

ANALYTICAL PROBLEMS IN CONTROL THE COURSE OF UNSATURATED
FATTY ACIDS ESTERS METATHESIS REACTION

Z. KLUKOWSKA-MAJEWSKA, B. KOSMACINSKA, W. WALISIEWICZ -
NIEDBALSKA

Industrial Chemistry Research Institute, 01-793 Warszawa,
Poland

ABSTRACT

Identification of the constituents of the product obtained in metathesis reaction of unsaturated fatty acids esters was realized. A presence of the components attesting to a participation of geometrical and positional isomerization of the reagents during metathesis was determined.

INTRODUCTION

A mixture obtained after metathesis reaction of esters of unsaturated fatty acids, and especially these containing more than one unsaturated bond in a carbon chain contains:

- unsaturated hydrocarbons with different length of carbon chain and symmetrically or unsymmetrically placed double bonds
- long chain-like diesters containing one or more unsaturated bonds
- unsaturated monocarboxylic esters
- unsaturated cyclic compounds

EXPERIMENTAL

A qualitative identification of the components of a mixture obtained after a metathesis reactions of methyl linoleate and methyl erucate with the use of a homogeneous catalyst was realized by GC/MS method.

A quantitative composition was determined by gas chromatography method. A total content of trans isomers was determined by IR method.

RESULTS AND SUMMARY

The total contents of trans isomers determined by two methods - GLC and IR were compared.

A presence of methyl erucate, monocarboxylic and dicarboxylic acids with odd number of carbon atoms in a product of metathesis reaction attests to a migration of double bonds during a metathesis.