

INCOLOY

Nickel-Iron-Chromium Alloys and INCO Nickel-Iron-Chromium Alloys

The INCOLOY alloys are based predominantly on the nickel-iron-chromium ternary system. However, some of the alloys (those designed for low thermal expansion) do not contain chromium and one (INCOLOY alloy MA 956) contains no nickel. Others contain molybdenum and copper for enhanced corrosion resistance and aluminum, titanium or niobium for strengthening by heat treatment. In general, the INCOLOY alloys differ from the INCONEL and NIMONIC alloys by lower nickel contents, higher iron contents and somewhat higher chromium contents.

Among the nickel-iron-chromium alloys are some (e.g., NI-SPAN-C alloy 902 and INCO alloys 020 and 330) that do not bear the INCOLOY trademark.

Nickel-iron-chromium alloys are characterized by good corrosion resistance in aqueous environments and by excellent strength and oxidation resistance in high-temperature atmospheres. The high nickel content makes the alloys superior to stainless steels in resisting corrosion, especially chloride-ion stress-corrosion cracking. At high temperatures, the substantial chromium content provides resistance to oxidizing environments, and the combination of nickel, iron and chromium results in good creep-rupture strength. Those characteristics, combined with ease of fabrication, give the alloys broad usefulness. Applications include heat-treating furnaces and equipment, pyrolysis furnaces, steam generators and heating-element sheathing.

INCOLOY	UNS
800	N08800
800H	N08810
800HT	N08811
825	N08825
925	N09925

INCO	UNS
020	N08020
330	N08330
A286	S66286