

# Material: AS 1045

## Standard Specification for Carbon Steels and Carbon-Manganese Steel

**Group:** Ferrous Mild Steel Alloys

**Sub Group:** AS 1045 Carbon Steels and Carbon-Manganese Steel

**Application:** Intended for Valve, Pump, General Engineering, Automotive and Other Industries

**Grade Belongs to the Industry:** Bar, Wire, Tube and Forging

Chemical Composition		
Carbon	C %	0.430 - 0.500
Silicon	Si %	0.100 - 0.350
Manganese	Mn %	0.600 - 0.900
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	0.300 max.
Nickel	Ni %	0.350 min.
Molybdenum	Mo %	0.100 max.
Copper	Cu %	0.350 max.
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
As- Cast or Normalizing or Annealing or Hardening + Tempering

Mechanical Properties	
Tensile Strength in Mpa	570 - 862
Yield Strength in Mpa	310 min.
Elongation in %	10 min.
Reduction of Area in %	35 - 45
Hardness in HB	163 - 321
Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
A915 Grade SC 1045	ASTM	USA	Casting
J04502	UNS	USA	Bar, Wire, Tube and Forging
1045	AISI	USA	Bar, Wire, Tube and Forging
1045	AMS	USA	Bar, Wire, Tube and Forging
1045	AMS	USA	Bar, Wire, Tube and Forging
A 108 1045	ASTM	USA	Bar, Wire, Tube and Forging
A 29 1045	ASTM	USA	Bar, Wire, Tube and Forging

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Customer Care: +91-99090 45075 Email: [info@icastllp.com](mailto:info@icastllp.com)



+91-99090 45075



[info@icastllp.com](mailto:info@icastllp.com)



ICAST ALLOYS LLP, Plot 2527, Road H1, Kranti Gate, GIDC Metoda, Lodhika, Rajkot-360021, Gujarat, India