

ABSTRACT

The invention is related to a high gamma prim nickel based superalloy, its use and a method of manufacturing of turbine engine components by welding, 3D additive manufacturing, casting and hot forming, and the superalloy comprises by wt%: from 9.0 to 10.5 % Cr, from 16 to 22 % Co, from 1.0 to 1.4 % Mo, from 5.0 to 5.8 % W, from 2.0 to 6.0 % Ta, from 1.0 to 4.0% Nb provided that total content of Ta and Nb remains with a range from 3.0 to 7.0%, from 3.0 to 6.5 % Al, from 0.2 to 1.5 % Hf, from 0.01 to 0.2% C, from 0 to 1.0 % Ge, from 0 to 1.0 wt. % Si, from 0 to 0.2 wt. % Y, from 0 to 0.015 wt. % B, from 1.5 to 3.5 wt. % Re, and nickel with impurities to balance.

Fig. 11c