

Paduan Ni-Cu-Mn sebagai logam alternatif kedokteran gigi: efek perendaman dalam larutan 0,1% sodium sulfida

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Abstrak

In this study, the ternary base alloys of nickel-copper-manganese (Ni-Cu-Mn) alloys are prepared and these ternary alloys systems, which were constituted from higher nickel and lower copper contents than copper-base alloy ones, were evaluated by a tarnish test. Tarnish tests conducted in a 0,1% sodium sulphide solution (pH=12) at 37°C. All test specimens were cast into square paddles of 15 mm x 20 mm x 2,5 mm using the lost-wax technique with a phosphate-bonded investment. The surface of the specimens were then prepared with abrasion papers down to a 600 grit finish. Tarnish attack was quantitatively evaluated by Fibre colorimetry. The results of tarnish test showed that ternary nickel-copper-manganese alloys, such as 40Ni-30Cu-30Mn and 50Ni-30Cu-20Mn, have superior tarnishment resistance than other alloys, e.g. 20Ni-40Cu-40Mn, 30Ni-30Cu-40Mn and 30Ni-40Cu-30Mn. It was also found that 40Ni-30Cu-30Mn and 50Ni-30Cu-20Mn alloys have lower values of colour change vector than the other alloys given above.