

Abstract

The present study describes a simple, selective, rapid and economical method for the determination of iron (III) in its synthetic alloys using 3-hydroxy -3- phenyl-1- (2,4,6-tribromophenyl) triazene as metallochromic indicator in the *PH* and temperature range of 2.5-3.0 and 20 – 600c respectively. The colour and shape of the synthesized indicator was light yellow shining needles having melting point of 590c. It was crystallized from ethanol. The results of elemental study showed that, the values of C, H, N obtained experimentally agrees very well with those obtained theoretically. The colour at the end point changes from violet to light yellow using EDTA as a titrant. There is no interference in either determination from common metal and anion ions other than Pb(II), Cr(II), Mo(VI), Mn(II), U(vI), Cu(II), Cd(II), *F*⁻, *PO4*³⁻, *C2O4*²⁻, *HPO4*²⁻. Reproducible and accurate results are obtained for 5.59 -1.12mg of Iron with relative error less than $\pm 1.79\%$ and standard deviation not more than 0.10%. The results of the test method and reference method (Atomic absorption spectrophotometric) showed that, there is no statistical difference in the results by the two methods.