

Synthesis of Polyamides and Polyesters from
Active Diacyl Derivatives

Tae Suk Jang, Sung Il Hong

Dept. of Textile Eng., Seoul Nat. Univ.

New active dithioester derivatives from 2-mercapto-benzothiazole and 2-mercaptobenzoxazole were prepared for use in polyamide and polyester synthesis. Solution polycondensation of the new dithioesters, 2,2'-(isophthaloyl-dithio)bisbenzothiazole, S,S'-bis(2-benzoxazolyl)dithioisophthalate, N,N'-isophthaloylbis(benzoxazoline-2-thione), with diamines and diols in aprotic solvents took place at relatively low temperature yielding polyamides and polyesters respectively with good yield. The effect of solvent, temperature, and catalyst was studied. The high reactivity of these active thioesters is discussed in relation to the electron-withdrawing effect on the leaving group and intramolecular general-base catalysis. The interfacial polycondensation in a chloroform-water system was also successful for polyamide and polyester formation. Prior to polymer synthesis, the aminolysis and alcoholysis of active monothioesters was carried out as a model compound study.