

Chemical synthesis and characterization of N-hydroxy-N-methyl fattyamide from palm oil.

ABSTRACT

In this study, N-hydroxy-N-methyl fattyamide (HMFA) has been synthesized by refluxing of palm oil and N, methyl hydroxylamine. The products were characterized using the complex formation test of hydroxamic acid group with copper(II), various technique methods including nuclear magnetic resonance (¹H NMR) spectroscopy, Fourier transform infrared (FTIR) spectroscopy and elemental analysis. Parameters that may affect the conversion of palm oil to HMFA including the effect of reaction time, effect of organic solvent and effect of, M, methyl hydroxylamine /oil molar ratio were also investigated in this study. Results of characterization indicate that HMFA was successfully produced from palm oil. The conversion percentage of palm oil into N-hydroxy-N-methyl Fattyamide was around 79. Results also showed that hexane is the best organic solvent to produce the HMFA. The optimum reaction time to achieve the maximum conversion percentage of the palm oil into HMFA was found to be 16 hours, and the optimum molar ration of M, methyl hydroxylamine/oil was found to be 6.5:1.0.

Keyword: N-hydroxy-N-methyl Fattyamide; N,methyl hydroxylamine; Palm oil; Reflux.