Mass Spectra of Diastereomeric 2,4-Disubstituted 1,3-Dioxa-2-silacyclohexanes

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Abstract—The mass spectra of diastereomeric 2,4-disubstituted 1,3-dioxa-2-silacyclohexanes are studied using a gas chromatograph–mass spectrometer–computer system. The stabilities of molecular ions and the intensity ratios of the peaks of fragment ions formed by the loss of substituents at silicon in the molecular ion are compared. The probabilities of specific fragmentation pathways depend on the orientation of substituents. A correlation is revealed between the retention times of stereoisomers in the chromatographic column and their structures. The results can be used for identification of compounds formed by condensation of diols with disubstituted silanes.