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Anticorrosive effects and antimicrobial properties of alkyldimethyl(hydroxyalkyl)ammonium bromides

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Abstract

Quaternary ammonium compounds containing the hydroxyalkyl moiety in the head group have been synthesized. These compounds exhibit a micelle-forming ability, high anticorrosive activity, and antimicrobial action. The compounds of the formula $R(\text{CH}_3)_2\text{N}^+(\text{CH}_2\text{CH}_2\text{CH}_2\text{OH})\text{Br}^-$ with $R = \text{C}_{14}\text{H}_{29}\text{--}\text{C}_{18}\text{H}_{37}$ are characterized by a protective effect higher than 90-99% at 10 mg/l with respect to hydrogen sulfide corrosion, inhibiting properties against carbon dioxide corrosion (84-98% at 10-25 mg/l), and bactericidal action on sulfate-reducing bacteria (10-50 mg/l). © 2011 Pleiades Publishing, Ltd.

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