

22CR-13NI-5MN

22Cr-13Ni-5Mn, also known as 22-13-5, is a nitrogen-strengthened stainless steel alloy that provides very good corrosion resistance in combination with high strength.

The numbers 22-13-5 refer to the composition of the alloy, which is approximately 22% chromium, 13% nickel, and 5% manganese, with the balance being iron. The alloy has an **excellent combination of strength, ductility, toughness, corrosion resistance, and fabricability**, making it useful in a wide variety of engineering applications. Additionally, the alloy has good toughness at cryogenic temperatures and relatively high tensile and yield strengths at moderately high elevated temperatures.

Similar alloys: 21Cr-6Ni-9Mn, BioDur[®] 734 (Medical applications)



KEY FEATURES OF 22CR-13NI-5MN

- **High strength:** 22Cr-13Ni-5Mn can achieve higher strength levels compared to 304/316 stainless steels. Due to its high nitrogen content, 22Cr-13Ni-5Mn processes approximately double the yield strength of 304/316 stainless with a high work-hardening rate during cold working. This alloy can only be strengthened through cold working.
- **Corrosion resistance:** Corrosion performance of this grade exceeds that of 316 due to its high molybdenum and nitrogen content.
- **Versatility:** 22Cr-13Ni-5Mn possesses a unique combination of strength and corrosion resistance, making it ideal for use in a wide variety of applications and industries.
- **Ideal for extreme temperature applications:** Good toughness at cryogenic temperatures in combination with relatively high strength at moderately high temperatures further highlights the versatility and usefulness of this alloy.

