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研究报告

NF616和12CrMoV在模拟垃圾气化环境中的高温腐蚀

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摘要： 研究比较了600℃时NF616和12CrMoV两种工业钢分别在3种还原性气氛（H_2-CO_2、 H_2-HCl-CO_2和H_2--HCl-H_2S-CO_2）中的腐蚀行为。与在H_2-CO_2和H_2-HCl-CO_2气氛中的腐蚀相比，NF616和12CrMoV在H_2-HCl-H_2S-CO_2气氛中发生了加速腐蚀，尤其是12CrMoV表面氧化铬膜发生退化，金属的加速腐蚀主要是由腐蚀过程中形成金属硫化物和氯化物所致，文中依据热力学相图讨论了材料发生加速腐蚀的机制。

关键词： 硫 氯 高温腐蚀 内氧化

HIGH TEMPERATURE CORROSION OF NF616 AND 12CrMoV IN SIMULATED WASTE-GASIFICATION ENVIROMENTS

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Abstract: The corrosion behavior of two commercial steels NF616 and 12CrMoV was comparatively investigated at 600℃ in H_2-CO_2, H_2-HCl-CO_2 and H_2-HCl-H_2S-CO_2 reducing atmospheres. In comparison with corrosion behavior of the same-type steels in H_2-CO_2 and H_2-HCl-CO_2 reducing atmosphere, NF616 and 12CrMoV suffered from accelerated corrosion in the H_2-HCl-H_2S-CO_2 atmosphere, particularly the degradation of chromia formed on 12CrMoV. The kind of accelerated corrosion was mainly attributed to formation of metal chlorides and sulfides during corrosion procedure. The mechanism on accelerated corrosion is illuminated on the basis of thermodynamic diagrams.

Keywords: sulfur chlorine high temperature corrosion internal oxidation

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