

**REFERENCES TO CHAPTER 2**

- Blaskett and Boxall, 1990, Lead and Lead Alloys, Ellis Horwood.
- CRC Handbook of Chemistry and Physics, 77th edition, 1996-7, Ed D Lide, Boca Raton.
- Kaye and Laby, Tables of Physical and Chemical Constants, 16th edition, 1995, Longman.
- LDA, 1992, Technical Notes on Lead – Production, Properties and Uses, Lead Development Association.
- Smithells Metals Reference Book, 7th edition, 1991, Butterworth Heinemann.

**REFERENCES TO CHAPTER 3**

- Alloway, B.J. and Ayres, D.C., 1997, Chemical Principles of Environmental Pollution, Blackie Academic and Professional, London.
- Bansal, N. P. and Doremus, R. H., 1986, Handbook of glass properties, Academic Press Inc.
- Blaskett and Boxall, 1990, Lead and Lead Alloys, Ellis Horwood.
- Demarest, Taylor, Achenbach and Akhil, Battery storage all but eliminated diesel generator, Electrical World, June 1997.
- Danish Ministry of the Environment and Energy, 1998, Lead: uses, problems and further efforts, Report Project No. 377.
- Donnelly, P., 1999, Akcros Chemicals, Personal Communication.
- European Council of Vinyl Manufacturers, article number 07/12/97, PVC and Stabilisers.
- European Steel Industry statement on the use of leaded steels to improve machinability and the implications of the European Union End-of-Life Vehicles Directive, 1998.
- EUROFER, 1998, European steel industry statement on the use of leaded steel in vehicles.
- Frost and Sullivan Consultants, 1996, World UPS Markets Report.
- ILZSG (International Lead Zinc Study Group), 2001a, Principle Uses of Lead and Zinc.
- ILZSG, 1999b, World Lead Sheet Supply and Demand.
- Lehner, T., 1998, ILZSG Recycling Conference Proceedings.
- Irwin, R.J., VanMouwerik, M., Stevens, L., Seese, M.D. and Basham, W., 1997, Environmental Contaminants Encyclopaedia: Lead Entry, National Park Service, Water Resources Division, Fort Collins, Colorado. Distributed within the federal Government as an electronic document.
- Nriagu, J.O., 1983, Lead and Lead Poisoning in Antiquity, Wiley.

- Rollason, E.C., 1973, Metallurgy for Engineers, Edward Arnold, UK.
- Roorda, A.A.H. and van der Ven, B.L., 1999, Lead Sheet and the Environment, TNO report TNO-MEO - R 98/503, Amsterdam.
- Roskill Information Services, 1975, website [www.roskill.co.uk](http://www.roskill.co.uk).
- Taylor, Torres and Akhil, Spinning reserve in Puerto Rico doesn't spin - it's a battery, Electrical World, April 1995.
- Tylecote, R.F., 1992, A History of Metallurgy, The Institute of Materials, London.

#### REFERENCES TO CHAPTER 4

- Blaskett and Boxall, 1990, Lead and Lead Alloys.
- Frost and Sullivan, 1996, World UPS Markets.
- Metal Bulletin Monthly, July 1997.
- Pulsifer, 1888, Notes for a History of Lead, New York, University Press.
- ILZSG (International Lead Zinc Study Group), 1997, World Directory of Primary and Secondary Lead Plants.
- ILZSG, 1999a, Lead and Zinc Statistics, March 1999.
- ILZSG, 1999b, Study on the Image of Lead.
- ILZSG, 1999c, Lead and Zinc, New Mine and Smelter Projects, 1999.
- LDA, 1992, Technical Notes on Lead, Lead Development Association.
- May, G., 1998, BTR Group, Personal Communication.
- Pulsifer, 1888, Notes on a History of Lead, New York, University Press.

#### REFERENCES TO CHAPTER 5

- Ainley, J.R., 1996, Lead acid battery recycling, presented at "Lead into the Future" Institution of Mining and Metallurgy conference, Buxton, October 1996.
- Bied-Charreton, B., Metaleurop, 1997, E.C. Directive on batteries and accumulators, Proceedings of the 12th International Lead Conference, 22-25 Sept 1997.
- Digest of Environmental Statistics, 1996, HMSO, London.
- ILZSG, 1999, International Lead Zinc Study Group Lead and Zinc Statistics, March 1999.
- ILZSG, 1999, Study on the Image of Lead.
- LDA, 1992, Technical Notes on Lead, Lead Development Association.
- Williams, P., 1998, Waste Treatment and Disposal, John Wiley and sons, citing Digest of Environmental Statistics.

## REFERENCES TO CHAPTER 6

- Académie des Sciences, 1998, Report no. 42, Contamination des sols par les éléments en traces: les risques et leur gestion.
- Alloway, B.J. and Ayres, D.C., 1997, Chemical principles of environmental pollution, Blackie Academic and Professional.
- American Council on Science and Health, 1997, Lead and Human Health.
- Archer and Hodgson, 1987, Total and extractable trace-element contents of soils in England and Wales, *J Soil Sci* 38: (3) 421-431.
- Blaskett, D.R. and Boxall, D., 1990, Lead and Lead Alloys.
- Boutron, C., 1998, Evidence in ice-core research, In: Proceedings of Workshop on the Atmospheric Transport and Fate of Metals in the Environment, International Council on Metals in the Environment, Ottawa, 1998, pp 147-165.
- Canadian Environmental Protection Board, 1999.
- Canon, H.L., Connally, G.G., Epstein, G.B., Parker, J.G., Thornton, I. and Wixson, B.G., 1978.
- Chaney, R.L et al, Mielke, H.W. and Sterrett, S.B., Speciation, mobility and bioavailability of soil lead, proceedings of Lead in Soil: Issues and Guidelines conference, 1988.
- Clarke, M.L., Harvey, D.G. and Humphreys, D.J., 1981, Veterinary Toxicology.
- Consumer Product Safety Commission 1996, Consumer Product Safety Review: Lead paints on public playground equipment 1(2).
- Cope, J., Wedgewood Ceramics, 1999, Personal Communication.
- Colbourn, P. and Thornton, I., 1978, Lead pollution in agricultural soils, *J. Soil Sci.*, 29, 513-526.
- Culbard, E.B., Thornton, I. and Watt, J., et al., 1988, Metal Contamination in British Urban Dusts and Soils, *J Environ. Qual.*, 17: (2) 226-234.
- Danish Ministry of the Environment and Energy, 1998, Lead: uses, problems and further efforts, Report Project No. 377.
- Darnley, A. G., Bjorklund, A., Bolviken, B., Gustavsson, N., Koval, P. V., Plant, J. A., Steenfelt, A., Tauchid, M., Xie, Xuejing, 1995, A global geochemical database for environmental resource management, *Earth Sciences* 19, Paris: UNESCO Publishing.
- Davies, B.E., 1995, in *Heavy Metals in Soils*, ed Alloway, B.J., Blackie.
- Davies, D.J.A. and Thornton, I., 1987, The influence of house age on lead levels in dust and soils in Brighton, England, *Environ Geochem Hlth*, 9: (3-4) 65-67.
- EMEP, 1999, Monitoring and Modelling of Lead, Cadmium and Mercury Transboundary Transport in the Atmosphere of Europe, Joint Report of EMEP Centres: MSC-E and CCC, Meteorological Synthesizing Centre – East, Moscow, Russia.

- Fergusson, J.E., 1990, *The Heavy Elements : Chemistry, Environmental Impact and Health Effects*, Pergamon Press, Oxford.
- Forstner, U., 1983, Assessment of metal pollution in rivers and estuaries, In: Thornton, I., editor, *Applied Environmental Geochemistry*, 395-423.
- *Geochemistry and the Environment*, Vol III, 17/31, National Academy of Sciences, Washington D.C.
- Gilbert, P.T., 1946, Corrosion of Copper Lead and Lead Alloy Specimens after Burial in a Number of Soils for periods of up to 10 Years, *Journal of the Institute of Metals* (1946), March, 139-174.
- Hallenbeck, 1993, *Quantitative Risk Assessment for Environmental and Occupational Health*, Lewis.
- Healy, M.A., 1984, Theoretical model of gastrointestinal absorption of lead, *J. Clin Hosp. Pharm.*, 9, 257-262.
- Healy, M.A., Harrison, P.G., Aslam, M., Davies, S.S. and Wilson C.G., 1982, Lead Sulphide and traditional preparations: routes for ingestion, and solubility and reactions in gastric fluid, *J. Clin. Pharm.*, 7, 169-173.
- Holmgren, G.G., Meyer, M.W., Daniels, R.B., Kubota, J. and Chaney, R.L., 1983, Cadmium, lead, zinc, copper and nickel in agricultural soils of the United States, *Agronomy Abstracts*, 33.
- Jorgensen, S.S. and Willems, M., 1987, The fate of lead in soils: the transformation of lead pellets in shooting range soils, *Ambio* Vol 16, no. 1, 11-15.
- *Land Contamination and Reclamation*, 1 (2) 2, 91-100.
- Li, X. and Thornton, I., Chemical partitioning of trace elements in soils contaminated by mining and smelting, *Science of the Total Environment*.
- Lisk, D.J., 1991, Environmental effects of landfills, *Science of the Total Environment*, 100, 415-468.
- Maskall, J. and Thornton, I., 1993, Metal contamination of soils at historical lead smelting sites.
- Nriagu, J.O. and Pacyna, J.M., 1988, Quantitative assessment of worldwide contamination of air, water and soils by trace metals, *Nature*, 333, 134-139.
- Rabinowitz, M.B., Kopple, J.D. and Wetherill, G.W., 1980, Effect of food intake and fasting on gastro-intestinal lead absorption in humans, *Am. J. Clin. Nutr.*, 33, 1784-1788.
- Rasmussen, P.A., 1996, *Trace Metals in the Environment: a Geological Perspective*, Geological Survey of Canada, Bulletin 492, 26.
- Robinson, H.D., Barber, C. and Morris, P.J., 1982, *Water Pollution Control*, 54, 465-478.
- Roorda, A.A.H. and van der Ven, B.L., 1999, *Lead Sheet and the Environment*, TNO Institute of Environmental Sciences, Energy Research and Process Innovation, Amsterdam, The Netherlands, Report no. TNO-MEP - R 98/503.

- Select Committee of the UK House of Lords on the European Community, 1996.
- Steil, U., 1999, ELV paper, Metall, Vol. 53.
- Thornton, I., 1995, Metals in the Global Environment: Facts and Misconceptions, ICME.
- Thornton, I., 1980, Geochemical aspects of heavy metal pollution and agriculture in England and Wales, In: Inorganic Pollution and Agriculture, HMSO, London, 105-125.
- Thornton, I. and Abrahams, P., 1983, Soil Ingestion – A major pathway of heavy metals into livestock grazing contaminated land, *Sci. Total Environ.*, 28, 287-294.
- Thornton, I. and Jones, T. H., 1984, Sources of lead and associated metals in vegetables grown in British urban soils: uptake from the soil versus air deposition, In: Trace Substances in Environmental Health – XVIII, ed. Hemphill, D.D., University of Missouri, Columbia, Missouri, 303-310.
- Thornton, I., Watt, J.M., Davies, D.J.A., Hunt, A., Cotter-Howells J. and Johnson, D.L., 1994, Environmental Geochemistry and Health, 16 (3/4) 113, Lead contamination of UK dusts and soils and implications for childhood exposure: an overview of the work of the Environmental Geochemistry Research Group, Imperial College, London, England, 1981-1992.
- TNO, 1998, Incremental cost and remaining emission in 2010 of Heavy Metals (HM) resulting from the implementation of the draft HM Protocol under the UN/ECE Convention on Long Range Transboundary Air Pollution, TNO Institute of Environmental Sciences, Energy Research and Process Innovation, The Netherlands, 69.
- WHO, 1993, Guidelines for Drinking water Quality (2nd ed), WHO, Geneva.
- Williams, P.T., 1998, Waste Treatment and Disposal, Wiley.

## REFERENCES TO CHAPTER 7

- Académie des Sciences, 1998, Contamination des sols par les éléments en traces: les risques et leur gestion, Rapport no. 42, 1998.
- ACSH (American Council on Science and Health), 1997, Lead and Human Health.
- Alloway, B.J. (ed), 1995, Heavy Metals in Soils. Blackie and son, Glasgow.
- Alloway, B.J. and Ayres, D.C., 1997, Chemical Principles of Environmental Pollution, Blackie Academic and Professional, London.
- ATSDR (Agency for Toxic Substances and Disease Registry), 1988, The nature and extent of lead poisoning in children in the United States: a report to Congress, July, 1988.

- Bellinger, D., Leviton, A., Rabinowitz, M., Allred, E., Needleman, H., Schenbaum, S., Weight gain and maturity in foetuses exposed to low levels of lead, *Environ Res.*, 1991, 54, 151-158.
- Booth, N.H., McDonald, L.E., eds, *Veterinary Pharmacology and Therapeutics*, 1992, Canada Council of Ministers of the Environment (1992) Canadian Environmental Quality.
- Bowen, H.J.M., 1979, *The Environmental Chemistry of the Elements*, Academic Press, London.
- Canadian Environmental Protection Branch, from webpage, 1999.
- CECAD-Plomb, 1996, The problem of lead – questions and answers, CECAD-Plomb.
- CEH (Committee on Environmental Health), 1993, American Academy of Paediatrics, Lead Poisoning: from screening to primary prevention, *Paediatrics*, 92, 176-183.
- Chimie et Ecologie, Impact des Metaux sur l'Homme et l'Environnement - Influence de la Speciation - le Cas du Plomb, Paris, 1998.
- Clarke, M.L., Harvey, D.G. and Humphreys, D.J., 1981, *Veterinary Toxicology*, London, Bailliere Tindall.
- Colbourn, P. and Thornton, I., 1978, Lead pollution in agricultural soils, *J. Soil Sci.*, 29, 513-526.
- Cotter-Howells, J. and Thornton, I., 1991, Sources and pathways of environmental lead to children in a Derbyshire mining village, *Environmental Geochemistry and Health*, 13, 127-135.
- Criteria for Contaminated Sites, Report CCME EPC-C543, Winnipeg, Manitoba.
- Cook, M., Chappell, W.R., Hoffman, R.E., Mangione, E.J., 1993, Assessment of blood lead level in children living in a historic mining and smelting community, *Am. J. Epidemiol.* 1993, 137, 447-455.
- Davies, B.E., Thornton, I., Watt, J.M., Culbard, E.B., Harvey, P.G., Delves, H.T., Sherlock, J.C., Smart, G.A., Thomas, J.F.A. and Quin, M.J., 1990, Lead intake and blood lead in two-year-old UK urban children, *The Science of the Total Environment*, 90, 13-29.
- Delves, H. T., Diaper, S. J., Oppert, S., Prescott-Clarke, P., Periam, J., Dong, W., Colhoun, H. and Gompertz, D., 1996, Blood lead concentrations in United Kingdom have fallen substantially since 1984, *Brit. Med. J.*, 313, 883-884.
- Ducoffre, G., Claeys, F. and Bruaux, P., 1990, Lowering time trend of blood lead levels in Belgium since 1978, *Environ. Res.*, 51 (1), 25-34.
- Elliott, P., Arnold, R., Barltrop, D., Thornton, I., House, I.M., Henry, J.A., 1999, Clinical lead poisoning in England: an analysis of routine sources of data, *Occupational and Environmental Medicine*, 56, 820-824.
- Environmental Contaminants Encyclopaedia, Lead Entry, 1997, See <http://www.iarc.fr/Irwin et al>.

- European Commission DG XXIV Consumer Policy and Consumer Health, "Guidelines on the Application of the Precautionary Principle" (draft), 17<sup>th</sup> October 1998.
- Ferguson, J.E., 1990, *The Heavy Elements : Chemistry, Environmental Impact and Health Effects*, Pergamon Press, Oxford.
- Gainer, J.H., 1974, *Environ. Health Perspect. Exp.* 7, 113-9, as cited in USEPA; Ambient Water Quality Criteria Doc: Lead p c-71, 1980 EPA 440/5-80-057.
- Glasgow 93 Lead Study, 1996, *Is Tap Water Lead Still a Public Health Problem?*
- Grobler, S.R., Maresky, L.S. and Kotze, T.J., 1992, Lead reduction of petrol and blood lead concentrations of athletes, *Arch Environ Health*, 47, 139-142.
- Gulson et al, Lead Bioavailability in the Environment of Children: Blood Lead Levels in Children can be Elevated in a Mining Community, *Archives of Environmental Health*, Sept/Oct 1994, Vol 49, No 5.
- IARC (The International Agency for Research on Cancer), 1996, <http://www.iarc.fr/>.
- Inserm (Institut national de la sante et de la recherché medicale), 1999, <http://www.lyon151.inserm.fr/>.
- International Lead and Zinc Study Group (ILZSG), 1996, *Environmental and Health Controls*.
- Institute for Environment and Health 1998 Recent UK Blood Lead Surveys.
- Irwin, R.J., VanMouwerik, M., Stevens, L., Seese, M.D. and Basham, W., 1997, *Environmental Contaminants Encyclopedia: Lead Entry*, 1997, National Park Service, Water Resources Division, Fort Collins, Colorado. Distributed within the federal Government as an electronic document.
- INSERM, 1999, *Plomb dans l'environnement, Quels sont les Risques pour la Santé?*
- Kabata-Pendias, A. and Pendias, H., 1984, *Trace Elements in Soils and Plants*, CRC Press, Inc., Boca Raton, Florida, 315.
- Kazantzis, G., 1981, Role of Cobalt, Iron, Lead, Manganese, Mercury, Platinum, Selenium and Titanium in Carcinogenesis, *Environ. Health. Persp.*, 40, 143-161.
- Mahaffey, K.R., Rosen, J.F., Chesney, R.W., Peeler, J.T., Smith, C.M. and Debuca, H.F., 1982, Association between age, blood lead concentration and serum, 1,25-dihydroxy-cholecalciferol levels in children, *American Journal of Clinical Nutrition*, 35, 1327-1331.
- Moen, J.E.T., Cornet J.P. and Evers, C.W.A., 1986, In *Contaminated Soils* (eds Assink, J.W., and van den Brink, W.J.), Martinus Nijhoff, Dordrecht.
- Murphy, M.J., Graziano, J.H., Popovac, D., Kline, J.K., Mehmeti, A. et al., 1990, Past pregnancy outcomes among women living in the vicinity of a lead smelter in Kosovo Yugoslavia, *Am. J. Public Health*, 80, 33-35.

- Needleman, H.L., Schell, M.A., Bellinger, D., Leviton, A., Allred, E.N., 1990, The Long term effects of exposure to low doses of lead in childhood, *The New England Journal of Medicine*, 322, 83-88.
- Needleman, H.L. and Bellinger, D., 1991, The effects of low level exposure to lead, *Annual Review of Public Health*, 12, 111-140.
- Needleman, H.L., Riess, J.A., Tobin, M.J., Biesecker, G.E., 1996, Greenhouse, J.B., Bone lead levels and delinquent behaviour, *JAMA*, 275, 363-369.
- Netherlands Ministry of Housing Physical Planning and the Environment, 1991.
- NHANES (The National Health and Nutrition Examination Surveys), 1994, Pirkle, J.L., Brody, D. J., Gunter, E. K., Kramer, R.A., Pascal, D.C., Flegal, K.M. and Matte, I.D., The decline in blood lead levels in the United States: *J. Am. Med. Assoc.*, 272, 284-291.
- Nriagu, J.O., 1983, *Lead and Lead Poisoning in Antiquity*, John Wiley and sons, New York.
- Pocock, S.J., Smith, M. and Baghurst, P., 1994, Environmental lead and children's intelligence - A systematic review of the epidemiologic evidence, *Brit. Med. J.*, 309, 1189-1197.
- Primates, P., Dong, W., Bart, L., Poulter, M.R. and Delves, H.T., 1998, Survey of blood lead levels in the population in England, 1995, In: *IEH Report on Recent Blood Lead Surveys*, Institute for Environment and Health, Leicester, 9-52.
- Sanstead, H.H., 1967, Effect of chronic lead intoxication on in-vivo I-131 uptake by the rat thyroid, *Proc Soc Exp Biol. Med.*, 124, 18-20.
- Sanstead, H.H., Stant, E.G., Brill, A.B., Arias, L.I., Terry, R.T., 1969, Lead intoxication and the thyroid, *Arch. Inter., Med.*, 123:632-635.
- Schwartz, J., 1991, Lead, blood pressure and cardio-vascular disease in men and women, *Environ. Health. Perspect.*, 91, 71-75.
- Schwartz, J., Lead, blood pressure and cardio-vascular disease in men, *Arch Environ Health*, 1995, 50, 31-37.
- (SCOPE 15), 1980, Scientific Committee on Problems of the Environment, *Environmental Risk Assessment* (ed Whyte, A.V. and Burton, I.), John Wiley and sons.
- Sherlock, C., UK Ministry of Agriculture, Fisheries and Food, Lead in Food and the Diet, in *Lead in the Home Environment*, (ed. Thornton, I. and Culbard, E.), 1987.
- Smith, D.R., Ilustre, R.P. and Osterloh, J.D., 1998, methodological considerations for the accurate determination of lead in human plasma and serum, *Am. J. Ind. Med.*
- Thornton, I. and Jones, T.H., 1984, Sources of lead and associated metals in vegetables grown in British urban soils: uptake from the soil versus air

- deposition, In: Trace Substances in Environmental Health – XVIII, ed. Hemphill, D.D., University of Missouri, Columbia, Missouri, 303-310.
- TNO, 1998, Incremental cost and remaining emission in 2010 of Heavy Metals (HM) resulting from the implementation of the draft HM Protocol under the UN/ECE Convention on Long Range Transboundary Air Pollution, TNO Institute of Environmental Sciences, Energy Research and Process Innovation, The Netherlands, 69.
  - UK, DETR (Department of the Environment, Transport and the Regions), 1998, Expert Panel on Air Quality Standards: Lead.
  - UK Department of the Environment, 1987, Interdepartmental Committee for the Reclamation of Contaminated Land List of Trigger Concentrations for Contaminants, DOE, London.
  - US EPA (Environment Protection Agency), 1998, Evaluating and Controlling Lead-Based Paint Hazards: A Guide for Using EPAs Lead-Base Paint Hazard Standards, Public Review Draft, Office of Pollution Prevention and Toxics.
  - USFDA, (US Food and Drug Administration), 1997, Lead Threat Lessens, But Mugs Still Pose a Problem, FDA Consumer.
  - Wixson, B.G. and Davies, B.E., 1994, Guidelines for lead in soil: proposal of the society for Environmental Geochemistry and Health. Environ. Sci. Technol., 28, 26A-31A.
  - WHO, 1987, Air Quality Guidelines for Europe, Europe series No 23.
  - WHO (in press), Revised Air Quality Guidelines for Europe.
  - WHO, 1993, Guidelines for Drinking Water Quality (2nd ed) WHO, Geneva.
  - WHO, 1995, Environmental Health Criteria 165, Lead.

## REFERENCES TO CHAPTER 8

- World Health Organisation, 1987, Air Quality Guidelines for Europe, Europe series No 23.
- ADEME, La qualite de l'air en France en 1995-1996.
- Agricola, 1556, De Re Metallica, translated into English 1950 by Hoover and Hoover, New York, Dover.
- Alloway, B.J. and Ayres, D.C., 1997, Chemical Principles of Environmental Pollution, Blackie Academic and Professional, London.
- CEDAC-PLomb, 1996.
- Chimie et Ecologie, 1998, Impacts des Metaux sur l'Homme et l'Environnement - Le Cas du Plomb.
- Davies, B.E., 1995, Heavy Metals in Soils, edited by Alloway, B.J.
- Farago, M.E., Thornton, I., White, N.D., Tell, I. and Martensson, M.B., 1999, Environmental impacts of a secondary lead smelter in Landskrona, Southern Sweden, Environmental Geochemistry and Health, 21, 67-82.

- Gee, C., Ramsey, M.H., Maskall, J., Thornton, I., 1997, Mineralogy and weathering processes in historical smelting slags and their effect on the mobilisation of lead, *Journal of Geochemical Exploration*, 58, 249-257.
- INSERM, 1999, Plomb dans l'environnement, Quels sont les risques pour la santé?, 461.
- International Lead Zinc Study Group (ILZSG), 1996, Environmental and Health Controls on Lead.
- Ministre de l'Aménagement du Territoire et de l'Environnement, 1997, Principaux rejets industriels en France; Bilan de l'année 1996.
- Nriagu, J.O., 1983, Lead and Lead Poisoning in Antiquity.
- Pacyna, J.M., 1996, Atmospheric Emissions of Heavy Metals for Europe (improvements, updates, historical data and projections), Unpublished report, International Institute for Applied Systems Analysis (IIASA), Hagan, Norway, 1996.
- Olendrzynski, K., Alcamo, J. and Natinicki, J., Computing heavy metals in Europe atmosphere 1, model development and testing, *Atmos. Environ. A Gen.*, 18, 3355-3369.
- Pulsifer, W.H., Notes for a History of Lead, 1888.
- TNO, 1998, Incremental cost and remaining emission in 2010 of Heavy Metals (HM) resulting from the implementation of the draft HM Protocol under the UN/ECE Convention on Long Range Transboundary Air Pollution, TNO Institute of Environmental Sciences, Energy Research and Process Innovation, The Netherlands, 69.
- UK Department of the Environment, Transport and the Regions (DETR), 1998, Expert Panel on Air Quality Standards – Lead.
- UK Health and Safety Statistics Book 1997-1998.
- UK Her Majesty's Inspectorate of Pollution (HMIP), 1993, Pollution Control for Primary Lead Production, DOE Report no. DoE/HMIP/RR/93/049.
- UK HMIP, 1994, Chief Inspector's Guidance to Inspectors, Environmental Protection Act 1990 Process Guidance Note IPR 2/5, Processes for the Production of Lead and Lead Alloys. 1994, HMSO, London.

## REFERENCES TO CHAPTER 9

- International Lead Zinc Study Group (ILZSG), Lead and Zinc Statistics, March 1999.

**DATA SOURCES FOR FIGURE 7.1 – TRENDS IN BLOOD LEAD LEVELS**

- **Sweden**, *Stromberg et al., Occupational and Environmental Medicine, 1995, Vol. 52, p764*. Data for children (boys and girls) aged 3-19 (median = 10) living in an urban area (Landskrona). Sample size was between 20 and 156 depending on year. Note that data for rural areas is also available.
- **Denmark**, *Moller et al., American Journal of Epidemiology, 1992, Vol. 136, p1091*. Data for men aged 40-51 living in Copenhagen County. Sample size was 439-504 depending on year.  
*Nielsen et al., Scandinavian Journal of Environmental Health, 1998, Vol. 21, p153*. Data for men and women aged 20-89 living in both city and rural communities. The sample population was chosen to closely reflect the general Danish adult population and therefore can be used as a national adult average. Two comparable data points are presented.
- **Switzerland**, *Weitlisbach et al., Environmental Research, 1995, Vol. 68, p82*. Data for men aged 25-74 living in Vaud and Fribourg. Sample size was 804-931 depending on year.
- **United Kingdom**, *Delves et al., British Medical Journal, 1996, Vol. 313, p883*. Data taken from three national health surveys. Over 6000 participants including men, women and children living a variety of areas both urban and rural. This effectively provides a national average.
- **United States**, *Morbidity and Mortality Weekly Report, 1997, Vol. 46, p141*. Results taken from the US National Health and Nutrition Examination Surveys (NHANES II, NHANES III Phase 1, NHANES III Phase 2). These studies examined 10,000 participants of both sexes covering all age groups taken from both urban and rural areas. This effectively provides a national average.
- **Austria**, *Federal Ministry for Environment, Youth and Family, Austria, 1992*. Data submitted to Environment Canada in preparation for the OECD Risk Reduction Monograph on Lead. Data represents general population blood lead levels. No further information available.
- **Belgium**, *Ducoffre et al., Environmental Research, 1990, Vol. 51, p25*. Data collected from a large number of people of all ages and inhabiting a wide variety of areas. This effectively gives a national average.

LEAD: THE FACTS

- **Canada**, *Environmental and Health Directorate, Health and Welfare Canada, 1992*. Data submitted to Environment Canada in preparation for the OECD Risk Reduction Monograph on Lead and represents the average national blood lead level for children.
- **Italy**, *Bono et al., Environmental Research, 1995, Vol. 70, p30*. Data collected from approximately 200 adults (male and female) living in urban Turin.
- **Spain**, *Rodamilans et al., Bulletin of Environmental Contamination and Toxicology, 1996, Vol. 56, p717*. Data collected from a wide range of people living in urban Barcelona.
- **Korea**, *Yang et al., International Archives on Occupational and Environmental Health, 1996, Vol. 68, p199*. Three separate studies involving a wide range of people living in both urban and rural areas. The results have been adjusted so as to provide an average for the general population.
- **China**, *Qu et al., International Archives on Occupational and Environmental Health, 1993, Vol. 65, pS202*. Data collected from adults living in Jinan City. Data shown refers to the female population although data for the male population is also available.
- **Germany**, German Federal Environment Report, 1992/3. Average blood lead levels for the general public.
- **New Zealand**, *Hinton et al., Journal of Epidemiology and Community Health, 1986, Vol. 40, p249*. Data refers to nearly 3,000 men, women and children living in Christchurch.
- **Finland**, *Ponka et al., Science of the Total Environment, 1993, Vol. 138, p 301*. Data refers to children living in Helsinki.