Abstract

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On The Diffusion Behaviour of Os in the Binary Ni-Os system

The diffusion of Os in Ni is characterised by measuring interdiffusion coefficients in the binary Ni– Os system, in the temperature range 1200–1350uC. The results are compared with data for Ni–Re. Theoretical calculations indicate that Os should display a diffusion coefficient comparable with Re, among the lowest displayed by elements from the d-block transition elements. The authors' experimental findings confirm these predictions, and suggest that alloying with Os is likely to improve the high temperature properties of the nickel-based superalloys.