

عنوان مقاله:

An experimental study of the corrosion Process of metals in virtue of crude oils and the characteristics

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خلاصه مقاله:

Crude oils are dominant earth resources since composed with large number of hydrocarbons and some of trace compounds especially with corrosive compounds such as sulfur compounds, naphthenic acids and salts. In the current research the major scope was the investigations of the impact of such corrosive compounds on the corrosion of seven different types of ferrous metals in both qualitatively and quantitatively. According to the methodology such corrosive properties of two different types of selected crude oils were analyzed and the chemical compositions of seven different types of selected ferrous metals were detected by the standard methodologies and recommended instruments. The corrosion rates of such metals were determined by the relative weight loss method after certain immersion time periods in both crude oil samples while analyzing the corroded metal surfaces through a microscope. In addition that the decays of metallic elements from metals into crude oil samples were measured and the variations of the initial hardness of metals after the corrosion were measured by Vicker's hardness tester. Basically there were observed the lower corrosion rates from stainless steels mainly with at least ۱۲% of chromium and sufficient amount of nickel, higher progress of salts on the metallic corrosion at the normal temperatures while comparing with other corrosive compounds, formations of FeS, Fe<sub>2</sub>O<sub>3</sub>, corrosion cracks and cavities on the metal surfaces, decay of ferrous and copper from most metals while the immersion into crude oils and small and some insignificantly deductions of the initial hardness of metals

کلمات کلیدی:

Crude oils, Corrosive composites, Ferrous metals, Decay, weight loss

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