

Jordan University of Science and Technology

Synthesis of Cross-linked, Partially-neutralized Poly (Acrylic Acid) by Suspension Polymerization in Supercritical Carbon Dioxide

Authors: Yazan Ahed Hussain, Tao Liu, George W Roberts

Abstract: A novel process for producing superabsorbent polymer of cross-linked, partially neutralized poly (acrylic acid) via suspension polymerization in supercritical carbon dioxide was developed. The process utilized siloxane-based surfactants as suspension stabilizers to produce particles with acceptable size range for commercial applications. The behavior of the suspension mixture and its relation to the final product morphology is discussed. The product performance in terms of water absorbency is presented.