

P R E F A C E

Aniline has been used as the parent compound for the production of an innumerable number of important chemicals. Amongst the large number of anilino-derivatives that have gained prominence in chemical industries, the place of the N,N'-dialkylanilines is quite leading.

The excellence of the N,N'-dialkylanilines like dimethylaniline, diethylaniline etc. is inherent in their successful applications in a great number of fields of chemical importance, and particularly in dye industry, for producing a large number of excellent dyes, used in dyeing a great variety of daily necessitates, comprising of cotton, wool, silk, leather, rubber, paper etc. and for preparing various types of printing inks.

A large number of methods of preparation of these N,N'-dialkylanilines are available in literature but most of them are uneconomical and are of mere academic interest. While, uses of the alcohols, methanol and ethanol, in the syntheses of dimethylaniline and diethylaniline, have extensively been reported in literature; practically, no useful informations were available regarding the syntheses of dipropylaniline and dibutylaniline, from the respective alcohols, n-propanol and n-butanol. Unfortunately, most of the reportings, even found with dimethylaniline and diethylaniline, are in the form of patents and as such no useful informations are disclosed by them, and published papers are extremely meagre.

It was found from literature that replacement of dimethylaniline by diethylaniline, produced a new dye, much superior to

the parent dye. The idea, possibly could be extended, analogously, to the effect that suitable replacement of dimethylaniline, diethylaniline, in different existing dyes, by higher dialkylanilines like diethylaniline, dipropylaniline, dibutylaniline etc. could possibly lead to the probable formation of newer and better dyes.

The above findings and ideas, therefore, encouraged the present investigator to undertake detailed studies on the syntheses, not only of dimethylaniline and diethylaniline but also of dipropylaniline and dibutylaniline. This thesis is concerned with the syntheses of dimethylaniline, diethylaniline, dipropylaniline and dibutylaniline from aniline and respective alcohols methanol or ethanol or n-propanol or n-butanol under pressure and in presence of different acid, as catalysts. The progress of the reactions have been studied in detail under various experimental conditions and the results are reported in this thesis.

The thesis has been divided into six separate parts. Part I deals in general, introduction, literature survey, scope of the work, experimental procedures and analyses of the products. Part II, III, IV and V contain respectively studies on the syntheses of dimethylaniline, diethylaniline, dipropylaniline and dibutylaniline. The thesis concludes in Part VI with a summary of the entire investigations and a probable explication on the variation in the yields of different N,N'-dialkylaniline and corresponding N-alkylaniline, in changing over from the use of the lower alcohol, methanol to the higher alcohol, n-butanol.