The emissivity of three Ni and Co based aeronautical alloys is analyzed in this paper. These alloys are employed in high temperature environments whenever good corrosion resistance, high temperature resistance and high strength are essential. Thus, apart from the aeronautical industry, these alloys are also used in other technological applications, as for example, aerospace, nuclear reactors, and tooling. The results in this paper extend the emissivity data for these alloys available in the literature. Emissivity dependence on the radiation wavelength (2-22 mm), sample temperature (200-650 ºC) and emission angle (0º-80º) has been investigated. In addition, the effect of surface finish and oxidation has also been taken into consideration. The total hemispherical emissivity can be calculated by integrating the spectral directional emissivity values. The data in this paper have several applications, as temperature measurement of a target by pyrometry, low observability of airplanes and thermal radiation heat transfer simulation in airplane nozzles or furnaces.