

Analysis of Creep Behavior of Silicon Nitride Solid Solutions by Four Point Bending Creep Tests

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Abstract: *High-temperature applications have different life-limiting failure types. One of them is creep failure. Creep is the time-dependent and permanent plastic deformation of a material subjected to stress at elevated temperatures. Creep can limit the lifetime of a part by the plastic deformation or by failure due to creep rupture. So analysis of creep behavior of a material, which is candidate for high temperature application, becomes significant for material selection. The creep behavior of materials can be determined by a combination of creep testing and microstructural evaluation. In this study creep behavior of SiAlON ceramics, which are solid solutions of Silicon Nitride ceramics, was investigated by four point bending creep tests.*

Keywords: *Silicon Nitride, SiAlON ceramics, creep, four point bending*