Special Features of Gas Chromatography Determination of Dibenzyl Ether Hydroperoxide Impurity in Benzyl Alcohol

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Abstract—Chromato–mass spectrometric analysis of a benzyl alcohol sample has revealed the presence of dibenzyl ether hydroperoxide $C_6H_5CH(OOH)OCH_2C_6H_5$ impurity showing the retention index 1894±10 on a standard stationary phase (RTX-5). A special feature of this hydroperoxide is its stability under conditions of gas chromatography separation (retention temperature 190°C). This has been confirmed by the measurement of the analytical signal between the chromatographic peaks of the hydroperoxide and the major product of its decomposition (benzyl benzoate). From this criterion, dibenzyl ether hydroperoxide is more stable that, for instance, monomethyl phthalate.

Keywords: dibenzyl ether hydroperoxide, chromato–mass spectrometric identification, gas chromatography separation, thermal stability

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