

\*Tel.: +1 419 531 1322; fax: +1 419 530 8086.  
E-mail address: [gbennett@eng.utoledo.edu](mailto:gbennett@eng.utoledo.edu)

21 August 2007

Available online 30 August 2007

doi: 10.1016/j.jhazmat.2007.08.067

**Atmospheric Degradation of Organic Substances: Data for Persistence and Long-range Transport Potential, W. Klopfer, B.O. Wanger. WILEY-VCH Verlag GmbH & Co. KgaA Weinheim, Germany (2007). 256 pp., Price: US\$ 190.00, ISBN: 978-3-527-31606-9**

Since many commercially important bulk chemicals are volatile, their fate in the atmosphere most commonly is photochemical degradation. Most of the degradation is effected by solar radiation with a minor fraction occurring on soil or water.

This book has two relatively short chapters covering the first 105 pages entitled as follows:

- Significance of photo-degradation in environmental risk assessment.
- Abiotic degradation in the atmosphere.

In the second chapter, the authors detail the reactions that occur photochemically and in that chapter develop the mathematical equations that describe these reactions. Experimental methods for measuring reaction rate constants are described also. The chapter ends with an extensive list of references (240).

The third (and longest) section of the book is a Table of Reaction Rate Constants of Photo-Degradation Processes. Given in this table are the bimolecular reaction rate constants for the atmospheric reaction of chemical substances with reactive atmospheric species: hydroxyl radical, ozone, and nitrate radical. Data are given for 1081 chemicals accumulated from 536 cited references.

Gary F. Bennett\*

*Department of Chemical and Environmental Engineering,  
The University of Toledo, Mail Stop 305,  
Toledo, OH 43606-3390, United States*

\*Tel.: +1 419 531 1322; fax: +1 419 530 8086.  
E-mail address: [gbennett@eng.utoledo.edu](mailto:gbennett@eng.utoledo.edu)

22 August 2007

Available online 30 August 2007

doi: 10.1016/j.jhazmat.2007.08.068

**Mass Transfer and Separation Processes: Principles and Applications, D. Basmadjian (Ed.), second ed. CRC Press/Taylor & Francis Group, Boca Raton, FL (2007). 511 pp., Price: US\$ 89.95, ISBN: 978-1-4200-5159-9**

This book is a classical chemical engineering text designed for teaching a course on mass transfer and separation processes by emphasizing practical, real-world engineering design processes. Pertinent to this journal are the inclusion of numerous examples drawn from the environmental area. Among those examples are the following:

- Example problem dealing with the aeration of a wastewater treatment trench (aerated lagoon).
- Reactions in biofilters and biofilms.
- Design and performance of a biofilter.
- Reverse osmosis—principles, applications and process design.
- Discharge of a plant effluent into a river.
- Adsorption of a pollutant from groundwater onto soil.
- Solution to the effect of wind on the dispersion of continuous emissions.
- Net rate of global carbon dioxide emissions.
- DDT uptake by fish.
- Adsorption of pollutants on activated carbon.
- Pollutant release from groundwater onto soils.
- Streeter-Phelps oxygen sag curve in a polluted river.

Although the book is not designed to stand alone for an environmental course, it does contain a plethora of useful examples that could well be used in such a course. In that context, this book would be a very useful supplemental resource.

F. Bennett\*

*Department of Chemical and Environmental Engineering,  
The University of Toledo, Mail Stop 305,  
Toledo, OH 43606-3390,  
United States*

\*Tel.: +1 419 531 1322; fax: +1 419 530 8086.  
E-mail address: [gbennett@eng.utoledo.edu](mailto:gbennett@eng.utoledo.edu)

22 August 2007

Available online 30 August 2007

doi: 10.1016/j.jhazmat.2007.08.069