

polymer degradation

Chemical changes in a polymeric material that usually result in undesirable changes in the in-use properties of the material.

Notes:

1. In most cases (*e.g.*, in vinyl polymers, polyamides) degradation is accompanied by a decrease in molar mass. In some cases (*e.g.*, in polymers with aromatic rings in the main chain), degradation means changes in chemical structure. It can also be accompanied by crosslinking.
2. Usually, degradation results in the loss of, or deterioration in, useful properties of the material. However, in the case of biodegradation (degradation by biological activity), polymers may change into environmentally acceptable substances with desirable properties.

Source:

PAC, 2004, 76, 889 (*Definitions of terms relating to reactions of polymers and to functional polymeric materials (IUPAC Recommendations 2003)*) on page 893