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Producing Phosphate-Polyols by Ring-Opening Hydrolysis of Wild Safflower Oil Epoxides

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Abstract: This workpresent the methodology for preparingepoxidized wild safflower oil (EWSO) using cation exchange resin as heterogeneous catalyst and its subsequent ring-opening hydrolysis in presence of phosphoric acid under varying experimental parameters.The influence of various reaction conditions such as type andrelative ratio of solvent, phosphoric acid dosing and water content on the ring-opening responsewasinvestigated.Thehydrolyzed products, WSO-phosphate polyolswereanalytically characterized for hydroxyl content, oxirane content, acid value and viscosity. The chemical confirmation of the synthesized polyolswas doneusing FTIR spectral analysis.The rate of degradation of oxirane ringsin acid hydrolysis of EWSO was moderately rapid in aqueous acid media, when *t*-butyl acetate used as solvent, with higher hydroxyl value of the derived polyols.
Keywords: Wild safflower oil,epoxidation, oxiranecontent, ring-opening, polyols.

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