

**Influence of hydrophobe content and salt concentration on dilute solution behaviour of hydrophobically modified ionic polymers from diallylammonium salts/sulfur dioxide cyclocopolymerization: Light scattering and fluorescence spectroscopy**

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**ABSTRACT**

Novel hydrophobically modified polyelectrolytes were synthesized using the cyclocopolymerization of sulfur dioxide, N,N-diallyl-N-carboethoxymethylammonium chloride and the hydrophobic monomer N,N-diallyl-N-octadecylammonium chloride. Aggregation of these polymers in aq. solns. was characterized in the dil. regime by static light scattering and fluorescence spectroscopy as a function of hydrophobe content and NaCl concn. Copolymers were obsd. to assoc. at very low concns. (0.005 wt%). The copolymer is capable of assocg. at this very low polymer concn. because of the extended length of the hydrophobic monomer (C18) that can reach far enough from the backbone to avoid electrostatic repulsion. Aggregation of the polymers increased with increasing hydrophobe content. Upon addn. of salt, the apparent mol. wt. of polymer aggregates decreased as a result of neutralization of the charges. At high salt concns., the size of the polymer aggregates was obsd. to increase again as a result of increased polarity of the solvent that resulted in more hydrophobic assocn.