Effect of Sulphide Addition to Chloride Environment on Corrosion Behavior of SAF2507 Duplex Stainless Steel

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The effect of sulphide addition to chloride environment on corrosion behavior of SAF2507 stainless steel at different temperatures was studied by slow strain rate test and electrochemical test, the tensile fracture morphology was observed by SEM. The results indicated that sulphide could enhance the stress corrosion susceptibility of SAF2507 duplex stainless steel. In addition sulphide made the general corrosion resistance of SAF2507 duplex stainless steel decrease. With the increase of temperature the effect of sulphide on rising corrosion susceptibility of steel was more obvious. In addition, sulphide made corrosion pits occurred in ferrite-austenite phase boundaries become increasing.

Keywords: SAF2507 Duplex Stainless Steel; Sulphide; Stress corrosion cracking; Electrochemical corrosion;

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