

Grade Specification and its Application

S.No	Grade	Steel Type	Chemical properties and mechanical properties of raw material													Mechanical Properties Finish product in wire			B/Bar	Applications
			%C	%Mn	%Si	%P	%S	%Cr	%V	%Ni	%Mo	%Ti	%B	%Al	%Pb	UTS(N/mm2)	UTS(N/mm2)	Hardness		
1	SAE1035	Steel General applications	0.33-0.35	0.60-0.65	0.05-0.35	0.04max	0.050max	-	-	-	-	-	-	0.020-0.040	-	600-700	550 Max	85 Max	-	Nut Bolt,connecting rod etc.
2	SAE1038		0.35-0.42	0.60-0.90	0.05-0.35	0.04max	0.050max	-	-	-	-	-	-	0.020-0.040	-	600-700	550 Max	85 Max	-	Nut Bolt,connecting rod etc.
3	SAE1040		0.37-0.44	0.60-0.90	0.05-0.35	0.04max	0.050max	-	-	-	-	-	-	0.020-0.040	-	650-750	550 Max	85 Max	-	Chain for crain, tolift weights,bindng,Suspension ropes,wire for lifts
4	SAE1541		0.36-0.44	1.35-1.65	0.05-0.35	0.04max	0.050max	-	-	-	-	-	-	0.020-0.040	-	720-880	580 Max	88 Max	-	Nut Bolt,Fasteners for automobile and Bridge Industries
5	EN8D		0.40-0.45	0.70-0.90	0.05-0.35	0.06max	0.06max	-	-	-	-	-	-	0.020-0.040	-	650-750	580 Max	88 Max	20-25 Rc	Nut Bolt,Fasteners for automobile and Bridge Industries,Axles
6	EN8A		0.33-0.38	0.70-0.90	0.05-0.35	0.06max	0.06max	0.05 max	-	0.05 max	-	-	-	0.020-0.040	-	600-700	550 Max	85 Max	20-25 Rc	Forging
7	EN-9		0.50-0.60	0.50-0.80	0.05-0.35	0.06 Max	0.06 Max	0.15-0.25	-	-	-	-	-	-	-	700-800	750-900	95 Max	20-25 Rc	All automoubail applications
8	8FE410		0.23 Max	0.90 Max	-	0.055 Max	0.055 Max	-	-	-	-	-	-	-	-	450-550	600-700	-	90 Min	Machining and forging application for automobil sector
9	C-20		0.15-0.25	0.60-0.90	0.05-0.35	Max	0.055 Max	-	-	-	-	-	-	-	-	450-550	600-700	-	90Min	Machining and forging application for automobil sector
10	EN-18		0.35-0.45	0.60-0.95	0.10-0.35	Max	0.050 Max	0.85-1.15	-	-	-	-	-	-	-	-	-	-	-	-
11	16MnCr5	Alloy Steel	0.12-0.19	1.00-1.30	0.05-0.35	0.06max	0.06max	0.80-1.10	-	-	-	-	-	0.020-0.040	-	650 max	-	-	90 HRB Min	Case Hardening Automobile and Machines Parts Like Gear
12	20MnCr5		0.17-0.22	1.10-1.40	0.05-0.35	0.06max	0.06max	1.00-1.30	-	-	-	-	-	0.020-0.040	-	650 max	-	-	90 HRB Min	Case Hardening Automobile and Machines Parts Like Gear
13	SCM 415H		0.13-0.18	0.75-0.85	0.05-0.35	0.04max	0.04max	1.05-1.20	-	0.20-0.30	-	-	-	0.020-0.040	-	650 max	500 max	80 Max	-	Case Hardening Automobile and Machines Parts Like connecting rod
14	SCM 420H		0.19-0.23	0.75-0.85	0.05-0.35	0.04max	0.04max	1.05-1.20	-	0.20-0.30	-	-	-	0.020-0.040	-	650 max	500 max	80 Max	-	Case Hardening Automobile and Machines Parts Like Gear
15	SAE8620		0.18-0.23	0.70-0.90	0.05-0.35	0.04max	0.04max	0.40-0.60	-	0.40-0.70	0.15-0.25	-	-	0.020-0.040	-	500-600	-	-	-	Case Hardening Automobile and Machines Parts Pinion,crown,Wheel,Cam Shaft etc.
16	SAE4135		0.33-0.38	0.70-0.90	0.05-0.35	0.04max	0.04max	0.80-1.10	-	0.15-0.25	-	-	-	0.020-0.040	-	900-1200	600 Max	-	-	Case Hardening Automobile and Machines Parts Pinion,crown,Wheel,Cam Shaft etc.
17	SAE4140		0.39-0.43	0.90-1.00	0.05-0.35	0.04max	0.04max	0.80-1.10	-	0.15-0.25	-	-	-	0.020-0.040	-	1000-1400	600 Max	-	-	Case Hardening Automobile and Machines Parts Pinion,crown,Wheel,Cam Shaft etc.
18	40CR4		0.39-0.43	0.75-0.85	0.05-0.35	0.06max	0.04max	1.05-1.20	-	-	-	-	-	0.020-0.040	-	800-1000	600 Max	90 Max	-	forging
19	42CrM04		0.40-0.45	0.75-0.85	0.05-0.35	0.06max	0.04max	1.0-1.20	-	0.15-0.30	-	-	-	0.020-0.040	-	1000-1400	600 Max	-	-	-