

# 304 L

## Grade

AISI 304 (L) UNS S30400, ASTM A182, ASTM A276, ASTM A479, BS EN 10088) NACE MR-0175/ISO 15156

## Type

Austenitic stainless steel delivered in the solution annealed condition

Also stocked in H grade (high carbon variant typically used at higher temperatures). UNS S30409.

## Overview

The impact toughness shown is typically achieved.

304 stainless steel is not hardened by heat treatment. The material supplied in either the solution treated or annealed condition. The grade may be strengthened by cold working, but this reduces the corrosion resistance. Cold worked grades are not acceptable to NACE MRO175/ ISO 15156.

304 has good machinability. The grade has low strength and good corrosion resistance. The molybdenum content gives it particularly good seawater corrosion resistance. Hence it is used for small fittings, gaskets and small bore tubing.

The grade is prone to chloride stress corrosion cracking, and therefore NACE MRO175/ ISO 15156 states it should not be used at or above 60°C.

## Composition

Element	Weight%
Carbon	0.03 max
Silicon	1 max
Manganese	2 max
Phosphorus	0.045 max
Sulphur	0.03 max
Molybdenum	2 - 3
Chromium	18 - 20
Nickel	8 - 10.5
Manganese	2 max
Nitrogen	1 max

Notes: L grade limits %C content to 0.03% max. H grade %C content is 0.04% - 0.10% max.

L grade limits %Ni content to 12% max

For machinability a controlled sulphur content of 0.015-0.030% is recommended and permitted.

## Mechanical Properties

Solution annealed at around 1050°C and water quenched

Property	Values
0.2% Yield Strength	30 KSI min (205 MPA min)
Ultimate Tensile Strength	75 KSI min (515 MPA min)
Elongation	30
Reduction of area	50% min
Charpy Impact Toughness	135 min J at -75°C
Hardness	22 HRC 237 HBW max