



HUMAN TOXICOLOGY OF CHEMICAL MIXTURES

**Toxic Consequences Beyond the Impact of
One-Component Product and Environmental Exposures**

HAROLD I. ZELIGER

SECOND EDITION

Contents

Preface to the Second Edition	ix
Preface to the First Edition	xi
List of Abbreviations	xiii
Part I Introduction to Chemical Toxicology of Mixtures	1
1 Introduction	3
2 Health Effects of Exposures to Chemical Mixtures	7
3 Absorption of Chemical Mixtures	15
4 Chemical Toxicology	21
Part II Exposures to Chemical Mixtures	43
5 Scope and Sources of Toxic Exposures	45
6 In Utero Exposure	49
7 Air Pollution	53
8 Water Pollution	65
9 Soil Pollution	97
10 Food	105
11 Chemicals In and Around the Home	129
12 Sick Building Syndrome	143
13 Industrial Exposure	159
14 Pesticides	173
15 Alcohol and Tobacco: Recreational Toxins	187
16 Electromagnetic Radiation and Toxic Exposure	205
Part III Mixture Effects on Body Systems	219
17 Respiratory System	221
18 Nervous System	251
19 Developmental Neurotoxicology	281
20 Autism: Effect of Maternal Exposure to Neurotoxic Chemicals	287
21 Attention Deficit Hyperactivity Disorder	299
22 Endocrine System	307
23 Toxic Infertility	323

24	Teratogens	341
25	Immune System	355
26	Chemical Sensitivity: Multiple Chemical Sensitivity (MCS), Chronic Fatigue Syndrome (CFS), Fibromyalgia (FM), Gulf War Syndrome	365
27	Skin	389
28	Musculoskeletal System	399
29	Cardiovascular System	405
30	Liver	417
31	Kidneys	427
32	Cancer	433
33	Cancer Clusters	467
34	Nanotoxicology	479
35	Children	487
36	Childhood Cancer	499
37	Toxicology of Global Warming	507
 Part IV Regulatory Requirements, Conclusions		521
38	Regulatory Requirements	523
39	Conclusions and Recommendations	531
 Index		537