

Material Selection for Thermoplastic Parts: Practical and Advanced Information (Plastics Design Library)

By Michel Biron



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As new applications are developed and plastics replace traditional materials in a widening spectrum of existing applications, the potential personal injury, property damage, financial and legal consequences of failure can be high. However, nearly half of plastics failure can be traced back to the original specification and selection of the material.

This book gives engineers the data they need to make an informed decision about the materials they use in their products, imparting a thorough knowledge of the advantages and disadvantages of the various materials to choose from. The data also suggests other candidate materials which the reader may not have originally considered. More than 30,000 thermoplastics grades are grouped into circa. 300 subfamilies, within which over 20 properties are assessed.

The abundance or scarcity of a material and its cost are also often important deciding factors. In this book, an economical overview of the plastics industry helps clarify the actual consumption and costs of thermoplastics including bioplastic, and the relationship of cost vs. performance is also examined for each thermoplastic subfamily. Immediate and long-term common properties are reviewed, including mechanical behavior, impact, thermal properties, and many more. Environmental considerations are also covered, including ease of recycling and sustainability.

- Helps engineers to implement a systematic approach to material selection in their work
- Includes more than 300 subfamilies of thermoplastic, and a wide range of properties including chemical resistance, thermal degradation, creep and UV resistance
- Evaluates cost/performance relations and environmental considerations

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Editorial Review

Review

"...provides an easy-to-understand and easy-to-use guide for a systematic approach for choosing plastic materials...It will certainly be a very useful reference for anyone who designs, specifies, or uses plastic components in any application." --IEEE Electrical Insulation Magazine, Material Selection for Thermoplastic Parts

About the Author

Michel Biron is a plastics consultant based in Les Ulis, France, and is a Graduate Chemist Engineer from the Institut National Supérieur de Chimie Industrielle

de Rouen and Polymer Specialist from the Institut Français du Caoutchouc. He has authored numerous technical papers and books on plastics.

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