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By-Products; 3.1 Refinery Products; 3.1.1 Liquefied Petroleum Gas; 3.1.2 Naphtha, Gasoline, and Solvents; 3.1.3 Kerosene and Diesel Fuel 3.1.4 Fuel Oil 3.1.5 Lubricating Oil; 3.1.6 White Oil, Insulating Oil, and Insecticides; 3.1.7 Grease; 3.1.8 Wax; 3.1.9 Asphalt; 3.1.10 Coke; 3.2 Petrochemicals; 3.3 Refinery Chemicals; 3.3.1 Alkalies; 3.3.2 Acids; 3.3.3 Catalysts; References; Chapter 4 Refinery Wastes; 4.1 Process Wastes; 4.1.1 Desalting; 4.1.2 Distillation; 4.1.3 Visbreaking and Coking; 4.1.4 Fluid Catalytic Cracking; 4.1.5 Hydrocracking and Hydrotreating; 4.1.6 Alkylation and Polymerization; 4.1.7 Catalytic Reforming; 4.1.8 Isomerization; 4.1.9 Deasphalting and Dewaxing; 4.2 Entry into the Environment 4.2.1 Storage and Handling of Petroleum Products 4.2.2 Release into the Environment; 4.3 Toxicity; 4.3.1 Lower-Boiling Constituents; 4.3.2 Higher-Boiling Constituents; 4.3.3 Total Petroleum Hydrocarbons; 4.3.4 Wastewater; References; PART II ENVIRONMENTAL TECHNOLOGY AND ANALYSIS; Chapter 5 Environmental Regulations; 5.1 Environmental Impact of Refining; 5.1.1 Air Pollution; 5.1.2 Water Pollution; 5.1.3 Soil Pollution; 5.2 Environmental Regulations in the United States; 5.2.1 Clean Air Act; 5.2.2 Resource Conservation and Recovery Act; 5.2.3 Clean Water Act; 5.2.4 Safe Drinking Water Act 5.2.5 Comprehensive Environmental Response, Compensation, and Liability Act 5.2.6 Oil Pollution Act; 5.2.7 Occupational Safety and Health Act; 5.2.8 Toxic Substances Control Act; 5.2.9 Hazardous Materials Transportation Act; 5.3 Refinery Outlook; 5.3.1 Hazardous Waste Regulations; 5.3.2 Regulatory Background; 5.3.3 Requirements; 5.4 Management of Refinery Waste; References; Chapter 6 Sample Collection and Preparation; 6.1 Petroleum Chemicals; 6.2 Sample Collection and Preparation; 6.2.1 Sample Collection; 6.2.2 Extract Concentration; 6.2.3 Sample Cleanup; 6.3 Measurement; 6.4 Accuracy 6.5 Precision

Sommario/riassunto

A timely, hands-on guide to environmental issues and regulatory standards for the petroleum industry. Environmental analysis and testing methods are an integral part of any current and future refining activities. Today's petroleum refining industry must be prepared to meet a growing number of challenges, both environmental and regulatory. Environmental Analysis and Technology for the Refining Industry focuses on the analytical issues inherent in any environmental monitoring or cleanup program as they apply to today's petroleum industry, not only during the refining process, but al