

CAST PRODUCT HAVING ALUMINA BARRIER LAYER

ABSTRACT

A cast product for use in high temperature atmosphere comprising a cast body of a heat-resistant alloy comprising of, in mass percent, 0.05 to 0.7% of C, over 0% to up to 2.5% of Si, over 0% to up to 3.0% of Mn, 15 to 50% of Cr, 18 to 70% of Ni, 2 to 4% of Al, 0.005 to 0.4% of rare-earth elements, and 0.5 to 10% of W and/or 0.1 to 5% of Mo, the balance being Fe and inevitable impurities, and a barrier layer formed at a surface of the cast body to be brought into contact with said high temperature atmosphere, said barrier layer comprising an Al_2O_3 layer having a thickness of 0.5 μm or more wherein at least 80 area % of the outermost surface thereof is Al_2O_3 , and said cast product having Cr-based particles dispersed at an interface between the Al_2O_3 layer and the cast body at a higher Cr concentration than that of a matrix of the alloy.

Fig. 1