

stereochemical viewpoint.* However, there is, in theory, a third pathway - isomerization of tetramethylethylene, particularly to methylisopropylethylene (2,3-dimethyl-1-butene)

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with subsequent polymerization of the latter, apparently proceeding without steric hindrance (judging from the results of previous work /1/).

We carried out experiments to clarify whether, during thermal polymerization there is any increase in the isomer content of the starting tetramethylethylene. Considering the large difference in the refractive indices of the isomers (.....) one should expect that in the first stages of heating tetramethylethylene the index of refraction should decline somewhat, as a consequence of methylisopropylethylene formation. This hypothesis was not confirmed.

Experiments on the polymerization of methylisopropylethylene under these conditions showed that this substance polymerizes significantly faster than tetramethylethylene. After three hours we obtained more than 20% of polymer, from which, however, the dimer was virtually absent. Tetramethylethylene was not observed among the reaction products.

The results of these experiments constitute evidence opposing the hypotheses that the polymerization of tetramethylethylene proceeds by preliminary isomerization into methylisopropylethylene.

*Evidently, the reaction according to equation (1) proceeds by a radical mechanism. In principle this dimer is capable of subsequent cyclization (see below).