



# Toxicological Profile for Lead

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U.S. Department of Health and Human Services  
Agency for Toxic Substances and Disease Registry

## **DISCLAIMER**

Use of trade names is for identification only and does not imply endorsement by the Agency for Toxic Substances and Disease Registry, the Public Health Service, or the U.S. Department of Health and Human Services.

## FOREWORD

This toxicological profile is prepared in accordance with guidelines\* developed by the Agency for Toxic Substances and Disease Registry (ATSDR) and the Environmental Protection Agency (EPA). The original guidelines were published in the *Federal Register* on April 17, 1987. Each profile will be revised and republished as necessary.

The ATSDR toxicological profile succinctly characterizes the toxicologic and adverse health effects information for these toxic substances described therein. Each peer-reviewed profile identifies and reviews the key literature that describes a substance's toxicologic properties. Other pertinent literature is also presented, but is described in less detail than the key studies. The profile is not intended to be an exhaustive document; however, more comprehensive sources of specialty information are referenced.

The focus of the profiles is on health and toxicologic information; therefore, each toxicological profile begins with a relevance to public health discussion which would allow a public health professional to make a real-time determination of whether the presence of a particular substance in the environment poses a potential threat to human health. The adequacy of information to determine a substance's health effects is described in a health effects summary. Data needs that are of significance to the protection of public health are identified by ATSDR.

Each profile includes the following:

- (A) The examination, summary, and interpretation of available toxicologic information and epidemiologic evaluations on a toxic substance to ascertain the levels of significant human exposure for the substance due to associated acute, intermediate, and chronic exposures;
- (B) A determination of whether adequate information on the health effects of each substance is available or in the process of development to determine levels of exposure that present a significant risk to human health of acute, intermediate, and chronic health effects; and
- (C) Where appropriate, identification of toxicologic testing needed to identify the types or levels of exposure that may present significant risk of adverse health effects in humans.

The principal audiences for the toxicological profiles are health professionals at the Federal, State, and local levels; interested private sector organizations and groups; and members of the public.

This profile reflects ATSDR's assessment of all relevant toxicologic testing and information that has been peer-reviewed. Staffs of the Centers for Disease Control and Prevention and other Federal scientists have also reviewed the profile. In addition, this profile has been peer-reviewed by a nongovernmental panel and was made available for public review. Final responsibility for the contents and views expressed in this toxicological profile resides with ATSDR.



Patrick N. Breysse, Ph.D., CIH  
Director, National Center for Environmental Health and  
Agency for Toxic Substances and Disease Registry  
Centers for Disease Control and Prevention

### \*Legislative Background

The toxicological profiles are developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA or Superfund). CERCLA section 104(i)(1) directs the Administrator of ATSDR to "...effectuate and implement the health related authorities" of the statute. This includes the preparation of toxicological profiles for hazardous substances most commonly found at facilities on the CERCLA National Priorities List (NPL) and that pose the most significant potential threat to human health, as determined by ATSDR and the EPA. Section 104(i)(3) of CERCLA, as amended, directs the Administrator of ATSDR to prepare a toxicological profile for each substance on the list. In addition, ATSDR has the authority to prepare toxicological profiles for substances not found at sites on the NPL, in an effort to "...establish and maintain inventory of literature, research, and studies on the health effects of toxic substances" under CERCLA Section 104(i)(1)(B), to respond to requests for consultation under section 104(i)(4), and as otherwise necessary to support the site-specific response actions conducted by ATSDR.

## VERSION HISTORY

| Date        | Description   |
|-------------|---|
| August 2020 | Final toxicological profile released                    |
| May 2019    | Draft for public comment toxicological profile released |
| August 2007 | Final toxicological profile released                    |
| April 1993  | Final toxicological profile released                    |

## CONTRIBUTORS & REVIEWERS

### CHEMICAL MANAGER TEAM

Henry Abadin, M.S.P.H. (Lead)  
Jessilynn Taylor, M.S., CDR USPHS  
Melanie Buser, M.P.H.  
Franco Scinicariello, M.D., M.P.H.  
Jennifer Przybyla, Ph.D.

Julie M. Klotzbach, Ph.D.  
Gary L. Diamond, Ph.D.  
Mario Citra, Ph.D.  
Lara L. Chappell, Ph.D.  
Laura A. McIlroy, B.A.

ATSDR, Division of Toxicology and Human Health  
Sciences, Atlanta, GA

SRC, Inc., North Syracuse, NY

### REVIEWERS

#### **Interagency Minimal Risk Level Workgroup:**

Includes ATSDR; National Center for Environmental Health (NCEH); National Institute for Occupational Safety and Health (NIOSH); U.S. Environmental Protection Agency (EPA); National Toxicology Program (NTP).

#### **Additional reviews for science and/or policy:**

ATSDR, Division of Community Health Investigations; ATSDR, Office of Science; NCEH, Division of Laboratory Science; NCEH, Division of Environmental Health Science and Practice; Occupational Safety and Health Administration (OSHA); Department of Defense (DoD); EPA; NIOSH.

### PEER REVIEWERS

1. Howard Hu, M.D., M.P.H., Sc.D., Department of Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, Michigan
2. Anthony Knafla, M.Sc., DABT, P. Biol., Founder/Senior Scientist & Manager, Equilibrium Environmental Inc., Calgary, Canada
3. Nelly Mañay, Ph.D., Professor, Department of Toxicology and Environmental Hygiene, Faculty of Chemistry, University of the Republic of Uruguay, Montevideo, Uruguay

These experts collectively have knowledge of toxicology, chemistry, and/or health effects. All reviewers were selected in conformity with Section 104(I)(13) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended.

ATSDR scientists review peer reviewers' comments and determine whether changes will be made to the profile based on comments. The peer reviewers' comments and responses to these comments are part of the administrative record for this compound.

The listing of peer reviewers should not be understood to imply their approval of the profile's final content. The responsibility for the content of this profile lies with ATSDR.

## CONTENTS

|  |     |
|--|-----|
| DISCLAIMER .....   | ii  |
| FOREWORD .....   | iii |
| VERSION HISTORY .....  | v   |
| CONTRIBUTORS & REVIEWERS .....   | vi  |
| CONTENTS .....   | vii |
| LIST OF FIGURES .....  | x   |
| LIST OF TABLES .....   | xi  |
| CHAPTER 1. RELEVANCE TO PUBLIC HEALTH .....  | 1   |
| 1.1 OVERVIEW AND U.S. EXPOSURES .....  | 1   |
| 1.2 SUMMARY OF HEALTH EFFECTS .....  | 3   |
| 1.3 MINIMAL RISK LEVELS (MRLs) .....   | 9   |
| CHAPTER 2. HEALTH EFFECTS .....  | 10  |
| 2.1 INTRODUCTION .....   | 10  |
| 2.2 ACUTE LEAD TOXICITY .....  | 18  |
| 2.3 DEATH .....  | 19  |
| 2.4 BODY WEIGHT .....  | 28  |
| 2.5 RESPIRATORY .....  | 33  |
| 2.6 CARDIOVASCULAR .....   | 39  |
| 2.7 GASTROINTESTINAL .....   | 74  |
| 2.8 HEMATOLOGICAL .....  | 75  |
| 2.9 MUSCULOSKELETAL .....  | 87  |
| 2.10 HEPATIC .....   | 96  |
| 2.11 RENAL .....   | 102 |
| 2.12 DERMAL .....  | 116 |
| 2.13 OCULAR .....  | 116 |
| 2.14 ENDOCRINE .....   | 117 |
| 2.15 IMMUNOLOGICAL .....   | 121 |
| 2.16 NEUROLOGICAL .....  | 133 |
| 2.17 REPRODUCTIVE .....  | 200 |
| 2.18 DEVELOPMENTAL .....   | 218 |
| 2.19 CANCER .....  | 247 |
| 2.20 GENOTOXICITY .....  | 256 |
| 2.21 GENERAL CELLULAR MECHANISMS OF ACTION .....   | 262 |
| 2.21.1 Perturbation of Ion Homeostasis .....   | 262 |
| 2.21.2 Protein Binding/Sequestration .....   | 270 |
| 2.21.3 Oxidative Stress .....  | 271 |
| 2.21.4 Inflammation .....  | 274 |
| 2.21.5 Epigenetic Effects .....  | 275 |
| 2.21.6 Apoptosis .....   | 276 |
| CHAPTER 3. TOXICOKINETICS, SUSCEPTIBLE POPULATIONS, BIOMARKERS, CHEMICAL<br>INTERACTIONS ..... | 277 |
| 3.1 TOXICOKINETICS .....   | 277 |
| 3.1.1 Absorption .....   | 278 |
| 3.1.2 Distribution .....   | 289 |

|  |  |     |
|--|--|-----|
| 3.1.3  | Metabolism.....  | 298 |
| 3.1.4  | Excretion .....  | 299 |
| 3.1.5  | Physiologically Based Pharmacokinetic (PBPK)/Pharmacodynamic (PD) Models ..... | 302 |
| 3.2  | CHILDREN AND OTHER POPULATIONS THAT ARE UNUSUALLY SUSCEPTIBLE...               | 321 |
| 3.3  | BIOMARKERS OF EXPOSURE AND EFFECT .....  | 326 |
| 3.3.1  | Biomarkers of Exposure.....  | 327 |
| 3.3.2  | Biomarkers of Effect.....  | 335 |
| 3.4  | INTERACTIONS WITH OTHER CHEMICALS .....  | 338 |
| 3.5  | METHODS FOR REDUCING TOXIC EFFECTS .....                                       | 339 |
| 3.5.1  | Reducing Absorption Following Exposure .....                                   | 340 |
| 3.5.2  | Reducing Body Burden .....   | 342 |
| CHAPTER 4. CHEMICAL AND PHYSICAL INFORMATION ..... |  | 345 |
| 4.1  | CHEMICAL IDENTITY .....  | 345 |
| 4.2  | PHYSICAL AND CHEMICAL PROPERTIES .....   | 348 |
| CHAPTER 5. POTENTIAL FOR HUMAN EXPOSURE .....      |  | 355 |
| 5.1  | OVERVIEW .....   | 355 |
| 5.2  | PRODUCTION, IMPORT/EXPORT, USE, AND DISPOSAL .....                             | 358 |
| 5.2.1  | Production .....   | 358 |
| 5.2.2  | Import/Export.....   | 366 |
| 5.2.3  | Use .....  | 366 |
| 5.2.4  | Disposal.....  | 369 |
| 5.3  | RELEASES TO THE ENVIRONMENT .....  | 370 |
| 5.3.1  | Air .....  | 371 |
| 5.3.2  | Water.....   | 377 |
| 5.3.3  | Soil .....   | 379 |
| 5.3.4  | Paint.....   | 380 |
| 5.4  | ENVIRONMENTAL FATE .....   | 382 |
| 5.4.1  | Transport and Partitioning.....  | 382 |
| 5.4.2  | Transformation and Degradation .....   | 389 |
| 5.5  | LEVELS IN THE ENVIRONMENT.....   | 393 |
| 5.5.1  | Air .....  | 395 |
| 5.5.2  | Water.....   | 398 |
| 5.5.3  | Sediment and Soil .....  | 401 |
| 5.5.4  | Paint.....   | 403 |
| 5.5.5  | Other Media .....  | 404 |
| 5.6  | GENERAL POPULATION EXPOSURE.....   | 411 |
| 5.7  | POPULATIONS WITH POTENTIALLY HIGH EXPOSURES .....                              | 428 |
| CHAPTER 6. ADEQUACY OF THE DATABASE.....           |  | 430 |
| 6.1  | INFORMATION ON HEALTH EFFECTS.....   | 430 |
| 6.2  | IDENTIFICATION OF DATA NEEDS .....   | 431 |
| 6.3  | ONGOING STUDIES.....   | 435 |
| CHAPTER 7. REGULATIONS AND GUIDELINES .....        |  | 437 |
| CHAPTER 8. REFERENCES .....                        |  | 442 |



## APPENDICES

|   |     |
|---|-----|
| APPENDIX A. ATSDR MINIMAL RISK LEVEL WORKSHEETS .....       | A-1 |
| APPENDIX B. LITERATURE SEARCH FRAMEWORK FOR LEAD.....       | B-1 |
| APPENDIX C. INGESTION OF LEAD DEBRIS .....                  | C-1 |
| APPENDIX D. QUICK REFERENCE FOR HEALTH CARE PROVIDERS ..... | D-1 |
| APPENDIX E. GLOSSARY .....                                  | E-1 |
| APPENDIX F. ACRONYMS, ABBREVIATIONS, AND SYMBOLS .....      | F-1 |

## LIST OF FIGURES

|   |     |
|---|-----|
| 2-1. Overview of the Number of Studies Examining Associations Between PbB and Health Effects.....                       | 17  |
| 2-2. Change in the Systolic Pressure Associated with a Doubling of the Blood Lead Concentration (PbB) .....             | 46  |
| 2-3. Change in the Diastolic Pressure Associated with a Doubling of the Blood Lead Concentration (PbB) .....            | 47  |
| 2-4. Pb Interactions in the Heme Synthesis Pathway.....   | 86  |
| 2-5. Multiorgan Impact of Reduction of Heme Body Pool by Lead.....  | 87  |
| 2-6. Immunological Pathways by which Pb Exposure Potentially may Increase Risk of Immune-Related Diseases .....         | 132 |
| 2-7. Relationship Between Blood Lead Concentration (PbB) and Birth Weight at PbB $\leq 10$ $\mu\text{g/dL}$ .....       | 231 |
| 3-1. Compartments and Pathways of Lead (Pb) Exchange in the O’Flaherty Model.....                                       | 305 |
| 3-2. Structure of the IEUBK Model for Lead (Pb) in Children .....   | 309 |
| 3-3. Compartments and Pathways of Lead (Pb) Exchange in the Leggett Model .....   | 313 |
| 3-4. Blood Lead Concentrations (PbBs) in Children Predicted by the IEUBK, Leggett, and O’Flaherty Models and AALM ..... | 319 |
| 3-5. Blood Lead Concentrations (PbBs) in Adults Predicted by the Leggett and O’Flaherty Models and AALM.....            | 319 |
| 5-1. Number of NPL Sites with Lead Contamination.....   | 355 |
| 5-2. Number of NPL Sites with Lead Compound Contamination .....   | 356 |
| 5-3. Annual Maximum 3-Month Average Representing the National Trend .....   | 396 |

## LIST OF TABLES

|  |     |
|--|-----|
| 2-1. Summary of Epidemiological Studies Evaluating Death .....   | 22  |
| 2-2. Summary of Epidemiological Studies Evaluating Effects on Body Weight at Mean Blood Lead Concentrations (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                   | 30  |
| 2-3. Effects on Body Weight Associated with Mean Blood Lead Concentrations (PbBs) $\leq 10$ $\mu\text{g}$ .....  | 33  |
| 2-4. Overview of Respiratory Effects in Adults and Children Chronically Exposed to Lead (Pb) .....   | 35  |
| 2-5. Summary of Epidemiological Studies Evaluating Respiratory Effects at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                       | 36  |
| 2-6. Overview of Cardiovascular Effects in Adults and Children Associated with Chronic Exposure to Lead (Pb) .....   | 41  |
| 2-7. Characteristics of the Study Population in Meta-Analyses of Effects of Lead (Pb) on Blood Pressure.....   | 43  |
| 2-8. Summary of Epidemiological Studies Evaluating Effects on Blood Pressure at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                 | 49  |
| 2-9. Summary of Epidemiological Studies Evaluating Atherosclerosis at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                           | 65  |
| 2-10. Summary of Epidemiological Studies Evaluating Heart Disease at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                            | 66  |
| 2-11. Summary of Epidemiological Studies Evaluating Mortality due to Cardiovascular Disease at Mean Blood Lead Concentrations (PbB) $\leq 10$ $\mu\text{g/dL}$ ..... | 70  |
| 2-12. Associations Between Bone Pb and Blood Pressure Outcomes .....   | 71  |
| 2-13. Associations Between Bone Pb and Cardiac Function, Disease, and Mortality.....   | 73  |
| 2-14. Summary of Studies Evaluating Gastrointestinal Symptoms Associated with Chronic Exposure to Lead (Pb) .....  | 76  |
| 2-15. Overview of Hematological Effects Associated with Chronic Exposure to Lead (Pb).....   | 79  |
| 2-16. Summary of Epidemiological Studies Evaluating Hematological Effects at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                    | 82  |
| 2-17. Overview of Musculoskeletal Effects Associated with Chronic Exposure to Lead (Pb) .....  | 89  |
| 2-18. Summary of Epidemiological Studies Evaluating Musculoskeletal Effects at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                  | 91  |
| 2-19. Summary of Epidemiological Studies Evaluating Hepatic Effects Associated with Blood Lead Concentration (PbB) .....   | 98  |
| 2-20. Effects on Liver Function Tests Associated with Chronic Exposure to Lead (Pb) .....  | 101 |

|   |     |
|---|-----|
| 2-21. Overview of Renal Effect Associated with Chronic Exposure to Lead (Pb).....   | 104 |
| 2-22. Summary of Epidemiological Studies Evaluating Renal Effects at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                             | 106 |
| 2-23. Associations Between Bone Pb and Renal Function.....  | 115 |
| 2-24. Overview of Endocrine Effects Associated with Chronic Exposure to Lead (Pb).....  | 119 |
| 2-25. Effects on Thyroid Hormones Associated with Blood Lead Concentration (PbB).....   | 119 |
| 2-26. Overview of Immunological Effects Associated with Chronic Exposure to Lead (Pb).....  | 123 |
| 2-27. Summary of Epidemiological Studies Evaluating Immunological Effects at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                     | 127 |
| 2-28. Overview of Neurological Effects in Children Associated with Chronic Exposure to Lead (Pb).....   | 136 |
| 2-29. Overview of Neurological Effects in Adults Associated with Chronic Exposure to Lead (Pb).....   | 138 |
| 2-30. Summary of Epidemiological Studies Evaluating Neurological Effects in Children at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....          | 141 |
| 2-31. Associations Between Bone Pb and Neurological Outcomes in Children.....   | 175 |
| 2-32. Summary of Epidemiology Studies Evaluating Neurodevelopmental Effects in Adults at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....         | 177 |
| 2-33. Associations Between Bone Pb and Neurological Outcomes in Adults.....   | 191 |
| 2-34. Overview of Effects on the Male Reproductive System Associated with Chronic Exposure to Lead (Pb).....  | 203 |
| 2-35. Effects on Reproductive Hormones Associated with Chronic Exposure to Lead (Pb) in Males.....  | 204 |
| 2-36. Summary of Epidemiological Studies Evaluating Effects on the Male Reproductive System at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....   | 206 |
| 2-37. Overview of Effects on the Female Reproductive System and Pregnancy Outcomes Associated with Chronic Exposure to Lead (Pb).....                                 | 211 |
| 2-38. Summary of Epidemiological Studies Evaluating Effects on the Female Reproductive System at Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ ..... | 212 |
| 2-39. Overview of Developmental Effects Associated with Chronic Exposure to Lead (Pb).....  | 220 |
| 2-40. Effects on Birth Outcomes at Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....  | 221 |
| 2-41. Summary of Epidemiological Studies Evaluating Birth Outcomes Effects of Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                    | 223 |

|   |     |
|---|-----|
| 2-42. Overview of Decreased Anthropometric Measures in Children at Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....  | 233 |
| 2-43. Summary of Epidemiological Studies Evaluating Anthropometric Measurements in Infants and Children with Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ ..... | 235 |
| 2-44. Summary of Epidemiological Studies Evaluating the Onset of Puberty at Children with Mean Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....                    | 242 |
| 2-45. Associations Between Maternal Bone Pb and Birth Outcome and Postnatal Growth.....   | 246 |
| 2-46. Summary of Epidemiological Studies Evaluating Cancer Endpoints and Blood Lead Concentration (PbB).....  | 250 |
| 2-47. Overview of Epidemiology Studies Evaluating Genotoxicity Associated with Chronic Exposure to Lead (Pb) .....  | 258 |
| 2-48. Results of Genotoxicity Studies at Blood Lead Concentration (PbB) $\leq 10$ $\mu\text{g/dL}$ .....  | 260 |
| 2-49. Effects of Lead (Pb) on Function of Various Proteins.....   | 266 |
| 3-1. Ranking of Relative Bioavailability of Lead (Pb) Mineral Phases in Soil .....  | 286 |
| 3-2. Comparison of Slope Factors in Selected Slope Factor Models.....   | 320 |
| 3-3. Influence of Other Metals and Metalloids on Lead (Pb) Toxicity.....  | 338 |
| 3-4. Recommended Actions Based on Child Blood Lead Level (PbB).....   | 341 |
| 3-5. Recommended Actions for Workers Based on Blood Lead Level (PbB) .....  | 342 |
| 4-1. Chemical Identity of Lead and Compounds .....  | 345 |
| 4-2. Physical and Chemical Properties of Lead and Compounds .....   | 350 |
| 5-1. U.S. Manufacturers of Lead Metal and Selected Lead Compounds.....  | 359 |
| 5-2. U.S. Lead Production 2015–2018.....  | 362 |
| 5-3. Facilities that Produce, Process, or Use Lead.....   | 362 |
| 5-4. Facilities that Produce, Process, or Use Lead Compounds.....   | 364 |
| 5-5. Current and Former Uses of Selected Lead Compounds.....  | 368 |
| 5-6. Releases to the Environment from Facilities that Produce, Process, or Use Lead .....   | 372 |
| 5-7. Releases to the Environment from Facilities that Produce, Process, or Use Lead Compounds .....   | 374 |
| 5-8. Historic Levels of Lead Emissions to the Atmosphere in the United States (in Thousand Metric Tons) .....   | 376 |
| 5-9. U.S. Surface Water Discharges of Lead and Lead Compounds (Pounds/Year).....  | 378 |

|  |     |
|--|-----|
| 5-10. Canada Surface Water Discharges of Lead and Lead Compounds (Tonnes).....   | 379 |
| 5-11. Lowest Limit of Detection Based on Standards .....   | 394 |
| 5-12. Lead Levels in Water, Soil, and Air of National Priorities List (NPL) Sites .....  | 395 |
| 5-13. Summary Data for Lead Monitors Across the United States, 2008–2010 ( $\mu\text{g}/\text{m}^3$ ) .....  | 396 |
| 5-14. Percentile Distribution of Mean Lead (TSP) Concentrations ( $\mu\text{g}/\text{m}^3$ ) Measured in Ambient Air at Locations Across the United States.....                              | 397 |
| 5-15. Lead Levels in Foods Commonly Eaten by Toddlers and Infants.....   | 404 |
| 5-16. Selected Mean Lead Concentrations in Food from the FDA Total Diet Study.....   | 405 |
| 5-17. Estimated Median and Maximum Lead Exposures .....  | 407 |
| 5-18. Lead Content in Ayurvedic Medications and Other Health Remedies.....   | 408 |
| 5-19. Lowest Limit of Detection Based on Standards .....   | 411 |
| 5-20. Geometric Mean Blood Lead Levels ( $\mu\text{g}/\text{dL}$ ) and the 95 <sup>th</sup> Percentile Confidence Interval, by Race/Ethnicity, Sex, and Age for the Years for 2011–2016..... | 415 |
| 5-21. Geometric Mean Urine Lead Levels ( $\mu\text{g}/\text{dL}$ ) and the 95 <sup>th</sup> Percentile Confidence Interval, by Race/Ethnicity, Sex, and Age.....                             | 416 |
| 5-22. Industries by Sector with Most Workers having Blood Lead Concentrations (PbBs) $\geq 25 \mu\text{g}/\text{dL}$ , 2010–2016 .....   | 417 |
| 5-23. Number and Rate per 100,000 Children Aged <5 Years with Blood Lead Levels 5–9 $\mu\text{g}/\text{dL}$ in the Childhood Blood Lead Surveillance System, United States, 2010–2014.....   | 418 |
| 5-24. Geometric Mean Urine Lead Levels ( $\mu\text{g}/\text{dL}$ ) and the 95 <sup>th</sup> Percentile Confidence Interval by Smoking Status.....  | 420 |
| 5-25. Measurements of Lead in Indoor Dust in the United States from 2006 to 2011 .....   | 424 |
| 6-1. Ongoing Studies on Lead (Pb).....   | 435 |
| 7-1. Regulations and Guidelines Applicable to Lead (Pb).....   | 437 |