# Incoloy 800HT Pipe & Tube (UNS N08811/ WNR 1.4959)

Inconel **800HT** is a controlled composition derivative of Inconel 800H and is used for the same creep resistant applications, however the combined effects of mechanical and thermal processing of the alloy permit higher design stresses to be incorporated than are permitted for the conventional alloy. Both materials remain available, subject to commercial considerations, and certain specifications which restrict the service temperature of some grades of Inconel alloy 800H. Incoloy Alloy 800HT applications have extended from petrochemical processing reformer tubing, in refinery service to bellows and flare tips. It is also useful in superheater and reheater tubing and power generation. It is also used for muffles jigs and fixtures, heat treatment retorts, to great effect.

## Incoloy 800HT Features

- Excellent resistance to oxidation, sulfidation, and carburization
- Higher creep and rupture properties for high temperature situations above 1100°F (600°C)
- Resistant to high temperature corrosion and prolonged exposure
- Readily machined by standard methods
- Resistance to aqueous corrosion at moderate temperatures

## Incoloy 800HT Applications

- Hydrocarbon cracking
- Industrial furnace and boiler components and equipment
- Equipment for Heat-Treating
- Pressure vessels and heat exchangers
- Chemical and Petrochemical processing

## Incoloy 800HT Forming& Welding

Incoloy 800HT™ can be formed using all conventional techniques.

## Incoloy 800HT Welding

And it is welded using shielded metal-arc welding, gas metal-arc welding, gas-tungsten arc welding, and submerged-arc welding techniques.

## Incoloy 800HT Heat Treatment & Forging

It can be heat treated by annealing. However, it does not get harden by heat treatment. And it can be forged at 1010 to 1205°C

## Incoloy 800HT Hot & Cold Working

It is hot worked at 872 to 1205°C and can be cold worked using standard tooling.

## Incoloy 800HT Annealing & Hardening

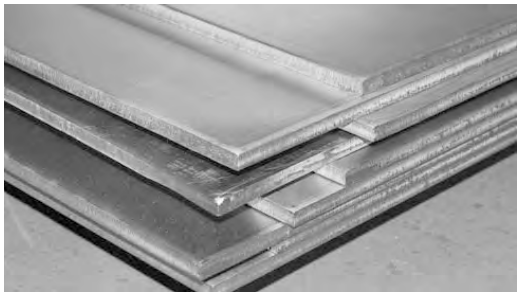
It can annealed at 1149°C followed by cooling and it can be hardened only by cold working.

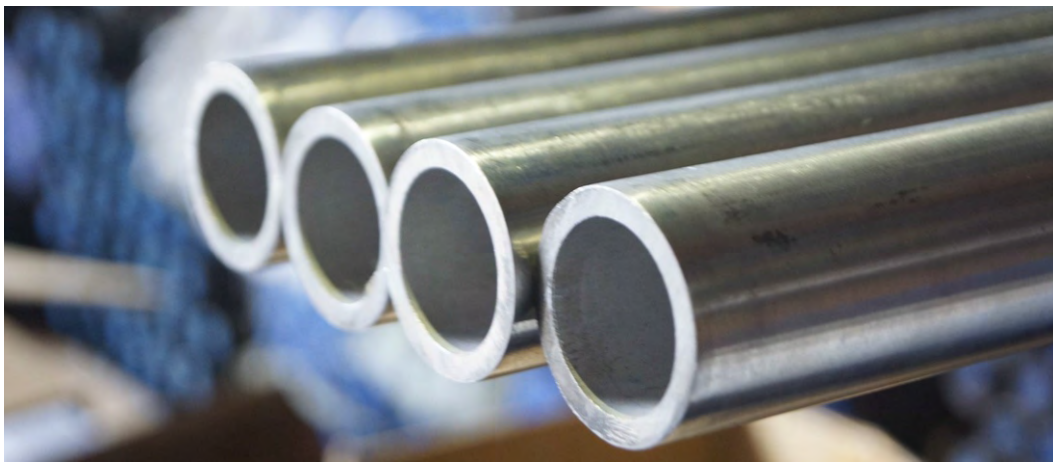
## Incoloy 800HT Chemical Composition

| Element | % |
|---|---|
| Carbon | 0.05-1.00 |
| Manganese | 1.50max |
| Sulphur | 0.015max |
| Silicon | 1.00max |
| Chromium | 19.0-23.0 |
| Copper | 0.75max |
| Aluminium | 0.15-0.60 |
| Titanium | 0.15-0.60 |
| Nickel | 30.0-35.0 |
| Iron | 39.5max |

## Incoloy 800HT Mechanical Properties

| Properties | Metric | Imperial |
|---|---|---|
| Tensile strength (annealed) | 560 Mpa | 81200 psi |
| Yield strength (annealed) | 250 Mpa | 36300 psi |
| Elongation at Break (annealed prior to test) | 45% | 45% |





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