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Corrosion inhibitors for ferrous and non-ferrous metals and alloys in ionic sodium chloride solutions: A review

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Abstract

Metallic materials have been extensively used in marine environments particularly in production, processing and transport industries for the construction of pipelines, households, fuel tanks, oil lines, power lines, heat conductors, heat exchangers and several other marine applications due to their high mechanical strength and relatively low cost. However, sodium chloride is an aggressive ionic solution which reduces their workability, corrosion resistance, fatigue resistance and weldability behaviors. The survey of literature reveals that there is no good systematic review on metallic corrosion inhibition in sodium chloride media is available. Therefore, the review on corrosion inhibition of these materials in the ionic solution of sodium chloride is highly anticipated. Present review article provides important features of corrosion inhibitors that have been employed for metals and alloys in sodium chloride media. The article focuses on the inhibitive behavior of plant extracts, inorganic salts and organic compounds as well as synergistic behavior of inorganic-inorganic mixtures, organic-organic mixtures and

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