



Petrochemical

Grade of Nuts

GRADE OF NUT MARKING SYMBOL	2H	4	8	8M
Service Conditions†	Min: 0 °C Max: 450 °C	Min: -100 °C Max: 520 °C	Min: -250 °C Max: 575 °C	Min: -250 °C Max: 600 °C
Material Specifications	ASTM-A 194/A194M Carbon Steel	ASTM-A194/14M Carbon, Moly	ASTM-A194/A194M AISI Type 304	ASTM-A194/A194M AISI Type 316
Chemical Composition				
Carbon	0.40 Min	0.40-0.50	0.08 Max	0.08 Max
Silicon	0.40 Max	0.15-0.35	1.00 Max	1.00 Max
Manganese	1.00 Max	0.70-0.90	2.00 Max	2.00 Max
Nickel	-	-	8.00-10.50	10.00-14.00
Chromium	-	-	18.00-20.00	16.00-18.00
Molybdenum	-	0.20-0.30	-	2.00-3.00
Sulphur	0.050 Max	0.040 Max	0.030 Max	0.030 Max
Phosphorus	0.040 Max	0.035 Max	0.045 Max	0.045 Max
Titanium	-	-	-	-
Mechanical Properties				
Brinell Hardness	<1 ½" 248-327	>1 ½" 212-327	248-327	126-300
Sample Nut after Treatment	179 HB 89 HRB	147 HB 79 HRB	201HB 94 HRB	-



† Service Temperatures refer to actual metal temperatures.

Bolt Tension | Anti-Vibration | Product Reliability | Traceability

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Grade of Nuts

GRADE OF NUT MARKING SYMBOL	3	6	7	8T
Service Conditions†		Min: 0 °C Max: 5575 °C	Min: -100 °C Max: 565 °C	Min: -250 °C Max: 575 °C
Material Specifications	ASTM-A194/A194M AISI 501	ASTM-A194/A194M AISI 410	ASTM-A194/A194M AISI Type 4140	ASTM-A194/A194M AISI Type 3321
Chemical Composition				
Carbon	0.10 Min	0.15 Max	0.37-0.49	0.08 Max
Silicon	1.00 Max	1.00 Max	0.15-0.35	1.00 Max
Manganese	1.00 Max	1.00 Max	0.65-1.10	2.00 Max
Nickel	-	-	-	9.00-12.00
Chromium	4.00-6.00	11.50-13.50	0.75-1.20	17.00-19.00
Molybdenum	0.40-0.65	-	0.15-0.25	2.00-3.00
Sulphur	0.030 Max	0.030 Max	0.040 Max	0.030 Max
Phosphorus	0.040 Max	0.040 Max	0.040 Max	0.045 Max
Titanium	-	-	-	5x Carbon Content
Mechanical Properties				
Brinell Hardness	248-352	228-271	248-352	126-300
Sample Nut after treatment	201 HB 94 HRB	-	201 HB 94 HRB	-



† Service Temperatures refer to actual metal temperatures.