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STUDIES OF MECHANISM OF 2-METHYLTHIOPHENE AND THIOPHENE FORMATION FROM N-PENTANE AND HYDROGEN SULPHIDE USING ^{14}C

M. A. Ryaschentseva^a; Kh. M. Minachev^a; G. V. Isagulyants^a; A. A. Greish^a; E. P. Belanova^a; L. I. Kovalenko^a; N. D. Zelinsky^a

^a Institute of Organic Chemistry of the USSR Academy of Sciences, Moscow, USSR

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STUDIES OF MECHANISM OF 2-METHYLTHIOPHENE AND THIOPHENE FORMATION FROM n-PENTANE AND HYDROGEN SULPHIDE USING ^{14}C

M.A.Ryaschentseva, Kh.M.Minachev, G.V.Isagulyants, A.A.Greish,
E.P.Belanova, L.I.Kovalenko.

N.D.Zelinsky Institute of Organic Chemistry of the USSR Academy
of Sciences, Moscow, USSR.

The mechanism of 2-methylthiophene formation from n-pentane and hydrogen sulphide over Cr-containing oxide catalyst is studied by using the Kinetic-Isotope method. The experiments were carried out in pulse system in He as a carrier gas (535° and 3 atm.) using ^{14}C -labelled pentene and n-pentane. The reaction products were analyzed by radiochromatography. It is shown the 2-methylthiophene formation from n-pentane and hydrogen sulphide proceeds largely via consecutive dehydrogenation of n-pentane to pentenes, pentadiene followed by interaction with hydrogen sulphide. Thiophene is largely as a result of C_4 -hydrocarbon interaction with hydrogen sulphide. A general scheme of the mechanism of 2-methylthiophene and thiophene formation is suggested.

