

## ABSTRACT

**Research work contains:** 66 pages, 20 drawings, 8 tables, 25 sources of literature.

**Purpose:** determine the stability of the alloy TNM-G to high temperature oxidation. Develop a model representation of the mechanism of the process of high-temperature oxidation of alloys based on  $\gamma$ -TiAl.

**Research methods:** to conduct lengthy test (30x3 hrs.) on the heat resistance of the alloy TNM-G in air at 700 °C, 800 °C, 900 °C and the duration of each isothermal holding 10 hours. To measure the rate of oxidation gravimetric method.

**Subject of research:** determine the stability of the alloy TNM-G to high temperature oxidation.

**The Object of research:** alloy TNM-G.

**Scientific novelty:** each alloy based on  $\gamma$ -TiAl has the physical, chemical and mechanical properties. In particular, the heat resistance of these alloys depends on the concentration of aluminum, the nature and concentration of other alloying elements.

**Practical meaning:** material used at high temperatures of 600-800 °C. At such temperatures, alloys based on  $\gamma$ -TiAl in operation will be subject to hard environmental impact. It is important to know how heat-resistant alloy, carried determine the stability of the alloy to high temperature oxidation.

**Key words:** High-temperature oxidation, Titanium Aluminide Alloys, oxide layer, heat resistance based alloy  $\gamma$ -TiAl.