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CORROSION BEHAVIOR OF SOME LOW-CARBON STEELS IN ORGANIC ENVIRONMENT IN THE PRESENCE OF SUCCINIC AND ADIPIC ACIDS

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Abstract

The behaviour of three types of steel, with a variable carbon concentration (from 0.20 to 0.40 %) is studied in medium of ethylene glycol – 10 % methanol – 5 % succinic or adipic acid with water concentration varying between 1 % to 5 %. IR spectroscopy, X-ray diffraction and chemical analysis were the methods used for corrosion compounds analysis. The weight losses were measured; also the polarization curves were plotted and the corrosion parameters were established. Based on the obtained results, a corrosion mechanism was assigned for each type of steel.

Keywords: low-carbon steel, succinic acid, adipic acid, inter-crystalline corrosion, pitting

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