

## C465 Stainless Steel Bar

C465 is a premium martensitic, age-hardenable stainless steel alloy that offers an exceptional balance of high strength, toughness, and corrosion resistance. It is designed for improved tensile strength, fracture toughness, fabricability, and excellent resistance to stress corrosion cracking.

### Chemical Composition



| Element | Min % | Max % |
|---------|-------|-------|
| C       | --    | 0.02  |
| Mn      | --    | 0.25  |
| Si      | --    | 0.25  |
| S       | --    | 0.01  |
| P       | --    | 0.015 |
| Cr      | 11.00 | 12.50 |

|    |       |         |
|----|-------|---------|
| Mo | 0.75  | 1.25    |
| Ni | 10.75 | 11.25   |
| Ti | 1.50  | 1.80    |
| Fe | --    | Balance |

## Mechanical Properties

| Condition | Orientation  | 0.2% Yield     | UTS   | Elongati | Reductio      | Charpy V-        | Hardnes |
|-----------|--------------|----------------|-------|----------|---------------|------------------|---------|
|           |              | Strength (MPa) | (MPa) | on (%)   | n of Area (%) | Notch Impact (J) |         |
| H950      | Longitudinal | 1655           | 1765  | 12       | 57            | 16               | 49.5    |
| H950      | Transverse   | 1648           | 1765  | 11       | 49            | 13               | 49.5    |
| H1000     | Longitudinal | 1496           | 1593  | 14       | 63            | 35               | 47.5    |
| H1000     | Transverse   | 1503           | 1600  | 13       | 57            | 28               | 47.5    |

## Physical Properties

| Condition | Density (g/cm <sup>3</sup> ) |
|-----------|------------------------------|
| Annealed  | 7.81                         |
| H900      | 7.82                         |
| H950      | 7.83                         |
| H1000     | 7.84                         |
| H1050     | 7.86                         |
| H1100     | 7.86                         |

VENUS  
STAINLESS STEEL WIRES & BARS

### Other Designations

- UNS S46500
- AMS 5936
- ASTM F899
- MMPDS-01
- ASTM A693
- ASTM A564

### Fabrication and Heat Treatment

- C465 can be cold and hot worked
- Solution annealing is the normal supply condition
- Age hardening to 900-1150°F for 4-8 hours, air cool for sizes under 3", quench for sizes over 3"
- Best machinability in overaged H1150M condition or solution annealed condition

## Applications

- Surgical instruments for orthopedic, spinal, and dental markets
- Drill bits, drivers, distractors, shafts
- Aerospace components
- Oil and gas equipment
- Sports equipment

## Supplied Forms

- Bar (Round, Flat, Square)
- Wire

## Features

- Exceptional strength and toughness
- Corrosion resistance approaching Type 304 stainless
- Replacement for 300M, AISI 4340 steels that require plating for corrosion resistance
- Improved fabricability compared to similar steels

The DIN number for C465 stainless steel is not readily available in the provided search results. However, C465 is a proprietary alloy developed by Carpenter Technology Corporation, so it may not have a direct DIN equivalent.