عنوان مقاله:

Chemical Passivation Treatments for Corrosion-Resistant 321 Series Stainless Steels and Detecting The operation by Salt Spray and Copper Sulfate Tests

محل انتشار:

سومین کنفرانس ملی و اولین کنفرانس بین المللی پژوهش های کاربردی در علوم شیمی و مهندسی شیمی و سومین کنفرانس ملی و اولین کنفرانس بین المللی پژوهش های کاربردی در زیست شناسی (سال: 1395)

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خلاصه مقاله:

Stainless steel is an alloy of iron with chromium. The 321 series is a stabilized austenitic stainless steel. Chromium produces a thin layer of oxide on the surface of the steel known as the 'passive layer'. This prevents any further corrosion of the surface. Increasing the amount of chromium gives an increased resistance to corrosion. Other elements such as nickel may be added to impart other useful properties such as enhanced formability and increased corrosion resistance. The presence of free iron may interfere with the formation of the passive film. The cleaning of these contaminants from the 321 series surface will facilitate the spontaneous passivation by allowing the oxygen uniform access to the surface. Passivation, is defined as the chemical treatment of a stainless steel with a mild oxidant, such as a nitric acid solution, for the purpose of the removal of free iron or other foreign matter from the surface 321 series, and also the maximizing corrosion resistance. The salt spray and copper sulfate tests are suitable for 321 series for the detection of passivation. The detection of passivation behaviors for corrosion-resistant 321 series by salt spray and copper sulfate tests has been studied by scanning electron microscopy (SEM). In this paper showed in comparison the passivated sample with non passivated sample.

کلمات کلیدی:

passivation, corrosion, stainless steels, salt spray, copper sulfate