# Hastelloy C4 Pipe & Tube (UNS N06455)

**Hastelloy C4** is a nickel chromium molybdenum alloy which has improved thermal stability. In alloy C4 tungsten is totally omitted and the iron content is reduced to about 1% and it also contains titanium of approximately 0.3%. It has outstanding high temperature stability which provides good corrosion resistance and ductility after long time aging at 650 - 1040°C. It withdraws formation of grain boundary precipitates in the weld heat affected areas and in the as welded condition it is suitable for most chemical process applications. It provides outstanding resistance to stress corrosion cracking and to oxidizing atmosphere up to 1040°C. It has exceptional resistance to wide variety of chemical process environment such as solvent, hot contaminated mineral acids, chlorine and chlorine contaminated media. It offers good corrosion resistance to a wide variety of media such as organic acid and acid chloride solutions.

## Hastelloy C4 Features

- It attains high temperature stability
- It is suitable for use in chemical processing media
- It prevents stress corrosion cracking and oxidation
- It has good ductility & excellent corrosion resistance up to 1900°F

## Hastelloy C4 Applications

- Waste treatment, paper and pulp production
- Flue gas desulfurization system
- Sour gas wells
- Pharmaceutical and food processing equipment
- Pollution control stack liners, dampers, scrubbers, ducts
- Chemical processing components such as heat exchangers, evaporators, reaction vessels, and transfer piping

### Hastelloy C4 Chemical Composition

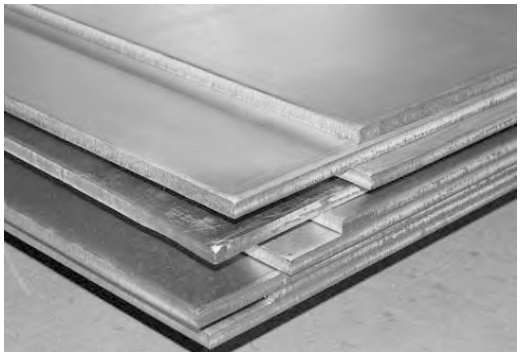
| Element | % |
|---|---|
| Carbon | 0.015 max |
| Manganese | 1 max |
| Silicon | 0.08 max |
| Phosphorus | 0.04 max |
| Sulfur | 0.03 max |
| Chromium | 14-18 |
| Molybdenum | 14-17 |
| Cobalt | 2 max |
| Iron | 3 max |
| Titanium | 0.7 max |
| Nickel | Remainder |

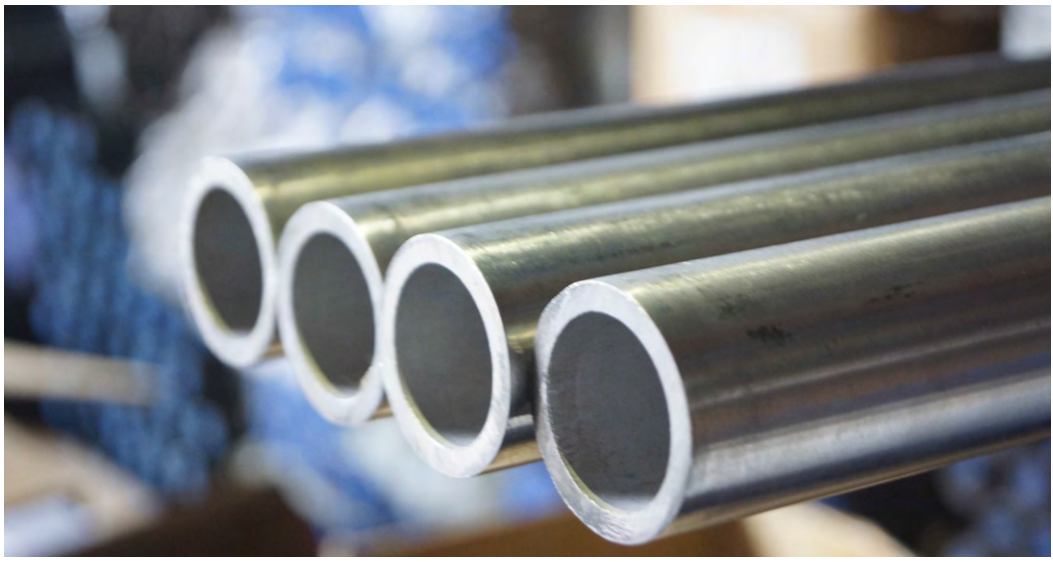
## Hastelloy C4 Physical Properties

| Properties | Density | Melting point |
|---|---|---|
| **Metric** | 8.64 g/cm³ | 0.312lb/in³ |
| **Imperial** | 1427°C | 2600°F |

## Hastelloy C4 Mechanical Properties

| Properties | Metric | Imperial |
|---|---|---|
| Tensile strength | 738 Mpa | 107000 psi |
| 0.2% Offset Yield strength | 492 Mpa | 71400 psi |
| Elongation at break (in 50.8 mm) | 42% | 42% |
| Elastic modulus | 211 Gpa | 30600 ksi |





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