

S45C JIS G 4051 (Japan)

Standards

JIS G 4051

Carbon steels for machine structural use

Chemical composition

C	0.42 - 0.48	Si	0.15 - 0.35	Mn	0.6 - 0.9	P	< 0.03
S	< 0.035	Cr	< 0.2	Ni	< 0.2	Cu	< 0.3
Fe	Rest						

Ni + Cr < 0.35

Properties

By JIS G 4051

A

Hardness HB: 137 - 170

H

Yield Strength: > 490 MPa
Tensile Strength: > 686 MPa
Elongation: > 17 %
Hardness HB: 201 - 269
Reduction of area: > 45 %

N

Yield Strength: > 343 MPa
Tensile Strength: > 569 MPa
Elongation: > 20 %
Hardness HB: 167 - 229

Physical characteristics

Thermal critical point Ac: 720 - 780 °C

Thermal critical point Ar: 680 - 750 °C