

## ABSTRACT

### DEHYDRATION OF TERTIARY ALCOHOL

The factors that affect the product distribution in the dehydration step in the California Red Scale (CRS) pheromone synthesis were investigated. The tertiary alcohol, (3S,6RS)-6-(1-Hydroxy-1-methylethyl)-3-methyl-9-decen-1-yl 2,2-dimethylpropanoate, was dehydrated under variety of conditions. It was found that the product distribution in the alkene mixture was relatively unaffected by temperature, solvent, and sulfonate leaving group. However, using Martin's sulfurane  $\{\text{Ph}_2\text{S}[\text{OC}(\text{CF}_3)_2\text{Ph}]_2\}$  as a dehydrating agent dramatically changed the Hofmann-Zaitsev product ratio (96%:4%) in the product mixture. Analysis of product ratios was accomplished by GC-MS and NMR.

Panaela Mejloumian  
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