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concentrations of additives, the path length of the sample, and the wavelength sensitivity (activation spectrum) of the polymer toward the degradation being modeled. Experimental verification of the model was made for polystyrene yellowing. The activation spectrum of polystyrene was determined by exposing unstabilized samples to xenon arc radiation in an accelerated weathering device. The samples were placed behind Schott glass filters (cutoff filter technique). A new treatment of the data yields a source-independent activation spectrum. This activation spectrum was used to predict yellowing in stabilized samples. Comparison of predicted and experimental yellowing rates for polystyrene demonstrates a good correlation. The correlation holds over six different UV stabilizers, three different concentrations, and two light sources.

379.

CHARACTERIZATION OF CONVERSION PRODUCTS FORMED DURING THE DEGRADATION OF PROCESSING ANTIOXIDANTS. J. Scheirs, J. Pospisil, M.J. O'Connor and S. W. Bigger, Kemcor Australia, 228-238 Normanby Road, South Melbourne, 3205, Australia.

The routine quantification of Irganox 1076 in polyethylene containing both Irganox 1076 and Irgafos 168 is complicated by the conversion product of Irgafos 168 (a phosphate) co-eluting with the Irganox 1076 peak. The formation of the phosphate triester has been studied by gas chromatography/mass spectrometry and structural assignments are postulated. A change in crystalline morphology of Irganox 1076 as a result of thermal oxidation has been observed and various dimeric oxidation products produced during ageing of Irganox 1076 have been characterized.

380. RADIOLYTIC DEGRADATION AND STABILITY OF POLYCARBONATE. E. S. Araújo and S. M. L. Guedes, IPEN-CNEN/SP, Cx.P. 11049, 05499-970, São Paulo, Brazil.

Polycarbonates (PC) are amorphous polymers employed in medical applications that are sterilized by gamma radiation. The national commercial polycarbonate, DUROLON, when subjected to  $\gamma$ -radiation in air at room temperature occur scissions in main chain without crosslinking. These scissions produce degradation with discoloration of polymeric material. The spectroscopy analysis FTIR and NMR(<sup>1</sup>H) shown the occurrence of scissions in main chain in carbonyl groups and recombination of fenoxo-fenyl polymeric radicals. The value G (scissions) was determined by viscosity methods. The best radiolytic stability of DUROLON was obtained with a mixture of two additives: one is a quencher and another is a radical scavenger, with 1% of weight. The radiostabilizing mixture presented synergistic effect with protection coefficient and energy capture factor of 92.7% and 92.93, respectively, when DUROLON is irradiated with a dose of 30 kGy. The degradation degree (value G) decreases of 16.67 to 0.42.

381. BLOCK COPOLYMERS : SYNTHESIS, COLLOIDAL PROPERTIES AND APPLICATION POSSIBILITIES. RIESS Gérard, Ecole Nationale Supérieure de Chimie de Mulhouse, 3 rue A. Werner, 68200 Mulhouse (France)

Block copolymers have unique properties in solution and in the solid state as a consequence of their molecular architecture. Our recent studies concerning block copolymers synthesis, colloidal and solid state properties is reviewed by considering the following points :

- the synthesis by anionic polymerization of functionalized and fluorescent labeled block copolymers
- the characteristics of block copolymers in solution and in micellar systems (CMC, micelle size, formation of interpolymer complexe micelles, etc...)
- the surface activity and the emulsion stabilization
- the application possibilities of block copolymers in emulsion polymerization (hairy latex, polymer particle with microvoids...)
- the mesomorphic structures of functionalized block copolymers and of interpolymer complexes formed between block copolymers and a homopolymer based on poly(vinylpyridine) and poly(acrylic acid).

382. ELECTROAC... Chemistry and GA 30314.

Poly[ $\alpha$ -methoxyocta] copolymers have been the oligoxyethylene vinylpyridine block an electronic con methoxyocta(oxyethyl coupling and anionic electronic conduction block copolymers. Do copolymers will be dis

383. Graft Copo... E. E. Maury DeSimone\*, University of

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384. AN OLEFI... SYNTHES... Steve J. McLain, Development, Ex

The cross (Rf = C<sub>4</sub>F<sub>9</sub>, C<sub>10</sub>F<sub>17</sub>) cross metathesis Rf(CH<sub>2</sub>)<sub>6</sub>CH=C ended polyethyl fluorinated poly water and hexac highly fluorinate dependent upon their relatively lo PTFE.

385. RAND... AND... S. Nar... Massa

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