

Short Communication

Corrosion Behavior of L415 Natural Gas Pipeline in High pressure Oxygen-enriched and High salt Environment

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The corrosion behavior of L415 steel natural gas pipeline under high pressure oxygen-rich and high-salt environment was investigated by combining electrochemistry and immersion test with scanning electron microscope and X-ray diffraction. Results show that serious corrosion of L415 steel occurred in high-pressure oxygen-rich and high-salt environment with corrosion rate of 0.847 mm. a-1, which belonged to serious corrosion level. The ions of the leaching liquid and the oxygen-rich environment can promote L415 steel corrosion. In terms of morphology, a thick layer of corrosion products was generated from the pitting of L415 steel surface, and some area even had a severe corrosion groove after removal of corrosion products. The corrosion of L415 steel was quite severe in high-pressure oxygen-rich and high salt environment, that the steel must be kept in inert atmosphere and swept with water having low salt concentration.

Keywords: L415 steel High pressure oxygen-enriched and high salt environment Corrosion behavior

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