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C. REMOVAL FROM THE ATMOSPHERE: WET AND DRY DEPOSITIOND. TYPICAL AMBIENT CONCENTRATIONS AND AIR QUALITY STANDARDS; 1. Units of Concentrations and Conversions; 2. Criteria and Noncriteria Pollutants and Air Quality Standards; E. EFFECTS ON VISIBILITY AND MATERIALS; F. ECONOMICS; G. ATMOSPHERIC CHEMISTRY: RISK ASSESSMENTS AND PUBLIC POLICIES FOR AIR POLLUTION CONTROL; H. PROBLEMS; REFERENCES; Chapter 3. Spectroscopy and Photochemistry: Fundamentals; A. BASIC PRINCIPLES; 1. Molecular Energy Levels and Absorption and Emission Spectroscopy; 2. Fates of Electronically Excited Molecules
B. ABSORPTION OF LIGHT1. Basic Relationships; 2. The Beer - Lambert Law; C. ATMOSPHERIC PHOTOCHEMISTRY; 1. Solar Radiation and Its Transmission through the Atmosphere; 2. Calculating Photolysis Rates in the Atmosphere; 3. Procedure for Calculating Photolysis Rates; 4. Example: Photolysis of Acetaldehyde at the Earth's Surface; D. PROBLEMS; REFERENCES; Chapter 4. Photochemistry of Important Atmospheric Species; A. MOLECULAR OXYGEN; 1. Absorption Spectra; 2. Photochemistry; B. OZONE; 1. Absorption Spectra; 2. Photochemistry; C. NITROGEN DIOXIDE; 1. Absorption Spectra; 2. Photochemistry
D. NITRIC ACIDE. NITROUS ACID; F. PEROXYNITRIC ACID; G. NITRATE RADICAL; H. DINITROGEN PENTOXIDE; I. NITROUS OXIDE; J. ORGANIC NITRATES AND PEROXYACETYL NITRATE; 1. Organic Nitrates; 2. Peroxyacetyl Nitrate; K. SULFUR DIOXIDE AND SULFUR TRIOXIDE; 1. SO2; 2. SO3; L. HYDROGEN PEROXIDE AND ORGANIC HYDROPEROXIDES; M. ALDEHYDES AND KETONES; N. CHLORINE NITRATE (ClONO2) AND BROMINE NITRATE (BrONO2); O. HCl AND HBr; P. THE HALOGENS; Q. ClO, BrO, AND IO; R. ClOOCl; S. OClO; T. HOCl, HOBr, AND HOI; U. NITROSYL CHLORIDE (ClNO) AND NITRYL CHLORIDE (ClNO2); V. HALOGENATED METHANES AND ETHANES
W. PROBLEMS

Sommario/riassunto

Here is the most comprehensive and up-to-date treatment of one of the hottest areas of chemical research. The treatment of fundamental kinetics and photochemistry will be highly useful to chemistry students and their instructors at the graduate level, as well as postdoctoral fellows entering this new, exciting, and well-funded field with a Ph.D. in a related discipline (e.g., analytical, organic, or physical chemistry, chemical physics, etc.). Chemistry of the Upper and Lower Atmosphere provides postgraduate researchers and teachers with a uniquely detailed, comprehensive, and authorita