

Material: SAE 1045

Standard Specification For Carbon Steel Compositions For Forging To Hot-Rolled And Cold-Finished Bars, To Wire Rods, Plates, Strip, Sheets and Tubing

Group: Ferrous Mild Steel Alloys

Sub Group: SAE 1045 Carbon Steel Compositions For Forging To Hot-Rolled And Cold-Finished Bars, Wire Rods, Plates, Strip, Sheets and Tubing

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

Grade Belongs to the Industry: Bars, Wire Rods, Plates, Strip, Sheets and Tubing

Chemical Composition			Heat Treatment
Carbon	C %	0.430 - 0.500	As Raw or Annealing or Normalizing or Hardening and Tempering
Manganese	Mn %	0.600 - 0.900	
Phosphorus	P %	0.030 max.	
Sulphur	S %	0.050 max.	
Boron	B %	0.0005 - 0.003	
Chromium	Cr %	0.150 max.	
Molybdenum	Mo %	0.060 max.	
Nickel	Ni %	0.200 max.	
Lead	Pb %	0.150 - 0.350	
Iron	Fe %	Balance	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	

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
G10450	UNS	USA	Bars, Wire Rods, Plates, Strip, Sheets and Tubing
1045	AISI	USA	Steel and Bar
A 311 1045 Class A	ASTM	USA	Steel and Bar
A 311 1045 Class B	ASTM	USA	Steel and Bar
A 830 G10450	ASTM	USA	Plate and Steel
A 827 1045	ASTM	USA	Plate, Steel and Forging
A 682 Grade 1045	ASTM	USA	Steel and Strip

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Customer Care: +91-99090 45075 Email: info@icastllp.com



+91-99090 45075



info@icastllp.com



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