Block polymers combine synthetic versatility (e.g., tailored salt selectivity and water permeability) with processability to prepare state of the art water purification membranes in hollow fiber, sheet, and fibrous formats. Poly(arylene ether sulfones) (PSFs) are important engineering thermoplastics with excellent resistance to chlorinated disinfectants, hydrolysis and oxidation, as well as good mechanical properties, thermal stability and toughness. However, because of their hydrophobic nature, there is a growing focus on modification methods to improve the performance of PSFs for water desalination membranes. Poly(allyl glycidyl ether) (PAGE) is a hydrophilic polymer that can be functionalized for various purposes (e.g., nonfouling) due to its inherent chemical flexibility stemming from the pendant allyl groups. Therefore, this work presents a synthetic protocol to prepare multiblock copolymers that incorporate PSFs and functional, hydrophilic PAGE segments. The membrane characteristics, thermomechanical properties, and water purification performance will be investigated.