

21CR-6NI-9MN

21Cr-6Ni-9Mn, also known as 21-6-9, is a high-manganese stainless steel alloy with a unique set of properties.

The alloy can be fabricated and formed much the same as 304 and 316 stainless with strengthening achieved through cold working. 21Cr-6Ni-9Mn is readily weldable and remains nonmagnetic after severe cold work. This alloy is known for its **excellent resistance to wear and galling, even at high temperatures. It also has good resistance to corrosion, particularly in marine environments**, due to its high chromium and nickel content. The high manganese nitrogen content gives it a superior yield strength compared to other stainless steels. Corrosion performance of this grade is comparable to that of 304.

Similar alloys: 22Cr-13Ni-5Mn, BioDur[®] 734 (Medical applications)



KEY FEATURES OF 21CR-6NI-9MN

- **High strength:** 21Cr-6Ni-9Mn is known for its superior yield strength compared to other stainless steels, making it an ideal choice for applications that require high strength. This alloy can only be strengthened through cold working.
- **Excellent wear resistance:** This alloy exhibits excellent resistance to wear and galling, even at high temperatures. This makes it a durable choice for various applications.
- **Corrosion resistance:** With high chromium and nickel content, 21Cr-6Ni-9Mn offers good resistance to corrosion, particularly in marine environments. This makes it a reliable material for use in harsh conditions. Corrosion performance of this grade is comparable to that of 304.
- **Versatility:** 21Cr-6Ni-9Mn is used in a wide range of industries, from aerospace to chemical processing, demonstrating its versatility.
- **Ideal for high-temperature applications:** Given its properties, the 21-6-9 alloy is an excellent choice for parts that operate at high temperatures, such as aerospace components.
- **Cost-effective:** Despite its superior properties, 21Cr-6Ni-9Mn is cost-effective compared to other high-performance materials, offering excellent lifecycle costs.

