

## Products & Sizes

| Coil            | Sheet           | Plate            | Bar             | Precision Reroll Strip |
|-----------------|-----------------|------------------|-----------------|------------------------|
| 0.016" - 0.130" | 0.016" - 0.130" | 0.1875" - 2.000" | 0.375" - 8.750" | 0.0008" - 0.015"       |

## 625 Chemical Composition

|    | Element    | Min   | Max     |
|----|------------|-------|---------|
| C  | Carbon     | -     | 0.010   |
| Mn | Manganese  | -     | 0.50    |
| P  | Phosphorus | -     | 0.015   |
| S  | Sulfur     | -     | 0.015   |
| Si | Silicon    | -     | 0.50    |
| Cr | Chromium   | 20.00 | 23.00   |
| Ni | Nickel     | -     | Balance |
| Mo | Molybdenum | 8.00  | 10.00   |
| Nb | Columbium  | 3.15  | 4.15    |
| Ti | Titanium   | -     | 0.40    |
| Al | Aluminum   | -     | 0.40    |
| Ta | Tantalum   | -     | 0.05    |
| Fe | Iron       | -     | 5.00    |

## Industry Standards

- EMS95377
- EN 2.4856
- EN 10204
- DFARS Compliant
- RR SABRe Edition 2
- GE Aircraft Engine (GT193)
- GE Aviation S-SPEC-35 AeDMS S-400
- PWA LCS

## Industry Applications

- Aerospace components
- Fasteners
- Chemical Processing
- Propeller blades
- Submarine propulsion motors
- Utility boat exhaust ducts
- Steam-line bellows
- Heat Exchangers
- Flue gas desulfurization scrubbers
- Chemical processing equipment for oxidizing and reducing acids
- Marine components exposed to seawater, such as fasteners and cable connectors

## Related Industries

Aerospace

Alternative Energy

Defense

Oil & Gas

Power Generation

Space

## Physical Properties

| Property                                  | Value  |
|---|--|
| Density                                   | 0.303 lb/in <sup>3</sup> (8.44 g/cm <sup>3</sup> ) |
| Specific Gravity                          | 8.44   |
| Melting Range                             | 2350 - 2460°F (1280 - 1350°C)                      |
| Specific Heat                             | 0.098 Btu/lb x °F (410 Joules/kg x °K)             |
| Magnetic Permeability (75°F, 200 oersted) | 1.0006   |

| 625 Thermal Conductivity |      |  |     |                                     |                                 |
|--------------------------|------|--|-----|-------------------------------------|---------------------------------|
| Temperature Range        |      | Linear Coefficients of Thermal Expansion <sup>1</sup> · 10 <sup>-6</sup> |     | Thermal Conductivity <sup>2 3</sup> |                                 |
| °C                       | °F   | /°C  | /°F | W/m·K                               | Btu/(hr/ft <sup>2</sup> /in/°F) |
| -157                     | -250 | -  | -   | 7.3                                 | 4.2                             |
| -129                     | -200 | -  | -   | 7.4                                 | 4.3                             |
| -73                      | -100 | -  | -   | 8.3                                 | 4.8                             |
| -18                      | 0    | -  | -   | 9.2                                 | 5.3                             |
| 21                       | 70   | -  | -   | 9.9                                 | 5.7                             |
| 38                       | 100  | -  | -   | 10.0                                | 5.8                             |
| 93                       | 200  | 12.8   | 7.1 | 10.7                                | 6.3                             |
| 204                      | 400  | 13.1   | 7.3 | 12.6                                | 7.3                             |
| 316                      | 600  | 13.3   | 7.4 | 14.2                                | 8.2                             |
| 427                      | 800  | 13.7   | 7.6 | 15.7                                | 9.1                             |
| 538                      | 1000 | 14.0   | 7.8 | 17.5                                | 10.1                            |
| 649                      | 1200 | 14.8   | 8.2 | 19.0                                | 11.0                            |
| 760                      | 1400 | 15.3   | 8.5 | 20.8                                | 12.0                            |
| 871                      | 1600 | 15.8   | 8.8 | 22.8                                | 13.2                            |
| 927                      | 1700 | 16.2   | 9.0 | -                                   | -                               |
| 982                      | 1800 | -  | -   | 25.3                                | 14.6                            |

1. Average coefficient from 70°F (21°C) to temperature shown
2. Measurements made at Battelle Memorial Institute
3. Material annealed 2100°F (1149°C)

| 625 Electrical Resistivity |      |            |
|----------------------------|------|------------|
| Temperature                |      | microhm-cm |
| °C                         | °F   |            |
| 21                         | 70   | 128.9      |
| 38                         | 100  | 129.6      |
| 93                         | 200  | 131.9      |
| 204                        | 400  | 133.9      |
| 316                        | 600  | 134.9      |
| 427                        | 800  | 135.9      |
| 538                        | 1000 | 137.9      |
| 649                        | 1200 | 137.9      |
| 760                        | 1400 | 136.9      |
| 871                        | 1600 | 135.9      |
| 982                        | 1800 | 134.9      |
| 1093                       | 2000 | 133.9      |

## Mechanical Properties

| Temperature |      | 0.2% Yield Strength |     | Ultimate Tensile Strength |     | Elongation Percent |
|-------------|------|---------------------|-----|---------------------------|-----|--------------------|
| °F          | °C   | psi                 | MPa | psi                       | MPa |                    |
| 1920        | 1065 | 63,000              | 430 | 136,000                   | 940 | 51.5               |