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| Nota di contenuto       | Title page; Copyright page; Contents; Preface; Acknowledgments; 1: Introduction; Reference; 2: Directives for Contamination Control; PART I: Chemical Contamination; 3: Raw Materials; 3.1 Water; 3.2 Inorganic Impurities; 3.3 Organic Impurities; 3.3.1 By-products; 3.3.2 Genotoxic Impurities (GTIs); 3.3.3 Degradation Products; 3.4 Additives; 3.5 Residual Solvents; Concluding Remarks; References; 4: Medicinal Gases and Volatile Anesthetics; 4.1 Medicinal Gases; 4.2 Volatile Anesthetics; Concluding Remarks; References; 5: Diagnostic Imaging Agents; 5.1 Radiopharmaceuticals<br>5.1.1 Technetium-Based Products<br>5.1.2 Iodine-Based Products; 5.1.3 Fluorine-Based Products; 5.2 Contrast Agents; 5.2.1 Gadolinium-Based Products; 5.2.2 Iodine-Based Products; 5.2.3 Barium Sulfate; Concluding Remarks; References; 6: Containers; 6.1 Glass Containers; 6.2 Plastic Containers; 6.2.1 Polymer Formation; 6.2.2 PVC Containers; 6.2.3 Other Plastic Containers; 6.3 Metal Containers; Concluding Remarks; References; 7: Closures; Concluding Remarks; References; 8: Delivery Systems and Filters; 8.1 Delivery Systems Made of PVC; 8.2 |

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Concluding RemarksReferences; 9: Medical Devices; 9.1 General Use  
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11.2 Raw Materials11.3 Sterile Products; 11.3.1 Single- and Multiple-  
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11.5.1 Syringes; 11.5.2 Endoscopes; 11.5.3 Other Devices; 11.6  
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12.1.1 Radiolysis of Water; 12.1.2 Effect of Ionizing Radiation on Drug  
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12.1.4 Radiolysis of Selected Nondrug Components12.1.5 Effect of  
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12.3.2 Peracetic Acid and Hydrogen Peroxide; 12.3.3 Formaldehyde;  
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DNA and HCP Residuals; 13.2 Viruses and Mycoplasma; 13.3  
Endotoxin; 13.4 Protein Degradation; 13.5 Protein Aggregation;  
Concluding Remarks; References  
Appendix Polymeric Materials: Components, Additives, Extractables,  
and Degradation Products

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## Sommario/riassunto

The first one-volume guide to sources of contamination in pharmaceuticals and medical devices. Most books dealing with contaminants in medicinal products often focus on analytical methods for detecting nonspecific impurities. Key to the work of the pharmaceutical chemist, this unique reference helps identify the sources of contamination in medicinal and pharmaceutical products and medical devices. Divided into three parts, Sources of Contamination in Medicinal Products and Medical Devices covers chemical, microbiological, and physical (particulate matter) contamination, i

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