

ABSTRAK

Terpentin Indonesia mengandung 65-85% α -pinene, 1% camphene, 1-3% β -pinene, 10-18% 3-carene dan 1-3% limonene. Untuk meningkatkan nilai jual, *alpha pinene* dapat diolah lebih lanjut menjadi senyawa turunannya seperti *alpha terpineol* dan *alpha terpinyl acetate*. Keduanya merupakan senyawa turunan berharga yang digunakan di industri parfum dan industri farmasi. Hidrasi merupakan reaksi antara *alpha pinene* dengan air menghasilkan senyawa *alpha terpineol*. Asetilasi merupakan reaksi antara asam asetat dengan *alpha pinene* yang dapat menghasilkan *alpha terpinyl acetate*. Penelitian ini mempelajari pengaruh kadar larutan asam asetat terhadap distribusi produk dan selektivitas *alpha terpineol* serta *alpha terpinyl acetate*. Peubah kadar larutan asam asetat yang dipelajari pada 75, 80, 85 dan 90%. Selektivitas produk *alpha terpineol* dan *alpha terpinyl acetate* menurun seiring dengan meningkatnya kadar larutan asam asetat. Selektivitas *alpha terpineol* dan *alpha terpinyl acetate* juga menurun seiring dengan bertambahnya waktu reaksi. Peubah suhu dipelajari pada suhu 60, 70, 80 dan 90°C. Konversi *alpha pinene* semakin besar seiring dengan naiknya suhu reaksi. Dengan asumsi reaksi *reversible*, hubungan suhu terhadap masing-masing konstanta laju reaksi ditentukan sesuai dengan persamaan *Arrhenius*.

Kata kunci : Hidrasi, Asetilasi, *Alpha Pinene*

ABSTRACT

Indonesia turpentine contain 65-85% *α pinene*, *camphene* 1%, 1-3% *β pinene*, *3-carene* 10-18% and 1-3% *limonene*. To increase the sale value, *alpha pinene* can be further processed into compound derivatives such as *alpha terpineol* and *alpha terpinyl acetate*. Both are valuable derivative compounds used in the perfume industry and the pharmaceutical industry. Hydration is the reaction between *alpha pinene* with water to produce compound *alpha terpineol*. Acetylation is a reaction between acetic acid with *alpha pinene* that can produce *alpha terpinyl acetate*. This research studied the effect of the levels of acetic acid solution for product distribution and selectivity *alpha terpineol* and *alpha terpinyl acetate*. Variable levels of acetic acid solution were studied at 75, 80, 85 and 90%. Product selectivity *alpha terpineol* and *alpha terpinyl acetate* also decreased with increasing reaction time. Variables studied temperature at 60, 70, 80 and 90°C. conversion *alpha pinene* is getting larger as the reaction temperature increases. Assuming a reversible reaction, the temperature relationship of each reaction rate constants determined in accordance with the *Arrhenius* equation.

Keywords : Hydration, Acetoxylation, Alpha pinene