

Method for making methyl acrylate-vinyl-D3 (D₂C=CD-CO₂CH₃) from methyl propiolate

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Technology Summary

Polyacrylates are a very important class of polymers with wide application in fields ranging from surface modification to textiles. It is well known that a slight variation in the structure of the monomer results in dramatic changes in the properties of the polymer. For example, poly(methyl methacrylate) and poly(methyl acrylate) show distinct chain mobilities as indicated by their glass transition temperatures. The invention is a convenient method for making a deuterated monomer from relatively inexpensive starting materials and deuterated precursors (D₂O and D₂). The monomer can be used to make other deuterated monomers (derivatives), as well as deuterated polymers and other macromolecules. The structure of such materials can be studied using neutron scattering techniques.

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