



PRODUCT DATASHEET

420 Modified

Grade

420 Modified. General purpose, high hardenability martensitic, 13 Cr type stainless steel with fairly good corrosion resistance.

Type

Normally supplied in the quenched and double tempered condition to 22HRC max hardness (NACE)

Overview

The grade has better hot working capability, and less susceptibility to quench cracking in heat treatment when compared to 410. The grade has increased strength and hardness over 410.

The material has very limited weldability due to its carbon content and high hardenability.

Composition	
Element	Weight%
Carbon	0.15 - 0.22
Silicon	1 max
Manganese	0.25 - 1
Phosphorus	0.04 max
Sulphur	0.03 max
Chromium	12 - 14
Manganese	0.25 - 1

Notes: the addition of nickel and molybdenum helps improve strength and corrosion resistance and is recommended at Ni 0.2% min and Mo 0.3% min respectively.

Application

Used typically for completion equipment and pressure containing members.

Supplied in the quenched and double tempered condition the material has good strength,

reasonable impact properties and good corrosive resistance in standard and CO₂ environments.

The grade does have limited use in certain environments. It is sensitive to both oxygen and chlorine contamination. It is not recommended for use in high temperature or high chloride environments. Or those containing H₂S.

Mechanical Propeties

Typically supplied in hardened and double tempered condition.

Property	Values
0.2% Yeild Strength	80 KSI min (552 MPA min)
Ultimate Tensile Strength	100 KSI min (689 MPA min)
Elongation	20
Reduction of area	40% min
Charpy Impact Toughness	18 min J at -10°C
Hardness	22 HRC max

Notes: Hardness condition is to NACE MO175