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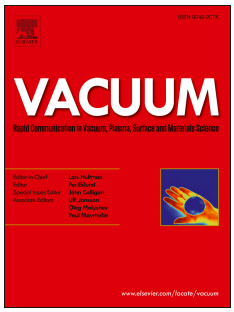

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Removal of chloride impurities from titanium sponge by vacuum distillation

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Abstract: Thermodynamics analysis and affecting factors of vacuum distillation on removal of chloride impurities from titanium sponge were studied. The theoretical results show that volatilization ability of Mg,$MgCl_2$, $TiCl_2$ and $TiCl_3$ are very strong under vacuum when distillation temperature is more than 800℃. And chloride impurities could be removed more effectively by improving volatilization rate of $MgCl_2$ at 900℃-1050℃ with lower residual system pressure. Experimental results showed that chlorine content in the titanium sponge significantly increased with the increasing of system pressure and chlorine content in magnesium reductant. Meanwhile, the removal of chlorine from titanium sponge was very temperature and distillation time dependent. In addition, the chloride impurities were more difficult to be removed with the decreased porosity of titanium sponge. Finally, optimized parameters for distillation furnace with single batch production capacity of 7.5t titanium sponge were achieved. The chlorine content in final titanium sponge

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