

HASTELLOY[®] C-4 alloy

Principal Features

A versatile Ni-Cr-Mo alloy with extremely high resistance to HAZ sensitization

HASTELLOY[®] C-4 alloy (UNS N06455) is the most (microstructurally) stable of the widely used nickel-chromium-molybdenum materials, which are well known for their resistance to many aggressive chemicals, in particular hydrochloric acid, sulfuric acid, and chlorides. This stability means that the alloy can be welded without fear of sensitization, i.e. the nucleation and growth of deleterious, second phase precipitates in the grain boundaries of the weld heat-affected zone (HAZ).

Like other nickel alloys, it is ductile, easy to form and weld, and possesses exceptional resistance to stress corrosion cracking in chloride-bearing solutions (a form of degradation to which the austenitic stainless steels are prone). With its high chromium and molybdenum contents, it is able to withstand both oxidizing and non-oxidizing acids, and is resistant to pitting and crevice attack in the presence of chlorides and other halides.