TorqBolt Inc.

MATERIAL GRADE DATA SHEET

ASTM A 194M 8NA

STAINLESS STEEL

NUT MATERIAL FOR HIGH TEMPERATURE SERVICE

ASTM A 194M 8NA is – Specification for carbon and alloy steel nuts for bolts for high-pressure or high-temperature service, or both. Its scope covers a variety of carbon, alloy and martensitic stainless steel nuts in the size range M6 through M100 nominal. It also covers austenitic stainless steel nuts in the size range M6 nominal and above. AISI 304N, When strain hardening is required with strain hardened Grades, it shall be specified in the order. ASTM A 194M 8NA nuts shall be machined from cold drawn bars or shall be cold forged to shape. No subsequent heat treatment shall be performed on the nuts. Use of coated fasteners at temperature above approximately one-half the melting point of coating is not recommended unless consideration is given to the potential for liquid and solid metal embrittlement, or both. The melting point of elemental zinc is approximately 415 °C. Therefore, application of zinc coated fasteners should be limited to temperature less than 210°C. Carbide Solution Treated in the finished condition

Chemical Properties

C	Si	Mn	P	S	Cr	Ni	N
0.08 Max	1.00 Max	2.00 Max	0.045 Max	0.030 Max	18.0-20.0	8.0-11.0	0.10-0.16

Mechanical Properties

Proof Load Using Threaded Mandrel- METRIC (kN)

Hardness

TYPE	M6	M8	M10	M12	M14	M16	BHN	HRB	HRC
HEAVY HEX	11.1	20.1	31.9	46.4	63.3	86.4			
HEX	10.4	18.8	29.9	43.4	59.2	80.9	126-192	60-90	-

TYPE	M20	M22	M24	M27	M30	M36
HEAVY HEX	134.8	166.7	194.2	252.5	308.6	449.4
HEX	126.2	156	181.8	236.4	288.9	420.8

Heat Treatment

Carbide Solution Treated in the finished condition

Equivalent Designation

UNS S30451

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