

## **Characterization of epoxidized natural rubber by 2D NMR spectroscopy**

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**Abstract:** Assignment of signals in aliphatic region of H-1 NMR spectrum for epoxidized natural rubber was carried out through NMR spectroscopy. The epoxidized natural rubber was prepared by epoxidation of purified natural rubber with peracetic acid in latex stage followed by degradation with propanal and ammonium persulfate. The resulting liquid epoxidized natural rubber was characterized through ID- and 2D-NMR spectroscopy. The unknown signals in the aliphatic region of the H-1 NMR spectrum were assigned through C-13 NMR and two-dimensional heteronuclear shift correlation (HETCOR) measurement. The assignments were proved by two-dimensional inverse detected heteronuclear long-range shift correlation (HMBC) and two-dimensional homonuclear shift correlation (COSY) measurements, and they were supported with epoxidized squalene as a model compound through NMR spectroscopy. (c) 2007 Elsevier Ltd. All rights reserved.

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