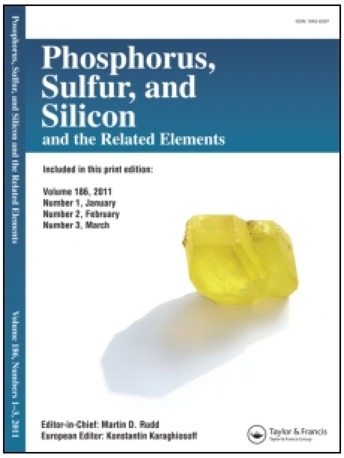

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# CYCLIZATION OF ISOMERIC BUTENYL PHENYL SULFIDES ON CHROMIC CATALYSTS

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# CYCLIZATION OF ISOMERIC BUTENYL PHENYL SULFIDES ON CHROMIC CATALYSTS

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It is established that isometric butenyl phenyl sulfides on chromic catalysts yield mainly direct cyclization products unlike their reactions on heterogenous acidic catalysts previously investigated in our laboratory. In the presence of such catalysts the formation of cyclic comcounds proceeds in different ways depending on the position of the side-chain double bond. In case chromic catalysts are used the mentioned factor affects only the easiness of cyclization, but not the nature of the process as such.

The reactions of the I-methyl allyl phenyl sulfide are of special interest as according to obtainable data its cyclization is impossible due to its easy (at I40°C) rearrangement into crotyl phenyl sulfide.

It is established in this work that the I-methyl allyl phenyl sulfide is transformed into crotyl phenyl sulfide in the static system (237°C, quinoline) but is stable enough in the flow reactor. In the last case its isomerization into crotyl phenyl sulfide amounts to cca. 3% at 250°C, cca. 8% at 350°C. That is why it has become possible to carry out the cyclization of I-methyl allyl phenyl sulfide on chromic catalysts.

Along with the cyclization butenyl phenyl sulfides undergo the migration of the side-chain double bond and fragmentation of side chain as well as splitting of C-S bond. Migration of the alkyl substituent and dehydrogenation are common for

cyclic products. The most selective cyclization of the butenyl phenyl sulfides is obtained on $Cr_2S_3/C$.
Possible ways of formation of cyclic compounds and a general scheme of transformations of isomeric butenyl phenyl sulfides are discussed. For instance it is suggested that a series of reactions may proceed with polymeric products on any catalyst.