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Thermal Studies of Cetyltrimethyl Ammonium Tribromide for Application to Solvent-Free Brominations

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ABSTRACT

Cetyltrimethylammonium tribromide (CTMATB) has been a reagent of choice for various organic transformations, especially in the synthesis of bromoorganic compounds. The main importance of the reagent is that it acts as an alternative to the hazardous reagent bromine (Br_2). In order to assess the efficiency of the reagent as a brominating agent under solvent-free conditions at elevated temperature, the thermal properties of the reagent have been studied. The reagent was found to be quite stable even at higher temperature and therefore, considering the detrimental effects of organic solvents, an environmentally benign solvent-free method of bromination of organic compounds was developed using a hot-air oven.

Keywords: cetyltrimethylammonium tribromide (CTMATB), thermal analysis, brominations, solvent-free, environmentally benign
