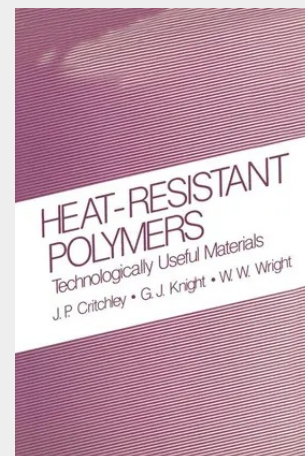


Heat-Resistant Polymers

Technologically Useful Materials

Definitions of what is meant by a heat-resistant polymer vary considerably. We have taken the term to mean a polymer which can be used, at least for short time periods, at temperatures from 150°C. The greatest problem which arises in writing a monograph on such materials is the tremendous amount of data that is available. More than 2000 references have been published on one heat-resistant polymer system alone over a period of little more than two years. The result is that a very high degree of selectivity must be exercised with respect to the information reproduced. We have chosen to restrict our coverage to polymers that have received at least some degree of commercial exploitation and to details of their methods of preparation, their thermal and thermo-oxidative stabilities and modes of degradation, and their properties at elevated temperatures. It must be emphasized that other properties not cited, e. g., hydrolytic and chemical stability, and resistance to ultraviolet radiation, may be equally important in particular uses of these materials. The "older" heat-resistant polymers, e. g., the thermosets and some of the fluorine-containing materials, are not dealt with in such depth as are the "newer" polymers with aromatic and/or heterocyclic rings in the chain. This is because books have been available for some time on the well-established commercial polymers and developments in them have not been as marked recently as in the aromatic and heterocyclic macromolecules.

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