Durability of HALS-stabilized polyethylene film in a greenhouse environment. Khan, Javaid H.; Hamid, S. Halim. Res. Inst., King Fahd Univ. of Petroleum and Minerals, Dhahran, Saudi Arabia. Polymer Degradation and Stability (1995), 48(1), 137-42. Publisher: Elsevier, CODEN: PDSTDW ISSN: 0141-3910. Journal written in English. CAN 123:10749 AN 1995:586141 CAPLUS

Abstract

Low-d. polyethylene-based greenhouse films have been monitored for outdoor weather effects by mounting the film on a model greenhouse and on aluminum exposure racks at Dhahran plastic exposure facility. The change in chem. properties was monitored by FTIR spectroscopy. The thermal properties were obsd. by DSC and the drop in percent elongation and stress at break was monitored. It is concluded that greenhouse film mounted on the model greenhouse degraded more in comparison to the film on aluminum racks. The spectral emissions with wavelength between 7 and 14 μm are an important part of the energy losses from the soil and the plants inside a greenhouse. The partial prevention of the dissipation of this thermal energy from the greenhouse film during cool night hours creates a unique environment and influences the degrdn. reactions in the plastic film. Pesticides, mostly sulfur- and halogen-based compds., can also accelerate the degrdn. of the film.