

## Oxidation behavior of Ni-base single crystal superalloys at 1000°C

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The current state-of-the-art in Ni-base superalloy design is the production of single crystal turbine blades. The major advancements can be attributed to the introduction of large amounts of specific refractory elements into the base compositions. In this study, six Ni-base alloys were cast utilizing a modified Bridgman casting process, and oxidized at 1000°C up to 275 h in air. The weight changes during oxidation were continuously monitored as a function of time using a TGA. The polished specimens were etched to examine the microstructure. They were investigated by means of a SEM/EDS, EPMA, and XRD with Cu-K $\alpha$  radiation. The aim of this study is to characterize the chemical effects of Re, W, and Ru on the high temperature oxidation behavior of Ni-based superalloys in air.

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