Alloy 410 S stainless steel is a low carbon modification of type 410 stainless steel. Low carbon and optionally a small addition of titanium and/or niobium minimize austenite formation at high temperatures, thereby restricting the alloy's ability to harden. The material remains soft and ductile even when the material is rapidly cooled from above the critical temperature. This low hardening characteristic helps to prevent cracking when the steel is welded or exposed to high temperatures. The alloy is completely ferritic in the annealed condition. 410S is ferromagnetic.

## Chemistry

|  | Cr | Mn | $\mathbf{N i}$ | $\mathbf{C}$ | $\mathbf{S i}$ | $\mathbf{P}$ | $\mathbf{S}$ | $\mathbf{F e}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Min | 11.5 | - | - | - | - | - | - | - |
| Max | 13.5 | 1.0 | 0.6 | 0.08 | 1.0 | 0.04 | 0.03 | bal |

Per ASTM A240

## Specifications

UNS: S41008
W. Nr./EN: 1.4000

ASTM: A240
ASME: SA-240

## Physical Properties

| Density | $0.28 \mathrm{lb} / \mathrm{in}^{3}$ |
| :--- | :--- |
| Melting Range | $2700-2790^{\circ} \mathrm{F}$ |
| Poisson Ratio | 0.28 |
| Electrical Resistivity | $23.7 \mu \Omega \cdot$ in |
| Coefficient of Thermal Expansion $\left(68^{\circ} \mathrm{F}-\mathbf{2 1 2}{ }^{\circ} \mathrm{F}\right)$ | $6.0 \mu \mathrm{in} / \mathrm{in} \bullet{ }^{\circ} \mathrm{F}$ |
| Thermal Conductivity $\left(\mathbf{2 1 2}{ }^{\circ} \mathrm{F}\right)$ | $15.6 \mathrm{BTU} /\left(\mathrm{hr} \bullet \mathrm{ft}{ }^{\circ} \mathrm{F}\right)$ |
| Modulus of Elasticity $\left(68^{\circ} \mathrm{F}\right)$ | $29 \bullet 10^{6} \mathrm{psi}$ |

## Minimum Mechanical Properties

## Specification: A240

| Ultimate Tensile Strength, $k s i$ | 60 |
| :--- | :--- |
| $\mathbf{0 . 2 \%}$ Yield Strength, ksi | 30 |
| Elongation, \% | 22 |
| Hardness MAX, Brinell | 183 |

[^0]
## Features

- Increased weldability over 410
- Maintains ductility even when heated and quenched


## Applications

- Tower packing
- Distillation trays
- Automotive exhaust components
- Quenching racks



[^0]:    The data ond information in this printed motter are believed to be erelioble. However, this moterial is not intended os a substitute for competent professional engineering assistance which is requisite to any specific opplication. Rolled Alloys mokes no warranty ond assumes no legal liobility or responsibility for results to be obtained in ony particulor situction, ond shall not be liable for any direct, indiriect, special, or consequentiol damoge therefom. This moteridil is subject to revision without prior notice.

