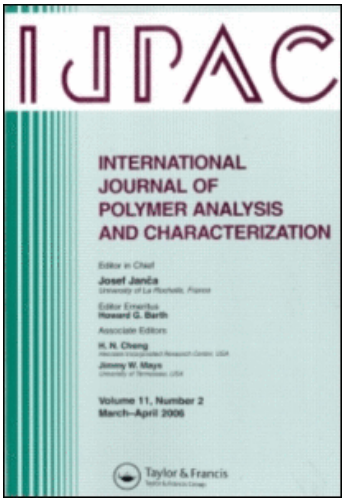

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A Review of: "Bryan Ellis and Ray Smith, eds. *Polymers: A Property Database*, 2nd ed."

Howard G. Barth Book Review Editor

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Book Review

Bryan Ellis and Ray Smith, eds. *Polymers: A Property Database*, 2nd ed. CRC Press/Taylor & Francis Group, LLC, Boca Raton, Florida, 2009, 1106 p., $636. ISBN: 9780849339400. Reviewed by Howard G. Barth, Book Review Editor, howardbarth@gmail.com

Those of us working with polymers or polymeric materials face the daunting task of sifting through reference books or searching the Internet for a specific polymer property, behavior, or characteristic. When being introduced to a polymer for the first time, we often need to get up to speed quickly concerning its commercial uses or its compatibility with other polymers; how many times do we need to know a structural formula? Most often we consult the *Polymer Handbook* (J. Brandrup, E. H. Immergut, and E. A. Grulke, eds.), although with much navigation. Except for a few other works, e.g., J. E. Mark's *Polymer Data Handbook* and the *Merck Index*, it's rather surprising that there are only a handful of polymer reference books available, considering the vast number of polymers. In view of the lack of adequate polymer handbooks, the work of Drs. Ellis and Smith is most welcome.

The number of possible polymers is staggering, especially when taking into account an (almost) unlimited molecular weight range, all feasible monomer sequence distributions along the chain, and different polymer configurations or architecture, including tailor-made polymers. These features lead to an infinite number of polymeric structures, especially if we include multicomponent polymeric materials of different chemical compositions. Nevertheless, only a finite number of polymers have been synthesized or formulated, such as polymer blends, reinforced-polymeric materials, and complex multicomponent systems typically used in printing industries, energy storage applications, and in electronic and optical devices.

Polymers: A Property Database is an 1100-page, double-column tome listing current, comprehensive summaries of all known chemical and physical properties. The layout of listed and tabulated data is presented in an easy-to-read style replete with useful tables of properties. Whenever applicable, a synopsis is given on synthetic approaches and

commercial applications. The *Polymers: A Property Database* is a combination of handbook, dictionary, and encyclopedic-style accounts of over 10^3 entries, approaching a fair percentage of all known commercial polymers.

As an example, under "*polypropylene*" we find listings of recommended antioxidants, methods of chemical identification, data on at least 40 different properties, current processing and manufacturing routes, commercial applications, and an extensive list of trade names. The "*polypropylene*" account is followed by no fewer than 20 entries on polypropylene copolymers, tacticity forms, blends, reinforced materials, and derivatives.

The volume contains a comprehensive index that allows for quick searches using alternative polymer names. To aid the reader, there is an introductory chapter briefly describing all possible polymer properties along with useful definitions. Concurrent with the publication of this volume, a companion online *Polymers: A Property Database* is available from CRC Press, at http://www.polymersdatabase.com, to facilitate searches and to maintain state-of-the-art updates.