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Chirality impact on physical ageing: an original case of a small organic molecule

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Abstract:

The purpose of this paper is to investigate the structural relaxation of N-acetyl- α -methylbenzylamine (Nac-MBA), a chiral organic molecule, through the study of the glass transition temperature T_g and the well-known physical ageing, occurring at temperatures lower than T_g . The influence of the enantiomeric excess (ee) on the structural relaxation kinetics is highlighted through standard differential scanning calorimetry (DSC) and Fast Scanning Calorimetry (FSC) investigations. This original work evidences that even if the enthalpy loss to reach equilibrium remains globally the same whatever the ee, the structural relaxation kinetics are clearly slowed down when ee is increased.

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