

A193 B7 (AISI 4140)		Chemical Composition						
Carbon %	Manganese %	Phosphorous max %	Sulfur max %	Silicon %	Chromium %	Molybdenum %		
.37 - .49 %	.65 - 1.10	0.035	0.04	0.15 - 0.35	0.75 - 1.20	0.15 - 0.25		
Physical Properties								
Size	Tensile ksi,	Yield ksi,min	Elong,% min	Ra % min	HBW	HRC		
Up to 2-1/2	125	105	16	50	321 max	35 max		
2-5/8 - 4	115	95	16	50				
4-1/8 - 7	100	75	18	50				
A194 2, 2H, and 2HM Nuts								
Carbon %	Manganese %	Phosphorous max %	Sulfur max %	Silicon %	Chromium %	Molybdenum %		
.40 min	1.00 max	0.04	0.05	.40 max				
Mechanical properties A194 2, 2H, and 2HM								
Hardness Rockwell								
Proof Load Stress,KSI	Min	Max	Tempering					
175	C24	C38	850° F					
A194 Grade 4 Nuts								
Carbon %	Manganese %	Phosphorous max %	Sulfur max %	Silicon %	Chromium %	Molybdenum %		
.40 - .50	.70 - .90	0.035	0.04	.15-.35		.20 - .30		
Mechanical properties A194 Grade 4								
Hardness Rockwell								
Proof Load Stress,KSI	Min	Max	Tempering					
175	C24	C38	1100° F					
A194 Grade 7 Nuts								
Carbon %	Manganese %	Phosphorous max %	Sulfur max %	Silicon %	Chromium %	Molybdenum %		
.37 - .49	.65 - 1.10	0.035	0.04	.15-.35	.75 - 1.20	.15-.25		
Mechanical properties A194 Grade 7								
Hardness Rockwell								
Proof Load Stress,KSI	Min	Max	Tempering					
175	C24	C38	1100° F					
A193 B16 (Cr-Mo-V) Chemical Composition								
Carbon %	Manganese %	Phosphorous max %	Sulfur max %	Silicon %	Chromium %	Molybdenum %	Aluminium	Vanadium
.36 - .47 %	.45 - .70	0.035	0.04	0.15 - 0.35	0.80 - 1.15	0.50 - 0.65	.015max	.25 - .35
Physical Properties								
Size	Tensile ksi,	Yield ksi,min	Elong,% min	Ra % min	HBW	HRC		
Up to 2-1/2	125	105	18	50	321 max	35 max		
2-5/8 - 4	115	95	17	45	302 max	33 max		
4-1/8 - 7	100	85	18	45	227 max	29 max		