HASTELLOY® G-35® alloy

Principal Features

A nickel alloy with exceptional resistance to “fertilizer-grade” phosphoric acid
HASTELLOY® G-35® alloy (UNS N06035) was designed to resist “fertilizer-grade” phosphoric acid (P_2O_5), which is used in the production of fertilizers. Tests in real-world solutions indicate that G-35® alloy is far superior to other metallic materials in this acid. It was also designed to resist localized attack in the presence of chlorides, since this can be a problem beneath deposits in evaporators used to concentrate “fertilizer-grade” phosphoric acid. Furthermore, G-35® alloy is much less susceptible to chloride-induced stress corrosion cracking than the stainless steels and nickel-chromium-iron alloys traditionally used in “fertilizer-grade” phosphoric acid.

As a result of its very high chromium content, G-35® alloy is extremely resistant to other oxidizing acids, such as nitric, and mixtures containing nitric acid. It possesses moderate resistance to reducing acids, as a result of its appreciable molybdenum content, and, unlike other nickel-chromium-molybdenum alloys, it is very resistant to “caustic de-alloying” in hot sodium hydroxide.

HASTELLOY® G-35® alloy is available in the form of plates, sheets, strips, billets, bars, wires, pipes, tubes, and covered electrodes. Applications include P_2O_5 evaporator tubes.

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