Research Title	Purification of Ferric Oxide from Iron Rust
Author	Ms. Worawan Thuleechan
M.S.	Teaching Chemistry

Examining Committee :

Assist. Prof. Titipun	Kwangsuksathid	Chairman
Assist. Prof. Dr. Saisunee	Liawruangrath	Member
Assist. Prof. Dr. Somchai	Thongtem	Member

Abstract

High purity ferric oxide was prepared by digestion of iron rust from industries with either hydrochloric or sulfuric acid under appropriate conditions. It was then precipitated by sodium hydroxide, ammonium hydroxide and sodium acetate respectively. The precipitate was heated at 750 ° C for 2 hours and the ferric oxide with high purity was obtained. As compared between % Fe_2O_3 precipitated with the same base obtained from the digestion of iron rust by hydrochloric acid and sulfuric acid, it was found that they showed nearly the same purity. By precipitation of ferric oxide from each acid solution (hydrochloric acid or sulfuric acid), the three precipitants were compared. It was found that sodium acetate produced the highest quantity of ferric oxide 99.33 - 99.67%, whereas ammonium hydroxide and sodium hydroxide precipitated ferric oxide of 99.00 - 99.59 % and 97.70 - 99.06% respectively. Trace elements namely; copper, chromium, nickel, manganese, zinc and silicon in the precipitates were also analysed by atomic absorption spectrophotometry and were very little. X-ray diffraction pattern also showed that the final product was ferric oxide.