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18Cr2Ni4WA材料时效脆化评价及改进措施研究

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摘要 为消除 18Cr2Ni4WA材料的时效脆化因素,对原材料在不同条件下进行了热处理,并对热处理前后的试样在 300或 350℃下进行时效考验,通过测定硬度和冲击韧性来评价它们的强韧性,并利用扫描电镜分析显微组织和冲击断口特征。结果表明:原 18Cr2Ni4WA材料中存在残余奥氏体不稳定相,有时效脆化倾向。通过合理的热处理,可消除材料中的残余奥氏体不稳定相,达到防止时效脆化的目的

关键词 [18Cr2Ni4WA](#) [时效脆化](#) [热处理](#)

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Study on the 18Cr2Ni4WA's Aging Embrittlement and the Improvements

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Abstract Heat treatments under different conditions are carried out on the 18Cr2Ni4WA, and the materials before and after heat treatment are aged at 300 or 350 °C for a period of time, their strengths and toughness are evaluated by determining HRC and impact toughness. The microstructures and fractures are investigated by SEM. The result shows that there are unstable retained austenites in the original material, the material has the tendency of aging embrittlement. These unstable phases can be eliminated by reasonable heat treatment, so the aging embrittlement can be avoided.

Key words [Cr2Ni4WA](#) [aging embrittlement](#) [heat treatment](#)

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