PREFACE

This is the third electronic edition of the *CRC Handbook of Chemistry and Physics*. In terms of content, it follows the 81st Edition of the print *Handbook*, the first to be published in the new millennium, and contains several updated and expanded tables:

- Fundamental Physical Constants (the new set of CODATA recommended values, replacing the 1986 set)
- The Elements (descriptive texts on the occurrence, properties, history, and uses of all the chemical elements)
- Dissociation Constants of Organic Acids and Bases (expanded by 50%)
- Dipole Moments (revised and expanded)
- Threshold Limits for Airborne Contaminants (including the most recent recommendations)

Among the new topics covered in this edition are:

- Properties of Liquid Helium
- Electrical Conductivity of Water as a Function of Temperature and Pressure
- Bond Lengths in Organometallic Compounds
- Organic Magnets
- Pressure-Volume-Temperature Relationship for Polymer Melts
- Characteristics of Human Hearing

The Editor will appreciate suggestions on new topics for the *Handbook* and notification of any errors. Address all comments to Editor, *Handbook of Chemistry and Physics*, CRC Press, Inc., 2000 Corporate Blvd. N. W., Boca Raton, FL 33431. Comments may also be sent by electronic mail to drlide@post.harvard.edu.

David R. Lide
Editor-in-Chief
May 1, 2000

This Edition is Dedicated to my Wife, Bettijoyce Breen Lide

Note on the Ordering of Chemical Compounds: Most of the interactive tables are ordered alphabetically by the adopted name of the substance (usually an IUPAC systematic name). These tables can be sorted by molecular formula, common formula (for inorganic compounds), or CAS Registry Number if desired. The text (pdf) displays follow the order in the print version, which in most cases is by molecular formula in a modified Hill order. In the Hill convention the molecular formula is written with C first, H second, and then all

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other elements in alphabetical order of their chemical symbols. The sequence of entries is determined by the alphabetical order of elements in the molecular formula and the number of atoms of each element, in ascending order, e.g., C_3H_7Cl, C_3H_7N, C_3H_7NO, $C_3H_7NO_2$, etc. In tables that include non-carbon compounds, all of those are listed first, followed by a separate listing of compounds that do contain carbon. This is in contrast to the strict Hill convention as followed by Chemical Abstracts Service, where the molecular formulas beginning with A and B precede the formulas for carbon-containing compounds, while those beginning with D... Z follow.

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