stainless steel is 1.4105, also known as X6CrMoS17



VENUS
STAINLESS STEEL WIRES & BARS