

micellar solutions. At low surfactant concentrations relative quantum yields were independent of surfactant concentration. At concentrations above the CMC, quantum yields decreased drastically and approached constant values between 3% and 30% of that in surfactant-free water (depending on the tenside). This effect is due to protection of acridine from the bulk water, which was found to be more efficient for voluminous micelles. The results permit conclusions to be made on water penetration into micelles and on the solubilization of acridine molecules in micellar solutions.

Thermal and photochemical stabilization of styrene-butadiene polymers

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Synthetic polymers based on styrene-butadiene are widely used in a range of industrial applications. Such polymers are very susceptible to oxidation during production and storage, which leads to considerable polymer cross-linking and loss of physical properties. Analytical studies showed that the oxidative processes involve the unsaturated structural units of the butadiene component and that the autocatalytic thermal and photochemical oxidative mechanisms are basically identical. These involve the initial formation of unsaturated hydroperoxides in the polymer which are thermally and photochemically unstable, producing reactive alkoxy radicals which lead to polymer cross-linking by reactions involving peroxy groups and unsaturated aldehydes and ketones. Polymer cross-linking due to the thermal and/or photochemical attack can be prevented by addition of polymer stabilizers based on alkylaryl-*p*-phenylenediamines which are superior to traditional stabilizers based on phosphites, phenols or polymerized methyl quinolines.

Excitation-energy-dependent rate of internal conversion in cyanine and triphenylmethane dyes

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The radiationless relaxation from the first excited singlet state S_1 to the ground state S_0 is known to be very fast in cyanine and triphenylmethane dyes. The mechanism behind the fast relaxation in these compounds is believed to be