

Nickel VDM[®] Alloy 699 XA



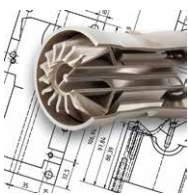
Metal Alloys for Additive Manufacturing

ALTERNATIVE NAMES:

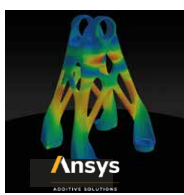
2.4842
N06699

Properties	Unit	Heat-treated ²⁾
Tensile Strength R_m	MPa	720 ±20
Yield Strength $R_{p0,2}$	MPa	320 ±15
Elongation at Break A_5	%	57 ±3
Young's Modulus E	GPa	180 ±20
Charpy Notch Toughness A_v	J	175 ±15

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.



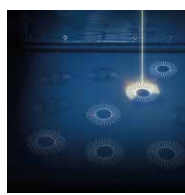
ENGINEERING



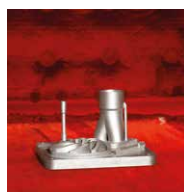
SIMULATION



SPECIAL
METAL POWDERS



LPBF PROCESS



HEAT
TREATMENT



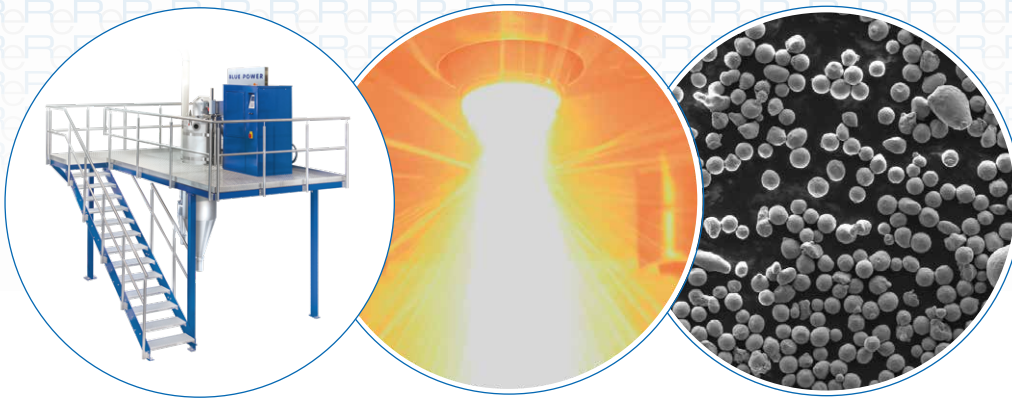
CNC FINISHING



MATERIAL
ANALYTICS

ALL PROCESSES BY ONE COMPANY





Material characteristics

Alloy 699 XA is a nickel-chromium-aluminium alloy that exhibits excellent corrosion resistance. With a good weldability and its unique resistance against metal dusting – a special kind of high-temperature corrosion – the material is perfectly suitable for applications in the petrochemical industry like synthesis gas processes for the production of hydrogen, ammonia and methanol and the cooling of synthesis gas in the production of e-fuels. Combined with the advantages of Additive Manufacturing VDM Alloy 699 can be an enabler for demanding Power2X applications.

CHEMICAL COMPOSITION

Element	Mass Fraction [%]
Ni	Balance
Cr	26.0 - 30.0
Al	1.9 - 3.0
Fe	≤ 2.5
Mn	≤ 0.5
Si	≤ 0.5
Ti	≤ 0.6
Nb	≤ 0.5
Cu	≤ 0.5
Zr	≤ 0.1

MICROSECTION



5000 μm

- 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.

