



## Material - AISI 1146

**Standard Specification For Carbon Steel Compositions For Forging To Hot-Rolled And Cold-Finished Steel and Bar**

**Group - Ferrous Mild Steel Alloys**

**Sub Group - AISI 1146 Carbon Steel Compositions For Forging To Hot-Rolled And Cold-Finished Steel and Bar**

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

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

Chemical Composition			Heat Treatment	
Carbon	C %	0.420 - 0.490	As Raw or Annealing or Normalizing or Hardening and Tempering	
Manganese	Mn %	0.700 - 1.000		
Phosphorus	P %	0.040 max.		
Sulphur	S %	0.080 - 0.130		
Aluminium	Al %	0.020 max.		
Niobium	Nb %	0.015 max.		
Silicon	Si %	0.100 max.		
Vanadium	V %	0.020 max.		
Iron	Fe %	Balance	Mechanical Properties	
-	-	-	Tensile Strength in Mpa	590 - 650
-	-	-	Yield Strength in Mpa	320 min.
-	-	-	Elongation in %	12 min.
-	-	-	Reduction of Area in %	35 - 40
-	-	-	Hardness in HB	170 - 187
-	-	-	Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
G11460	UNS	USA	Bars, Wire Rods, Plates, Strip, Sheets and Tubing
1146	SAE	USA	Bars, Wire Rods, Plates, Strip, Sheets and Tubing
A 1040 1146	ASTM	USA	Steel
A 29 1146	ASTM	USA	Steel and Bar
A 510 1146	ASTM	USA	Wire Rod, Round Wire and Steel
A 576 11L46	ASTM	USA	Steel and Bar
A 576 1146	ASTM	USA	Steel and Bar

**Further any inquiry to discuss with Gravity Cast Pvt. Ltd. – Gravity Group of Companies team member Call on +918469160029, or email [marketing@gravitycastindia.com](mailto:marketing@gravitycastindia.com)**

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