Liquid-Phase Oxidation of Isopropyl-*meta*-Xylene to Tertiary Hydroperoxide

A. S. Frolov, E. A. Kurganova, and G. N. Koshel'

Yaroslavl State Technical University, Moskovskii pr. 86, Yaroslavl, 150023 Russia
e-mail: koshelgn@ystu.ru

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Abstract—Fundamental aspects and the mechanism of the reaction of liquid-phase oxidation of isopropyl-*meta*-xylene to a tertiary hydroperoxide by atmospheric oxygen, initiated by isopropylbenzene hydroperoxide or catalyzed by *N*-hydroxyphthalimide were studied. It was found that using *N*-hydroxyphthalimide in the course of oxidation of isopropyl-*meta*-xylene makes it possible to raise, compared with the initiator (isopropylbenzene hydroperoxide), the oxidation rate and the conversion of the hydrocarbon by a factor of 2–2.5 at a 90–95% formation selectivity of a tertiary hydroperoxide of isopropyl-*meta*-xylene up to a conversion of 20–25%.

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