Changes of gas contents in γ -iron on oxidation

by

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Abstract

This experiment purpose study changes of gas contents in γ -iron on oxidation. γ -iron was oxidized under atmospheric pressure and 1273K. The treatment times were 5.4×103, 1.08×104, 1.8×104 and 2.88×104 seconds. In a previous paper, it was reported that nitrogen is absorbed at about1.08×104 seconds by the material. In this study, however, nitrogen was absorbed within 1.8×104 seconds in the γ -iron. The difference between the previous study and this study is probably due to the oxygen present in the specimen. Oxygen potential and oxygen in the specimen might prevent nitrogen from being absorbed by the γ -iron. Nitrogen is absorbed by the γ -iron because the oxygen potential above of the specimen might decrease with oxidation time. The thickness of oxidation scale obey the parabolic law.

Keywords: *γ -iron, oxidation, nitrogen, gas contents*

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