Hexanediol-1,4 (I); (A, when R = CH_3, X = Y = H
5-Bromohexanediol-1,4 (II); (A, when R = CH_3, X = Br, Y = H)
3,5-Dibromohexanediol-1,4 (III); (A, when R = CH_3, X=Y=Br)
Heptanediol-1,4 (IV); (A, when R = C_2H_5, X = Y = H)
3,5-Dichloroheptanediol-1,4 (V); (A, when R = C_2H_5, X=Y=Cl)
3,5-Dibromoheptanediol-1,4 (VI); (A, when R=C_2H_5, X=Y=Br)

The first stage of syntheses of the above mentioned glycols I—IV consisted in treating furfural with methylmagnesium iodide or ethylmagnesium bromide. As the result of this reaction, the appropriate alkyl(2-furyl)carbinols were formed. These alcohols subjected to the action of mineral acid in ethanol were transformed into ethyl ester of 3-ketopentanecarboxylic-1 acid, or ethyl ester of 3-ketohexanecarboxylic-1 acid. The first of these compounds, under the effect of reducing agents, gave hexanediol-1,4 (I), whereas the second ones — heptanediol-1,4 (IV). Under the effect of bromine or chloride both the esters gave the appropriate halogen derivatives, which as the result of the reduction were transformed into halogen diols II, III, V or VI. On the base of diols I/VI and tolylene-2,4-diisocyanate(2,4-TDI) or the mixture of 2,4-TDI and 2,6-TDI at weight ratio 4 : 1, not reported in literature polyurethane resins were obtained and subjected to the total derivatographic analysis. First of all thermal resistance of resins obtained from diols I and IV and appropriate TDI isomers was examined and compared with thermostability of polyurethanes obtained on the base of diols II, III, V and VI and the same diisocyanates.

The obtained results showed that resins, for the synthesis of which glycols II, III, V and VI were used, have higher thermal resistance than resins obtained on the base of diols I and II. Moreover the resins of the first type revealed the advantageous features of self-extinguishing.

On the base of the carried out investigations it has been established that halogen diols II, III, V and VI may find their application for the synthesis of self-extinguishing and slow-burning polyurethane materials.

LE I 6

SOME STRUCTURAL PECULIARITIES AND PROPERTIES OF ALUMINIUM HALIDE COMPLEXES WITH CARBONYL COMPOUNDS OF BENZENE, THIOPHENE, AND FURAN SERIES

L. Belen'skii

Institute of Organic Chemistry, Academy of Sciences,
Leninskii Prospekt 47, 117013 Moscow, USSR

LE I 7

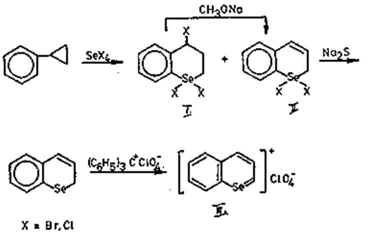
REACTIONS OF PHENYLCYCLOPROPANE WITH TETRAHALIDES OF SELENIUM

J. V. Mihalina[a]*, S. V. Galla[a], P. Kristián[b]

[a]Department of Chemistry, Uzhgorod State University, Užhorod, USSR

[b]Department of Organic Chemistry, P. J. Šafarik University, Košice, Czechoslovakia.

The reaction of phenylcyclopropane with the tetrahalides of selenium was investigated. It appeared that the 1,1,4-trihalogen derivatives of 1-selenochromane (I) and 1,1-dihalogen derivatives of 1-selenochrom-3-ene (II) could be obtained by heating an etheric solution of the above substances. It means that the cyclopropane ring splits and subsequently a cyclization takes place to give the benzene ring



Scheme 1

The structure of the compounds thus obtained was proved by n.m.r. spectra and by conversion of the 1,1-dihalogen 1-selenochrom-3-ene in the 1-selenochromylium perchlorate (III) described in literature (scheme 1).

The antimicrobial activity of the 1,1,4-trihalogen derivatives of 1-selenochromane and 1,1-dihalogen derivatives of 1-selenochrom-3-ene was investigated. It was revealed that these compounds exhibit antibacterial and anti-yeast activity.

LE I 8

SUBSTITUENT EFFECTS ON THE DISPOSITION OF THIIRANE 1,1-DIOXIDES AND THIIRENE 1,1-DIOXIDES IN KOH-t-BuOH.

Cal Y. Meyers*, Walter S. Matthews, Gregory J. McCollum,

Lawrence L. Ho, and Duy Huu Hua,

Department of Chemistry, Southern Illinois University, Carbondale, Illinois 62901, USA

Treatment of sulfones with KOH-CCl_4-t-BuOH provides thiirane 1,1-dioxide and thiirene 1,1-dioxide intermediates which decompose rapidly and specifically into products whose nature is dependent on the substitution pattern of these intermediates. Some examples are: