

38d Polyethylene Glycol: a Benign Solvent for Fine Chemical Synthesis

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Liquid polyethylene glycol (PEG) is a new and exciting solvent for benign chemical synthesis. We have utilized the unique physiochemical properties of this solvent for a variety of chemical processing techniques, with a focus on homogeneous catalysis and separations. By combining PEG with extraction using supercritical CO₂ or gas-expanded liquids, we have been able to utilize the unique aspects of the solvent while developing techniques for facile recovery of products and recycle of homogeneous catalysts. Applications include the use of organometallic catalysts, enzymes, and high pressure phase behavior of PEG-CO₂-organic systems.