ASTM A193 B6 is a high-temperature ferritic stainless steel (UNS 41000, 410 stainless steel) bolting specification for extreme applications in heavy industry. ASTM A194 Grade 6 nuts (UNS 41000, 410 stainless steel) are the corresponding nut. Grade B6 studs and Grade B6 heavy hex bolts are 12-13 % chromium. Another common nut used is ASTM A194 Grade 6F (UNS S41600, 416 stainless steel). The slightly different grade of stainless can help with galling in certain applications.

www.chinastudbolt.com

Chemical composition of A193 B6 Stud bolt

Element	Ferritic Steel
Chromium Stainless Steel	Composition A, %
Carbon	0.08 - 0.15
Manganese	1.00
Phosphorus	0.040 max
Sulfur	0.030 max
Silicon	1.00 max
Chromium	11.5 - 13.5

Mechanical property of ASTM A193 Gr B6 Bolts

Grade	Diameter	Tensile Strength	Yield Strength	Elongation	Reduction	Hardness
A193 B6 Bolts	Up to M100, inclusive	760	585	15	50	--

A193 B6 Stud bolt Dimensions and Features

Thread Standards:

- Metric threads: ISO 261, ISO 965.
- Unified threads: UNC, UNF (ASME B1.1).

- **Length**:
  - Typically defined as the distance from end to end, excluding the thread runout.
- **Diameter Range**:
  - Metric: M6 to M100.
  - Inch: 1/4" to 4".
- **Thread Engagement**:
  - Standard engagement is 1.5 × nominal diameter.
- **Tolerance**:
  - Defined by thread classes (e.g., 6g for metric, Class 2A for UNC/UNF).