

TECHNICAL DATA

Zirconium

Zirconium fasteners provide excellent resistance to severe corrosion including hydrochloric, sulfuric, formic, nitric, and acetic acids. Zirconium out-performs Hastelloy in hydrochloric acid and in most concentrations of sulfuric acid. Though known for its tough corrosion resistance, zirconium bolts should not be exposed to oxidizing media such as ferric or cupric chlorides (even in low concentrations) because it will cause rapid corrosion. Zirconium is available in two grades: 702 (commercially pure) for highest corrosion and 705 (alloyed) for added impact strength.

Properties

| | | |
|---------------------------|--------------------------------|------------------------|
| Ultimate Tensile Strength | 89 ksi 68 ksi | Grade 705 Grade 702 |
| Yield Strength at 0.2% | 73 ksi 47 ksi | Grade 705 Grade 702 |
| Elongation % | 19 29 | Grade 705 Grade 702 |
| Usable Temperature Limit | 800°F / 426°C 700°F / 371°C | Grade 705 Grade 702 |

Key Benefits

- Excellent resistance to harsh acids including hydrochloric and sulfuric acid.
- Improved resistance over Hastelloy in many corrosive environments.
- Can rapidly corrode in the presence of oxidizing media – even in low concentrations

Chemistry & Specifications

| Zirconium 702 | Zr | Fe/Cr |
|---------------|-------|-------|
| Typical % | >99.2 | 0.2 |

ZIRCONIUM 702 SPECIFICATIONS: UNS R60702, ASTM B493 AND B550, ASME SB493 AND SB550 ROD (BAR), ASTM SB551, ASME SB551 PLATE, SHEET AND STRIP

| Zirconium 705 | Zr | Hf | Nb | Fe/Cr |
|---------------|-----|-----|-----|-------|
| Typical % | Bal | 4.5 | 2-3 | 0.20 |

ZIRCONIUM 705 SPECIFICATIONS: UNS R06705, ASTM B493 and B550, ASME SB493 and SB550 Rod (Bar)

Material Data

