Material: SAE 4140

Standard Specification for Chemical Compositions of SAE Alloy Steels

Group: *Ferrous Mild Steel Alloys*
Sub Group: *SAE 4140 Chemical Compositions of SAE Alloy Steels*
Application: *Intended for Valve, Pump, General Engineering, Automotive and Other Industries*
Grade Belongs to the Industry: *Bar, Tube, Sheet, Strip and Forging*

Chemical Composition		
Carbon	C %	0.380 - 0.430
Silicon	Si %	0.150 - 0.350
Manganese	Mn %	0.750 - 1.000
Phosphorus	P %	0.025 max.
Sulphur	S %	0.025 max.
Chromium	Cr %	0.800 - 1.100
Nickel	Ni %	0.250 max.
Molybdenum	Mo %	0.150 - 0.250
Copper	Cu %	0.350 max.
Tungsten	W %	0.100 max.
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
Annealing or Normalizing or Hardening + Tempering

Mechanical Properties	
Tensile Strength in Mpa	621 - 1516
Yield Strength in Mpa	725 min.
Elongation in %	5 min.
Reduction of Area in %	20 min.
Hardness in HB	187 - 241
Impact in Joule	25.1 - 25.7 J @ RT

Cross Reference Table			
Material	**Standard**	**Country**	**Grade Belong to the Industry**
J14049	UNS	USA	Casting
4140	AISI	USA	Forging, Bar, Wire, and Shape
4140	AMS	USA	Bar and Forging
K11542	UNS	USA	Steel
K14047	UNS	USA	Steel
A732 8Q	ASTM	USA	Casting
-	-	-	-

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