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