

Stainless Steel Alloy 1.4923



Metal Alloys for Additive Manufacturing

ALTERNATIVE NAMES:

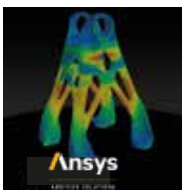
X22CrMoV12-1

| Properties | Unit | Heat-treated ¹⁾ |
|---------------------------|------|----------------------------|
| Tensile Strength R_m | MPa | 1400 ±30 |
| Yield Strength $R_{p0,2}$ | MPa | 1300 ±30 |
| Elongation at Break A_5 | % | 14 ±2 |
| Young's Modulus E | GPa | 210 ±5 |
| Hardness | HRC | 53 ±1 (as printed) |

Rosswag Engineering offers a holistic and fully integrated process chain for Additive Manufacturing services. Our portfolio ranges from manufacturing of your prototypes, tools and small serial products to an individual consulting and engineering process for the choice of material, parameters and process chain.



ENGINEERING



SIMULATION



SPECIAL METAL POWDERS



SLM[®]PROCESS



HEAT TREATMENT



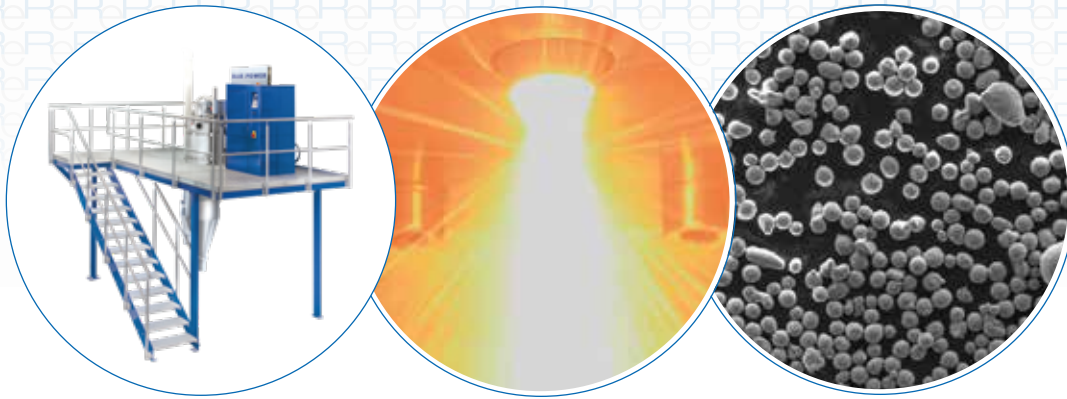
CNC FINISHING



MATERIAL ANALYTICS

ALL PROCESSES  ONE COMPANY





Material characteristics

The high-temperature resistant chromium steel 1.4923 can be used for temperatures up to 580 °C. In addition, the material has a good resistance against corrosion. Thus, it is frequently used for steam turbine parts and chemical applications. Because of the limited weldability, thermal conditions during additive manufacturing and heat treatment processes need to be considered carefully.

CHEMICAL COMPOSITION

| Element | Mass Fraction [%] |
|---------|-------------------|
| Fe | Balance |
| Cr | 11.00 - 12.50 |
| Mo | 0.80 - 1.20 |
| C | 0.18 - 0.24 |
| Ni | 0.30 - 0.80 |
| Mn | 0.40 - 0.90 |
| Si | ≤ 0.50 |
| P | ≤ 0.015 |
| S | ≤ 0.015 |

MICROSECTION



1) The specified material properties were determined at room temperature. They are multi-dimensionally dependent on many different machine and process parameters. Without further investigation, the material properties do not constitute a sufficient basis for component dimensioning.

2) Specific heat treatment processes lead to optimized mechanical-technological properties to meet the component requirements.