

# Material: AISI 1090

## Standard Specification For Carbon Steel Compositions For Forging To Hot-Rolled Steel and Bar

**Group:** Ferrous Mild Steel Alloys

**Sub Group:** AISI 1090 Carbon Steel Compositions For Forging To Hot-Rolled Steel and Bar

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

**Grade Belongs to the Industry:** Steel and Bar

Chemical Composition		
Carbon	C %	0.850 - 0.980
Manganese	Mn %	0.600 - 0.900
Phosphorus	P %	0.040 max.
Sulphur	S %	0.050 max.
Silicon	Si %	0.100 - 0.300
Aluminium	Al %	0.020 max.
Boron	B %	0.0005 - 0.003
Copper	Cu %	0.200 max.
Niobium	Nb %	0.015 max.
Vanadium	V %	0.020 max.
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
As Raw or Annealing or Normalizing or Hardening and Tempering

Mechanical Properties	
Tensile Strength in Mpa	700 - 840
Yield Strength in Mpa	460 min.
Elongation in %	10 min.
Reduction of Area in %	25 - 40
Hardness in HB	197 - 248
Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
G10900	UNS	USA	Bars, Wire Rods, Plates, Strip, Sheets and Tubing
1090	SAE	USA	Steel and Wire
A 1040 1090	ASTM	USA	Steel
A 29 1090	ASTM	USA	Steel and Bar
A 510 1090	ASTM	USA	Wire Rod, Round Wire and Steel
A 576 10L90	ASTM	USA	Steel and Bar
A 713 G10900	ASTM	USA	Steel and Wire

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