

EXTRACTIVE SEPARATION OF SOME METALS
USING
A SESAME OIL BASED N-PHENYLHYDROXAMIC ACID

A DISSERTATION

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ABSTRACT

A reagent, N-phenylhydroxamic acid with a C-substituent from sesame oil, has been synthesised, and is found to form complexes with iron(III), copper (II), and titanium (IV), which are extractable into cheap organic solvents such as petroleum ether.

Simple liquid - liquid extraction studies show that almost complete extraction of iron(III) and copper (II) can be obtained from their aqueous solutions with appropriate adjustments of pH and the correct choice of the buffer system. Selective extraction of one of these metals in the presence of the other is possible. It is also shown that titanium (IV) can be separated as a precipitate.

This study brings out the importance of the concentration of the components of buffer systems in metal extraction studies.

It is shown that selectivity in liquid - liquid extraction of metals can be achieved through the proper adjustment of the concentration of the components of buffer systems, especially when the reagent forms complexes of low stability with metals such as iron and copper. Thus, the use of the readily available sesame oil in the preparation of

a metal extractant, is established.