

Abstract

The purpose of this study was to evaluate the effectiveness of organic inhibitor to slow down or inhibit the mild steel corrosion caused by red sea environment.

2-aminobenzimidazole (2-ABA) was used as inhibitor, corrosion was evaluated through weight loss determination and electrochemical techniques. The results obtained revealed that 2-ABA is a mixed inhibitor. The extent of inhibition reached 97.53% at the highest concentration of the inhibitor.

Morphological analysis of mild steel specimens using scanning electron microscopy (SEM) and Energy Dispersive x-ray spectroscopy (EDAX) provide supportive evidence for the formation of film that retards corrosion process.

Further evidence was derived from IR spectra which showed shift or disappearance of peaks indicating the binding between inhibitor and mild steel surface.

الخلاصة

الغرض من هذه الدراسة هو تقييم كفاءة مثبت عضوي في تقليل وكبح التآكل الذي يحدث للحديد المطاوع بواسطة تأثير مياه البحر الأحمر. تم استخدام مركب 2- أمينوبنزميدازول وبنزوتريزول كمثبت، تم تقييم مدى التآكل من خلال تحديد النقصان في الوزن والطرق الكهروكيميائية. النتائج المتحصل عليها أظهرت كفاءة عالية لهذا المثبت تصل إلى 97.53% عند أعلى تركيز له. تحليل الشكل الظاهري لعينات من الحديد باستخدام (SEM) و (EDX) وضح تكون طبقة من المثبت على سطح الحديد عملت على أعاقه عملية التآكل. أشارت طقنية المطيافية تحت الحمراء إلى تكون رابطة بين المثبت والحديد المطاوع.

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