

论文

X52钢的CO₂腐蚀行为

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摘要:

通过扫描电镜观察及X射线衍射分析,研究X52钢在模拟输送管腐蚀环境条件下的腐蚀行为.结果表明,X52钢的平均腐蚀速率为 0.6289 mm/a ,其表面形成三层形貌及成分各异的腐蚀产物,三层膜中主要的腐蚀产物均是FeCO₃和Fe₂O₃,宏观腐蚀形态基本为均匀腐蚀,但是在扫描电镜下观察到金属遭受的破坏以局部腐蚀为主.

关键词: X52钢 CO₂腐蚀 管线钢

CORROSION BEHAVIOR OF STEEL X52 IN A SIMULATED PIPELINE ENVIRONMENT CONTAINING CO₂

Abstract:

Corrosion behaviour of X52 steel in a simulated pipeline environment was studied by scanning electron microscope and X ray diffraction analysis. The results showed that uniform corrosion rate of X52 in the experimental condition was 0.6289 mm/a . The corrosion product scales of three layers, which had different images and chemical compositions was formed on the surface of corroded coupon. The main corrosion products were FeCO₃ and Fe₂O₃. The morphology of Corroded couple shows characteristics of uniform corrosion macroscopically however that of localized corrosion microscopically.

Keywords: X52 steel CO₂ corrosion Pipeline steel

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