6. References

Agency for Toxic Substances and Disease Registry (1988) *Toxicological Profile for Beryllium* (ATSDR/TP-88/07; US NTIS PB89-148233), Atlanta, GA, US Public Health Service

Aldrich Chemical Co. (1992) *Aldrich Catalog/Handbook of Fine Chemicals 1992–1993*, Milwaukee, WI, pp. 142–143

Aldridge, W.N., Barnes, J.M. & Denz, F.A. (1950) Biochemical changes in acute beryllium poisoning. *Br. J. exp. Pathol.*, **31**, 473–484

Alfa Products (1990) *Alfa Catalog—Research Chemicals and Accessories*, Ward Hill, MA, pp. 56, 460

American Conference of Governmental Industrial Hygienists (1992) *1992–1993 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*, Cincinnati, OH, p. 13

Angerer, J. & Schaller, K.H., eds (1985) *Analysis of Hazardous Substances in Biological Materials*, Vol. 1, Weinheim, VCH Verlagsgesellschaft, pp. 57–65

Anon. (1992) Occupational exposure limits. *BIBRA Bull.*, **31**, 287

Apostoli, P., Porru, S. & Alessio, L. (1989a) Behaviour of urinary beryllium in general population and in subjects with low-level occupational exposure. *Med. Lav.*, **80**, 390–396

Apostoli, P., Porru, S., Minoia, C. & Alessio, L. (1989b) Beryllium. In: Alessio, L., Berlin, A., Boni, M. & Roi, R., eds, *Biological Indicators for the Assessment of Human Exposure to Industrial Chemicals* (EUR 12174 EN), Luxembourg, Commission of the European Communities, pp. 3–21

Araki, M., Okada, S. & Fujita, M. (1954) Beryllium. Experimental studies on beryllium-induced malignant tumours of rabbits (Jpn.). *Gann*, **45**, 449–451

Arbeidsinspectie [Labour Inspection] (1986) *De Nationale MAC-Lijst 1986* [National MAC List 1986], Voorburg, p. 8

Arbejdstilsynet [Labour Inspection] (1992) *Graensevaerdier for Stoffer og Materialer* [Limit Values for Compounds and Materials] (No. 3.1.0.2), Copenhagen, p. 52

Arbetarskyddsstyrelsens [National Board of Occupational Safety and Health] (1991) *Hygieniska Gränsvärden* [Hygienic Limit Values], Stockholm, p. 14

Arlauskas, A., Baker, R.S.U., Bonin, A.M., Tandon, R.K., Crisp, P.T. & Ellis, J. (1985) Mutagenicity of metal ions in bacteria. *Environ. Res.*, **36**, 379–388

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[1]For definition of the italicized terms, see Preamble, pp. 26–30.

Asami, T. & Fukazawa, F. (1985) Beryllium contents of uncontaminated soil and sediments in Japan. *Soil Sci. Plant Nutr.*, **31**, 43–53

Ashby, J., Ishidate, M., Jr, Stoner, G.D., Morgan, M.A., Ratpan, F. & Callander, R.D. (1990) Studies on the genotoxicity of beryllium sulphate *in vitro* and *in vivo*. *Mutat. Res.*, **240**, 217–225

Atomergic Chemetals Corp. (undated) *High Purity Metals Brochure*, Farmingdale, NY

Ballance, J., Stonehouse, A.J., Sweeney, R. & Walsh, K. (1978) Beryllium and beryllium alloys. In: Mark, H.F., Othmer, D.F., Overberger, C.G., Seaborg, G.T. & Grayson, N., eds, *Kirk-Othmer Encyclopedia of Chemical Technology*, 3rd ed., Vol. 3, New York, John Wiley & Sons, pp. 803–823

Barlow, S. & Sullivan, F. (1982) *Reproductive Hazards of Industrial Chemicals. An Evaluation of Animal and Human Data*, London, Academic Press, pp. 119–125

Barna, B.P., Chiang, T., Pillarisetti, S.G. & Deodhar, S.D. (1981) Immunologic studies of experimental beryllium lung disease in the guinea pig. *Clin. Immunol. Immunopathol.*, **20**, 402–411

Barna, B.P., Deodhar, S.D., Chiang, T., Gautam, S. & Edinger, M. (1984) Experimental beryllium-induced lung disease. I. Differences in immunologic responses to beryllium compounds in strains 2 and 13 guinea pigs. *Int. Arch. Allergy appl. Immunol.*, **73**, 42–48

Barnes, J.M. (1950) Experimental production of malignant tumours by beryllium (Letter to the Editor). *Lancet*, **i**, 463

Barnes, J.M., Denz, F.A. & Sissons, H.A. (1950) Beryllium bone sarcomata in rabbits. *Br. J. Cancer*, **4**, 212–222

Baumgardt, B., Jackwerth, E., Otto, H. & Tölg, G. (1986) Trace analysis to determine heavy metal load in lung tissue. A contribution to substantiation of occupational hazards. *Int. Arch. occup. environ. Health*, **58**, 27–34

Bencko, V., Brezina, M., Benes, B. & Cikrt, M. (1979) Penetration of beryllium through the placenta and its distribution in the mouse. *J. Hyg. Epidemiol. Microbiol. Immunol.*, **23**, 361–367

Bencko, V., Vasil'eva, E.V. & Symon, K. (1980) Immunological aspects of exposure to emissions from burning coal of high beryllium content. *Environ. Res.*, **22**, 439–449

Berry, J.-P., Escaig, F. & Galle, P. (1987) Study of intracellular localization of beryllium by analytical ionic microscopy (Fr.). *C.R. Acad. Sci. Paris*, **304** (Sér. III), 239–243

Berry, J.-P., Mentre, P., Hallegot, P., Levi-Setti, R. & Galle, P. (1989) Cytochemical study of abnormal intranuclear structures rich in beryllium. *Biol. Cell*, **67**, 147–157

Boiana, J.M. (1980) *Technical Assistance Report: Walter Reed Army Medical Center, Washington, DC* (NIOSH Report No. TA-80-60-756), Cincinnati, OH, National Institute for Occupational Safety and Health

Bowen, H.J.M. (1966) *Trace Elements in Biochemistry*, London, Academic Press, pp. 150–176

Breslin, A.J. & Harris, W.B. (1959) Health protection in beryllium facilities. Summary of ten years of experience. *Arch. ind. Health*, **19**, 596–648

Brooks, A.L., Griffith, W.C., Johnson, N.F., Finch, G.L. & Cuddihy, R.G. (1989) The induction of chromosome damage in CHO cells by beryllium and radiation given alone and in combination. *Radiat. Res.*, **120**, 494–507

Brush Wellman (1992) *Material Safety Data Sheet—No. A111: AlBeMet*™, Cleveland, OH

Brush Wellman (undated) *BeO*, Cleveland, OH

Budavari, S. (1989) *The Merck Index*, 4th ed., Rahway, NJ, Merck & Co., pp. 181–183

Bussy, A.A.B. (1828) Pharmacy section: glucinium (Fr.). *J. Chim. méd. Pharm. Toxicol.*, *4*, 453–456

Carlier, M.-F., Didry, D., Melki, R., Chabre, M. & Pantaloni, D. (1988) Stabilization of microtubules by inorganic phosphate and its structural analogues, the fluoride complexes of aluminum and beryllium. *Biochemistry*, **27**, 3555–3559

Carlier, M.-F., Didry, D., Simon, C. & Pantaloni, D. (1989) Mechanism of GTP hydrolysis in tubulin polymerization: characterization of the kinetic intermediate microtubule-GDP-P_i using phosphate analogues. *Biochemistry*, **28**, 1783–1791

Caroli, S., Coni, E., Alimonti, A., Beccaloni, E., Sabbioni, E. & Pietra, R. (1988) Determination of trace elements in human lungs by ICP-AES (inductivity coupled plasma–atomic emission spectrometry) and NAA (neutron activation analysis). *Analysis*, **16**, 75–80

Carpenter, A.V., Flanders, W.D., Frome, E.L., Tankersley, W.G. & Fry, S.A. (1988) Chemical exposures and central nervous system cancers: a case–control study among workers at two nuclear facilities. *Am. J. ind. Med.*, **13**, 351–362

Casto, B.C., Meyers, J. & DiPaolo, J.A. (1979) Enhancement of viral transformation for evaluation of the carcinogenic or mutagenic potential of inorganic metal salts. *Cancer Res.*, **39**, 193–198

CERAC, Inc. (1991) *Advanced Specialty Inorganics*, Milwaukee, WI, pp. 71–72

Cherniack, M.G. & Kominsky, J.R. (1984) *Health Hazard Evaluation Report. Chemetco Incorporated, Alton, Illinois* (NIOSH Report No. 82-024-1428), Cincinatti, OH, National Institute for Occupational Safety and Health

Cholak, J., Schafer, L. & Yeager, D. (1967) Exposures to beryllium in a beryllium alloying plant. *Am. ind. Hyg. Assoc. J.*, **28**, 399–407

Clary, J.J., Bland, L.S. & Stokinger, H.E. (1975) The effect of reproduction and lactation on the onset of latent chronic beryllium disease. *Toxicol. appl. Pharmacol.*, **33**, 214–221

Cloudman, A.M., Vining, D., Barkulis, S. & Nickson, J.J. (1949) Bone changes observed following intravenous injections of beryllium (Abstract). *Am. J. Pathol.*, **25**, 810–811

Commission of the European Communities (1980) Council Directive of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances (80/68/EEC). *Off. J. Eur. Commun.*, **L20**, 43

Commission of the European Communities (1991a) Thirteenth Commission Directive of 12 March 1991 (91/814/EEC) on the approximation of the laws of the Member States relating to cosmetic products. *Off. J. Eur. Commun.*, **L91**, 59–62

Commission of the European Communities (1991b) Council Directive of 12 December 1991 on hazardous wastes (91/689/EEC). *Off. J. Eur. Commun.*, **L377**, 20

Commission of the European Communities (1991c) Amendment to the Council Directive 67/548/EEC of June 1967 on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances. *Off. J. Eur. Commun.*, **L180**, 79

Commission of the European Communities (1992) Fifteenth Commission Directive of 21 October 1992 (92/86/EEC) on the approximation of the laws of the Member States relating to cosmetic products. *Off. J. Eur. Commun.*, **L325**, 18-22

Cook, W.A. (1987) *Occupational Exposure Limits—Worldwide*, Akron, OH, American Industrial Hygiene Association, pp. 117, 129, 165

Crowley, J.F., Hamilton, J.G. & Scott, K.G. (1949) The metabolism of carrier-free radioberyllium in the rat. *J. biol. Chem.*, **177**, 975–984

Cullen, M.R., Cherniack, M.G. & Kominsky, J.R. (1986) Chronic beryllium disease in the United States. *Semin. respir. Med.*, **7**, 203–209

Cullen, M.R., Kominsky, J.R., Rossman, M.D., Cherniack, M.G., Rankin, J.A., Balmes, J.R., Kern, J.A., Daniele, R.P., Palmer, L., Naegel, G.P., McManus, K. & Cruz, R. (1987) Chronic beryllium disease in a precious metal refinery. Clinical epidemiologic and immunologic evidence for continuing risk from exposure to low level beryllium fume. *Am. Rev. respir. Dis.*, **135**, 201–208

Curtis, G.H. (1951) Cutaneous hypersensitivity due to beryllium. A study of thirteen cases. *Arch. Dermatol. Syphilol.*, **64**, 470–482

Dayan, A.D., Hertel, R.F., Heseltine, E., Kazantzis, G., Smith, E.M. & van der Venne, M.T., eds (1990) *Immunotoxicity of Metals and Immunotoxicology. Proceedings of an International Workshop*, New York, Plenum Press, p. 7

DeNardi, J.M., Van Ordstrand, H.S. & Curtis, G.H. (1952) Berylliosis. Summary and survey of all clinical types in ten year period. *Cleveland clin. Q.*, **19**, 171–193

Deodhar, S.D. & Barna, B.P. (1991) Immune mechanisms in beryllium lung disease. *Cleveland Clin. J. Med.*, **58**, 157–160

Deodhar, S.D., Barna, B. & Van Ordstrand, H.S. (1973) A study of the immunologic aspects of chronic berylliosis. *Chest*, **63**, 309–313

Deutsche Forschungsgemeinschaft (1992) *MAK- and BAT-Values 1992. Maximum Concentrations at the Workplace and Biological Tolerance Values for Working Materials* (Report No. 28), Weinheim, Verlagsgesellschaft, p. 21

D.F. Goldsmith Chemical & Metal Corp. (undated) *High Purity Elements; Fine Inorganic Chemicals; Precious Metals; Mercury*, Evanston, IL, p. 6

DiPaolo, J.A. & Casto, B.C. (1979) Quantitative studies of in vitro morphological transformation of Syrian hamster cells by inorganic metal salts. *Cancer Res.*, **39**, 1008–1013

Drury, J.S., Shriner, C.R., Lewis, E.G., Towill, L.E. & Hammons, A.S. (1978) *Reviews of the Environmental Effects of Pollutants: VI. Beryllium* (Report No. EPA-600/1-78-028), Cincinatti, OH, US Environmental Protection Agency

Dunkel, V.C., Pienta, R.J., Sivak, A. & Traul, K.A. (1981) Comparative neoplastic transformation responses of Balb/3T3 cells, Syrian hamster embryo cells, and Rauscher murine leukemia virus-infected Fischer 344 rat embryo cells to chemical carcinogens. *J. natl Cancer Inst.*, **67**, 1303–1315

Dunkel, V.C., Zeiger, E., Brusick, D., McCoy, E., McGregor, D., Mortelmans, K., Rosenkranz, H.S. & Simmon, V.F. (1984) Reproducibility of microbial mutagenicity assays: I. Tests with *Salmonella typhimurium* and *Escherichia coli* using a standardized protocol. *Environ. Mutag.*, **6** (Suppl. 2), 1–254

Dutra, F.R. & Largent, E.J. (1950) Osteosarcoma induced by beryllium oxide. *Am. J. Pathol.*, **26**, 197–209

Dutra, F.R., Largent, E.J. & Roth, J.L. (1951) Osteogenic sarcoma after inhalation of beryllium oxide. *Arch. Pathol.*, **51**, 473–479

Dvivedi, N. & Shen, G. (1983) Beryllium toxicity in the laboratory processing of dental alloy (Abstract No. 568). *J. dent. Res.*, **62**, 232

Dylevoi, M.V. (1990) Evaluation of the DNA-damaging action of the carcinogenic metal beryllium by means of bacterial repair test (Russ.). *Mikrobiol. Zh. (Kiev)*, **52**, 34–38

Eisenbud, M. (1984) Commentary and update: chemical pneumonia in workers extracting beryllium oxide. *Cleveland clin. Q.*, **51**, 441–447

Eisenbud, M. & Lisson, J. (1983) Epidemiological aspects of beryllium-induced nonmalignant lung disease: a 30-year update. *J. occup. Med.*, **25**, 196–202

Eller, P.M., ed. (1984) Method 7300. In: *NIOSH Manual of Analytical Methods*, 3rd Ed., Vol. 1 (DHHS (NIOSH) Publ. No. 84-100), Washington DC, US Government Printing Office, pp. 7300-1–7300-5

Eller, P.M., ed. (1987) Method 7102. In: *NIOSH Manual of Analytical Methods*, 3rd Ed., Suppl. 2 (DHHS (NIOSH) Publ. No. 84-100), Washington DC, US Government Printing Office, pp. 7102-1–7102-3

Epstein, P.E., Dauber, J.H., Rossman, M.D. & Daniele, R.P. (1982) Bronchoalveolar lavage in a patient with chronic berylliosis: evidence for hypersensitivity pneumonitis. *Ann. intern. Med.*, **97**, 213–216

Everest, D.A. (1973) Beryllium. In: Bailar, J.C., Jr, Emeléus, H.J., Nyholm, R. & Trotman-Dickenson, A.F., eds, *Comprehensive Inorganic Chemistry*, Vol. 1, Oxford, Pergamon Press, pp. 531–590

Feingold, L., Savitz, D.A. & John, E.M. (1992) Use of a job–exposure matrix to evaluate parental occupation and childhood cancer. *Cancer Causes Control*, **3**, 161–169

Feldman, I., Havill, J.R. & Neuman, W.F. (1953) The state of beryllium in blood plasma. *Arch. Biochem. Biophys.*, **46**, 443–453

Finch, G.L., Verburg, R.J., Mewhinney, J.A., Eidson, A.F. & Hoover, M.D. (1988) The effect of beryllium compound solubility on in vitro canine alveolar macrophage cytotoxicity. *Toxicol. Lett.*, **41**, 97–105

Finch, G.L., Mewhinney, J.A., Hoover, M.D., Eidson, A.F., Haley, P.J. & Bice, D.E. (1990) Clearance, translocation, and excretion of beryllium following acute inhalation of beryllium oxide by beagle dogs. *Fundam. appl. Toxicol.*, **15**, 231–241

Fluka Chemie AG (1993) *Fluka Chemika-BioChemika*, Buchs, p. 175

Fodor, I. (1977) Histogenesis of beryllium-induced bone tumours. *Acta morphol. acad. sci. hung.*, **25**, 99–105

Freiman, D.G. & Hardy, H.L. (1970) Beryllium disease. The relation of pulmonary pathology to clinical course and prognosis based on a study of 130 cases from the US Beryllium Case Registry. *Hum. Pathol.*, **1**, 25–44

Furchner, J.E., Richmond, C.R. & London, J.E. (1973) Comparative metabolism of radionuclides in mammals. VIII. Retention of beryllium in the mouse, rat, monkey and dog. *Health Phys.*, **24**, 293–300

Gardner, L.U. & Heslington, H.F. (1946) Osteosarcoma from intravenous beryllium compounds in rabbits (Abstract). *Fed. Proc.*, **5**, 221

Gilles, D. (1976) *Health Hazard Evaluation Determination. Hardric Laboratories, Waltham, Massachusetts* (NIOSH Report No. HEE-76-103-349), Cincinnati, OH, National Institute for Occupational Safety and Health

Gosink, T.A. (1976) Gas chromatographic analysis of beryllium in the marine system. Interference, efficiency, apparent biological discrimination and some results. *Marine Sci. Commun.*, **2**, 183–199

Grewal, D.S. & Kearns, F.X. (1977) A simple and rapid determination of small amounts of beryllium in urine by flameless atomic absorption. *At. Absorpt. Newsl.*, **16**, 131–132

Groth, D.H., Kommineni, C. & MacKay, G.R. (1980) Carcinogenicity of beryllium hydroxide and alloys. *Environ. Res.*, **21**, 63–84

Gunter, B.J. & Thoburn, T.W. (1986) *Health Hazard Evaluation Report. Rockwell International, Rocky Flats Plant, Golden, Colorado* (NIOSH Report No. 84-510-1691), Cincinnati, OH, National Institute for Occupational Safety and Health

Guyatt, B.L., Kay, H.D. & Branion, H.D. (1933) Beryllium 'rickets'. *J. Nutr.*, **6**, 313–324

Haley, P.J. (1991) Mechanisms of granulomatous lung disease from inhaled beryllium: the role of antigenicity in granuloma formation. *Toxicol. Pathol.*, **19**, 514–525

Haley, P.J., Finch, G.L., Mewhinney, J.A., Harmsen, A.G., Hahn, F.F., Hoover, M.D., Muggenburg, B.A. & Bice, D.E. (1989) A canine model of beryllium-induced granulomatous lung disease. *Lab. Invest.*, **61**, 219–227

Haley, P.J., Finch, G.L., Hoover, M.D. & Cuddihy, R.G. (1990) The acute toxicity of inhaled beryllium metal in rats. *Fundam. appl. Toxicol.*, **15**, 767–778

Hamel, E., Lin, C.M., Kenney, S. & Skehan, P. (1991) Highly variable effects of beryllium and beryllium fluoride on tubulin polymerization under different reaction conditions: comparison of assembly reactions dependent on microtubule-associated proteins, glycerol, dimethyl sulfoxide, and glutamate. *Arch. Biochem. Biophys.*, **286**, 57–69

Hamel, E., Lin, C.M., Kenney, S., Skehan, P. & Vaughns, J. (1992) Modulation of tubulin-nucleotide interactions by metal ions: comparison of beryllium with magnesium and initial studies with other cations. *Arch. Biochem. Biophys.*, **295**, 327–339

Hamilton, E.I. & Minsky, M.J. (1973) Abundance of the chemical elements in man's diet and possible relations with environmental factors. *Sci. total Environ.*, **1**, 375–394

Hanifin, J.M., Epstein, W.L. & Cline, M.J. (1970) In vitro studies of granulomatous hypersensitivity to beryllium. *J. invest. Dermatol.*, **55**, 284–288

Hardy, H.L. (1965) Beryllium poisoning. Lessons in control of man-made disease. *New Engl. J. Med.*, **273**, 1188–1199

Hardy, H.L. & Tabershaw, I.R. (1946) Delayed chemical pneumonitis occurring in workers exposed to beryllium compounds. *J. ind. Hyg. Toxicol.*, **28**, 197–211

Hardy, H.L. & Tepper, L.B. (1959) Beryllium disease. A review of current knowledge. *J. occup. Med.*, **1**, 219–224

Hardy, H.L., Rabe, E.W. & Lorch, S. (1967) United States Beryllium Case Registry (1952–1966). Review of its methods and utility. *J. occup. Med.*, **9**, 271–276

Henderson, W.R., Fukuyama, K., Epstein, W.L. & Spitler, L.E. (1972) In vitro demonstration of delayed hypersensitivity in patients with berylliosis. *J. invest. Dermatol.*, **58**, 5–8

Hinds, M.W., Kolonel, L.N. & Lee, J. (1985) Application of a job–exposure matrix to a case–control study of lung cancer. *J. natl Cancer Inst.*, **75**, 193-197

Hiruma, T. (1991) Rabbit osteosarcoma induced by hydroxypropylcellulose mixed beryllium oxide pellet—comparison between implantations into the bone marrow cavity and into fracture callus of the femur (Jpn.). *Nippon Seikeigeka Gakkai Zasshi* [J. Jpn. Orthop. Assoc.], **65**, 775–786

Hoagland, M.B., Grier, R.S. & Hood, M.B. (1950) Beryllium and growth. I. Beryllium-induced osteogenic sarcomata. *Cancer Res.*, **10**, 629–635

Hoar, S.K., Morrison, A.S., Cole, P. & Silverman, D.T. (1980) An occupation and exposure linkage system for the study of occupational carcinogenesis. *J. occup. Med.*, **22**, 722–726

Huang, H., Meyer, K.C., Kubai, L. & Auerbach, R. (1992) An immune model of beryllium-induced pulmonary granulomata in mice. Histopathology, immune reactivity and flow-cytometric analysis of bronchoalveolar lavage-derived cells. *Lab. Invest.*, **67**, 138–146

IARC (1972) *IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man*, Vol. 1, *Some Inorganic Substances, Chlorinated Hydrocarbons, Aromatic Amines,* N-*Nitroso Compounds and Natural Products*, Lyon, pp. 17–28

IARC (1980) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans*, Vol. 23, *Some Metals and Metallic Compounds*, Lyon, pp. 143–204

IARC (1987a) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Suppl. 7, *Overall Evaluations of Carcinogenicity: An Updating of* IARC Monographs *Volumes 1 to 42*, Lyon, pp. 127–128

IARC (1987b) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Suppl. 7, *Overall Evaluations of Carcinogenicity: An Updating of* IARC Monographs *Volumes 1 to 42*, Lyon, pp. 139–142

IARC (1987c) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Suppl. 7, *Overall Evaluations of Carcinogenicity: An Updating of* IARC Monographs *Volumes 1 to 42*, Lyon, pp. 230–232

IARC (1987d) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Suppl. 7, *Overall Evaluations of Carcinogenicity: An Updating of* IARC Monographs *Volumes 1 to 42*, Lyon, pp. 341–343

IARC (1990a) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 49, *Chromium, Nickel and Welding*, Lyon, pp. 49–256

IARC (1990b) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 49, *Chromium, Nickel and Welding*, Lyon, pp. 257–445

IARC (1991) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 52, *Chlorinated Drinking-water; Chlorination By-products; Some Other Halogenated Compounds; Cobalt and Cobalt Compounds*, Lyon, pp. 363–472

Ikebe, K., Tanaka, R., Kuzuhara, Y., Suenaga, S. & Takabatake, E. (1986) Studies on the behavior of beryllium in environment. Behavior of beryllium and strontium in atmospheric air (Jpn.). *Eisei Kagaku*, **32**, 159–166

Infante, P.F., Wagoner, J.K. & Sprince, N.L. (1980) Mortality patterns from lung cancer and nonneoplastic respiratory disease among white males in the Beryllium Case Registry. *Environ. Res.*, **21**, 35–43

Institut National de Recherche et de Sécurité [National Institute of Research and Safety] (1990) *Valeurs Limites pour les Concentrations de Substances Dangereuses dans l'Air des Lieux de Travail* [Limit Values for Concentrations of Dangerous Substances in the Air of Work Places] (DN 1609-125-90), Paris, p. 572

International Labour Office (1991) *Occupational Exposure Limits for Airborne Toxic Substances: Values of Selected Countries* (Occupational Safety and Health Series No. 37), 3rd Ed., Geneva, pp. 46–47

Ishinishi, N., Mizunoe, M., Inamasu, T. & Hisanaga, A. (1980) Experimental study on carcinogenicity of beryllium oxide and arsenic trioxide to the lung of rats by an intratracheal instillation (Jpn.). *Fukuoka Igaku Zasshi*, **71**, 19–26

Izmerov, N.F., ed. (1985) *Beryllium* (Scientific Reviews of Soviet Literature on Toxicity and Hazards of Chemicals Series), Geneva, International Register of Potentially Toxic Chemicals, Moscow, Centre of International Projects

Janes, J.M., Higgins, G.M. & Herrick, J.F. (1954) Beryllium-induced osteogenic sarcoma in rabbits. *J. Bone Jt Surg.*, **36B**, 543–552

Jones Williams, W. (1977) Beryllium disease—pathology and diagnosis. *J. Soc. occup. Med.*, **27**, 93–96

Jones Williams, W., Fry, E. & James, E.M.V. (1972) The fine structure of beryllium granulomas. *Acta pathol. microbiol. scand., Sect. A.80*, **Suppl. 233**, 195–202

Kada, T., Hirano, K. & Shirasu, Y. (1980) Screening of environmental chemical mutagens by the rec-assay system with *Bacillus subtilis*. In: de Serres, F.J. & Hollaender, A., eds, *Chemical Mutagens. Principles and Methods for Their Detection*, Vol. 6, New York, Plenum, pp. 149–173

Kanarek, D.J., Wainer, R.A., Chamberlin, R.I., Weber, A.L. & Kazeni, H. (1973) Respiratory illness in a population exposed to beryllium. *Am. Rev. respir. Dis.*, **108**, 1295–1302

Karkinen-Jääskeläinen, M., Määttä, K., Pasila, M. & Saxén, L. (1982) Pulmonary berylliosis: report on a fatal case. *Br. J. Dis. Chest*, **76**, 290–297

Kawecki Berylco Industries (1968) *Product Specifications: Beryllium Chemical Compounds* (File 401 1-SP1), New York

KBAlloys (1985) *KBI® Aluminum Master Alloys: KBI® Aluminum Beryllium (MA-PD 6)*, Reading, PA

Kelly, P.J., Janes, J.M. & Peterson, L.F.A. (1961) The effect of beryllium on bone. A morphological study of the progressive changes observed in rabbit bone. *J. Bone Jt Surg.*, **43A**, 829–844

Kleinman, M.T., Rhodes, J.R., Guinn, V.P. & Thompson, R.J. (1989a) 822. General atomic absorption procedure for trace metals in airborne material collected on filters. In: Lodge, J.P., Jr, ed., *Methods of Air Sampling and Analysis*, 3rd Ed., Chelsea, MI, Lewis Publishers, pp. 608–618

Kleinman, M.T., Courtney, W.J., Guinn, V.P., Rains, T.C., Rhodes, J.R. & Thompson, R.J. (1989b) 822A. General method for preparation of tissue samples for analysis for trace metals. In: Lodge, J.P., Jr, ed., *Methods of Air Sampling and Analysis*, 3rd Ed., Chelsea, MI, Lewis Publishers, pp. 619–622

Klemperer, F.W., Martin, A.P. & Liddy, R.E. (1952) The fate of beryllium compounds in the rat. *Arch. Biochem. Biophys.*, **41**, 148–152

Kline, E.M., Inkley, S.R. & Pritchard, W.H. (1951) Five cases from the fluorescent lamp industry. Treatment of chronic beryllium poisoning with ACTH (adrenocorticotrophic hormone) and cortisone. *Arch. ind. Hyg. occup. Med.*, **3**, 549–564

Komitowski, D. (1968) Experimental beryllium-induced bone tumours as a model of osteogenic sarcoma (Pol.). *Chir. Narzad. Ruchu Ortop. Pols.*, **33**, 237–242

Komitowski, D. (1974) Beryllium-induced bone sarcomas (Ger.). *Verh. dtsch. Ges. Pathol.*, **58**, 438–440

Kramer, D.A. (1985a) Beryllium. In: *Minerals Yearbook 1984*, Vol. 1, *Metals and Minerals*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 153–157

Kramer, D.A. (1985b) Beryllium. In: *Mineral Commodity Summaries 1985*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 18–19

Kramer, D.A. (1987) Beryllium. In: *Mineral Commodity Summaries 1987*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 20–21

Kramer, D.A. (1990) Beryllium. In: *Mineral Commodity Summaries 1990*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 30–31

Kramer, D.A. (1991a) *Annual Report: Beryllium 1990*, Washington DC, Bureau of Mines, US Department of the Interior

Kramer, D.A. (1991b) Beryllium. In: *Mineral Commodity Summaries 1991*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 24–25

Kramer, D.A. (1992a) *Annual Report: Beryllium 1991*, Washington DC, Bureau of Mines, US Department of the Interior

Kramer, D.A. (1992b) Beryllium. In: *Mineral Commodity Summaries 1992*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 34–35

Kreiss, K., Newman, L.S., Mroz, M.M. & Campbell, P.A. (1989) Screening blood test identifies subclinical beryllium disease. *J. occup. Med.*, **31**, 603–608

Kriebel, D., Sprince, N.L., Eisen, E.A. & Greaves, I.A. (1988a) Pulmonary function in beryllium workers: assessment of exposure. *Br. J. ind. Med.*, **45**, 83–92

Kriebel, D., Brain, J.D., Sprince, N.L. & Kazemi, H. (1988b) The pulmonary toxicity of beryllium. *Am. Rev. respir. Dis.*, **137**, 464–473

Kubinski, H., Zeldin, P.E. & Morin, N.R. (1977) Survey of tumor-producing agents for their ability to induce macromolecular complexes (Abstract No. 61). *Proc. Am. Assoc. Cancer Res.*, **18**, 16

Kuroda, K., Endo, G., Okamoto, A., Yo, Y.S. & Horiguchi, S.-I. (1991) Genotoxicity of beryllium, gallium and antimony in short-term assays. *Mutat. Res.*, **264**, 163–170

Larramendy, M.L., Popescu, N.C. & DiPaolo, J.A. (1981) Induction by inorganic metal salts of sister chromatid exchanges and chromosome aberrations in human and Syrian hamster cell strains. *Environ. Mutag.*, **3**, 597–606

Laskin, S., Turner, R.A.N. & Stokinger, H.E. (1950) An analysis of dust and fume hazards in a beryllium plant. In: Vorwald, A.J., ed., *Pneumoconiosis. Beryllium, Bauxite Fumes Compensation*, New York, Paul B. Hoeber, pp. 360–386

Levi-Setti, R., Berry, J.-P., Chabala, J.M. & Galle, P. (1988) Selective intracellular beryllium localization in rat tissue by mass-resolved ion microprobe imaging. *Biol. Cell.*, **63**, 77–82

Lewis, F.A. (1980) *Health Hazard Evaluation Determination Report. Bertoia Studio, Bally, Pennsylvania* (NIOSH Report No. HE-79-78-655), Cincinnati, OH, National Institute for Occupational Safety and Health

Lewis, R.E. (1988) Aluminum alloys: beryllium as alloying element. In: Cahn, R.W., ed., *Encyclopedia of Materials Science and Engineering*, Suppl. vol. 1, Cambridge, MA, MIT Press, pp. 9–14

Lide, D.R., ed. (1991) *CRC Handbook of Chemistry and Physics*, 72nd Ed., Boca Raton, FL, CRC Press, pp. 4-43–4-44

Lieben, J., Dattoli, J.A. & Israel, H.L. (1964) Probable berylliosis from beryllium alloys. *Arch. environ. Health*, **9**, 473–477

Litvinov, N.N., Kazenashev, V.F. & Bugryshev, P.F. (1983) Blastomogenic activities of various beryllium compounds (Russ.). *Eksp. Onkol.*, **5**, 23–26

Litvinov, N.N., Popov, V.A., Vorozheikina, T.V., Kazenashev, V.F. & Bugryshev, P.F. (1984) Materials to specify MAC for beryllium in the work environment (Russ.). *Gig. Tr. prof. Sanit. Zabol.*, **1**, 34–37

Livey, D.T. (1986) Beryllium oxide. In: Bever, M.B., ed., *Encyclopedia of Materials Science and Engineering*, Vol. 1, Cambridge, MA, MIT Press, pp. 297–298

Love, J.R. & Donohue, M.T. (1983) *Health Hazard Evaluation Report: International Brotherhood of Painters and Allied Trades, Electric Boat Division of General Dynamics Corporation, Groton, CI* (NIOSH Report No. HETA-78-135-1333), Cincinnati, OH, National Insitute for Occupational Safety and Health

Luke, M.Z., Hamilton, L. & Hollocher, T.C. (1975) Beryllium-induced misincorporation by a DNA polymerase: a possible factor in beryllium toxicity. *Biochem. biophys. Res. Commun.*, **62**, 497–501

Mancuso, T.F. (1970) Relation of duration of employment and prior respiratory illness to respiratory cancer among beryllium workers. *Environ Res.*, **3**, 251–275

Mancuso, T.F. (1979) Occupational lung cancer among beryllium workers. In: Lemen, R. & Dement, J., eds, *Dusts and Disease*, Park Forest, IL, Pathotox Publishers, pp. 463–471

Mancuso, T.F. (1980) Mortality study of beryllium industry workers' occupational lung cancer. *Environ. Res.*, **21**, 48–55

Mancuso, T.F. & El-Attar, A.A. (1969) Epidemiological study of the beryllium industry. Cohort methodology and mortality studies. *J. occup. Med.*, **11**, 422–434

Marcotte, J. & Witschi, H.P. (1972) Synthesis of RNA and nuclear proteins in early regenerating rat livers exposed to beryllium. *Res. Commun. chem. Pathol. Pharmacol.*, **3**, 97–104

Marx, J.J., Jr & Burrell, R. (1973) Delayed hypersensitivity to beryllium compounds. *J. Immunol.*, **111**, 590–598

Mathur, R., Sharma, S., Mathur, S. & Prakash, A.O. (1987) Effect of beryllium nitrate on early and late pregnancy in rats. *Bull. environ. Contam. Toxicol.*, **38**, 73–77

Matsuura, K. (1974) Experimental studies on the production of osteosarcoma by beryllium compounds, and the effects of irradiation (Jpn.). *Jpn. J. Orthop. Assoc.*, **48**, 403–418

Mazabraud, A. (1975) Experimental production of osteosarcomas in rabbits by single local injection of beryllium (Fr.). *Bull. Cancer*, **62**, 49–58

Measures, C.I. & Edmond, J.M. (1982) Beryllium in the water column of the central North Pacific. *Nature*, **297**, 51–53

Meehan, W.R. & Smythe, L.E. (1967) Occurrence of beryllium as a trace element in environmental materials. *Environ. Sci. Technol.*, **1**, 839–844

Mellor, J.W. (1946) *A Comprehensive Treatise on Inorganic and Theoretical Chemistry*, Vol. 4, London, Longmans, Green & Co., pp. 221–248

Merrill, J.R., Lyden, E.F.X, Honda, M. & Arnold, J.R. (1960) The sedimentary geochemistry of the beryllium isotopes. *Geochim. cosmochim. Acta*, **18**, 108–129

Minkwitz, R., Fröhlich, N. & Lehmann, E. (1983) *Untersuchungen von Schadstoffbelastungen an Arbeitsplätzen bei der Herstellung und Verarbeitung von Metallen: Beryllium, Cobalt und deren Legierungen* [Examination of Charges of Harmful Substances at Work Place during the Production and Processing of Metals: Beryllium, Cobalt and Their Alloys] (Forschungsbericht No. 367), Dortmund, Bundesanstalt für Arbeitsschutz

Minoia, C., Sabbioni, E., Apostoli, P., Pietra, R., Pozzoli, L., Gallorini, M., Nicolaou, G., Alessio, L. & Capodaglio, E. (1990) Trace element reference values in tissues from inhabitants of the European Community. I. A study of 46 elements in urine, blood and serum of Italian subjects. *Sci. total Environ.*, **95**, 89–105

Miyaki, M., Akamatsu, N., Ono, T. & Koyama, H. (1979) Mutagenicity of metal cations in cultured cells from Chinese hamster. *Mutat. Res.*, **68**, 259–263

Müller, J. (1979) Beryllium, cobalt, chromium and nickel in particulate matter of ambient air. In: *Proceedings of the International Conference on Heavy Metals in the Environment, London, September 1979*, Edinburgh, CEP Consultants Ltd, pp. 300–303

Mullen, A.L., Stanley, R.E., Lloyd, S.R. & Moghissi, A.A. (1972) Radioberyllium metabolism by the dairy cow. *Health Phys.*, **22**, 17–22

Nesnow, S., Triplett, L.L. & Slaga, T.J. (1985) Studies on the tumor initiating, tumor promoting, and tumor co-initiating properties of respiratory carcinogens. In: Mass, M.J., Kaufman, D.G., Siegfried, J.M., Steele, V.E. & Nesnow, S., eds, *Carcinogenesis*, Vol. 8, New York, Raven Press, pp. 257–277

Newland, L.W. (1984) Arsenic, beryllium, selenium and vanadium. In: Hutzinger, O., ed., *The Handbook of Environmental Chemistry*, Vol. 3, Part B, *Anthropogenic Compounds*, New York, Springer-Verlag, pp. 27–67

Newman, L.S. & Campbell, P.A. (1987) Mitogenic effect of beryllium sulfate on mouse B lymphocytes but not T lymphocytes *in vitro*. *Int. Arch. Allergy appl. Immunol.*, **84**, 223–227

Newman, L.S., Kreiss, K., King, T.E., Jr, Seay, S. & Campbell, P.A. (1989) Pathologic and immunologic alterations in early stages of beryllium disease. Re-examination of disease definition and natural history. *Am. Rev. respir. Dis.*, **139**, 1479–1486

Nishioka, H. (1975) Mutagenic activities of metal compounds in bacteria. *Mutat. Res.*, **31**, 185–189

Ogawa, H.I., Tsuruta, S., Niyitani, Y., Mino, H., Sakata, K. & Kato, Y. (1987) Mutagenicity of metal salts in combination with 9-aminoacridine in *Salmonella typhimurium*. *Jpn. J. Genet.*, **62**, 159–162

Parker, V.H. & Stevens, C. (1979) Binding of beryllium to nuclear acidic proteins. *Chem.-biol. Interactions*, **26**, 167–177

Paschal, D.C. & Bailey, G.G. (1986) Determination of beryllium in urine with electrothermal atomic absorption using the L'vov platform and matrix modification. *At. Spectrosc.*, **7**, 1–3

Paton, G.R. & Allison, A.C. (1972) Chromosome damage in human cell cultures induced by metal salts. *Mutat. Res.*, **16**, 332–336

Petkof, B. (1982) Beryllium. In: *Mineral Yearbook 1981*, Vol. 1, *Metals and Minerals*, Washington DC, Bureau of Mines, US Department of the Interior, pp. 137–140

Petzow, G., Fritz Aldinger, W.C., Jönsson, S. & Preuss, O.P. (1985) Beryllium and beryllium compounds. In: Gerhartz, W., Yamamoto, Y.S., Campbell, F.T., Pfefferkorn, R. & Rounsaville, J.F., eds, *Ullmann's Encyclopedia of Industrial Chemistry*, 5th ed., Vol. A4, Weinheim, VCH Verlagsgesellschaft, pp. 11–33

Pienta, R.J., Poiley, J.A. & Lebherz, W.B., III (1977) Morphological transformation of early passage golden Syrian hamster embryo cells derived from cryopreserved primary cultures as a reliable in vitro bioassay for identifying diverse carcinogens. *Int. J. Cancer*, **19**, 642–655

Powers, M.B. (1991) History of beryllium. In: Rossman, M.D., Preuss, O.P. & Powers, M.B., eds, *Beryllium. Biomedical and Environmental Aspects*, Baltimore, Williams & Wilkins, pp. 9–24

Preuss, O.P. (1988) Beryllium. In: Zenz, C., ed., *Occupational Medicine: Principles and Practical Applications*, Chicago, IL, Year Book Medical Publishers, pp. 517–525

Price, R.J. & Skilleter, D.N. (1985) Stimulatory and cytotoxic effects of beryllium on proliferation of mouse spleen lymphocytes *in vitro*. *Arch. Toxicol.*, **56**, 207–211

Reeves, A.L. (1986) Beryllium. In: Friberg, L., Nordberg, G.F. & Vouk, V.B., eds, *Handbook of the Toxicology of Metals*, Vol. 2, *Specific Metals*, 2nd Ed., Amsterdam, Elsevier, pp. 95–116

Reeves, A.L. (1989) Beryllium: toxicological research of the last decade. *J. Am. Coll. Toxicol.*, **8**, 1307–1313

Reeves, A.L. & Vorwald, A.J. (1961) The hormonal transport of beryllium. *J. occup. Med.*, **3**, 567–574

Reeves, A.L. & Vorwald, A.J. (1967) Beryllium carcinogenesis. II. Pulmonary deposition and clearance of inhaled beryllium sulfate in the rat. *Cancer Res.*, **27**, 446–451

Reeves, A.L., Deitch, D. & Vorwald, A.J. (1967) Beryllium carcinogenesis. I. Inhalation exposure of rats to beryllium sulfate aerosol. *Cancer Res.*, **27**, 439–445

Reichert, J.K. (1974) Beryllium: a toxic element in the human environment with special regard to its occurrence in water (Ger.). *Wasser*, **41**, 209–216

Rhoads, K. & Sanders, C.L. (1985) Lung clearance, translocation, and acute toxicity of arsenic, beryllium, cadmium, cobalt, lead, selenium, vanadium and ytterbium oxides following deposition in rat lung. *Environ. Res.*, **36**, 359–378

Rosenkranz, H.S. & Poirier, L.A. (1979) Evaluation of the mutagenicity and DNA-modifying activity of carcinogens and noncarcinogens in microbial systems. *J. natl Cancer Inst.*, **62**, 873–892

Rossman, T.G. & Molina, M. (1986) The genetic toxicology of metal compounds: II. Enhancement of ultraviolet light-induced mutagenesis in *Escherichia coli* WP2. *Environ. Mutag.*, **8**, 263–271

Rossman, T.G., Molina, M. & Meyer, L.W. (1984) The genetic toxicology of metal compounds: I. Induction of λ prophage in *E. coli* $WP2_s(\lambda)$. *Environ. Mutag.*, **6**, 59–69

Rossman, T.G., Zelikoff, J.T., Agarwal, S. & Kneip, T.J. (1987) Genetic toxicology of metal compounds: an examination of appropriate cellular models. *Toxicol. environ. Chem.*, **14**, 251–262

Rossman, M.D., Kern, J.A., Elias, J.A., Cullen, M.R., Epstein, P.E., Preuss, O.P., Markham, T.N. & Daniele, R.P. (1988) Proliferative response of bronchoalveolar lymphocytes to beryllium. A test for chronic beryllium disease. *Ann. intern. Med.*, **108**, 687–693

Rössner, P. & Bencko, V. (1980) Beryllium toxicity testing in the suspension culture of mouse fibroblasts. *J. Hyg. Epidemiol. Microbiol. Immunol.*, **24**, 150–155

Safe Drinking Water Committee (1977) *Drinking Water and Health*, Washington DC, National Research Council, National Academy of Science, pp. 211, 231–232

Saltini, C., Winestock, K., Kirby, M., Pinkston, P. & Crystal, R.G. (1989) Maintenance of alveolitis in patients with chronic beryllium disease by beryllium-specific helper T cells. *New Engl. J. Med.*, **320**, 1103–1109

Sanders, C.L., Cannon, W.C., Powers, G.J., Adee, R.R. & Meier, D.M. (1975) Toxicology of high-fired beryllium oxide inhaled by rodents. I. Metabolism and early effects. *Arch. environ. Health*, **30**, 546–551

Saracci, R. (1985) Beryllium: epidemiological evidence. In: Wald, N.J. & Doll, R., eds, *Interpretation of Negative Epidemiological Evidence for Carcinogenicity* (IARC Scientific Publications No. 65), Lyon, IARC, pp. 203–219

Sauer, C. & Lieser, K.H. (1986) Determination of trace elements in raw water and in drinking-water (Ger.). *Wasser*, **66**, 277–284

Savitz, D.A., Whelan, E.A. & Kleckner, R.C. (1989) Effects of parents' occupational exposures on risk of stillbirth, preterm delivery, and small-for-gestational-age infants. *Am. J. Epidemiol.*, **129**, 1201–1218

Sax, N.I. & Lewis, R.J. (1987) *Hawley's Condensed Chemical Dictionary*, 11th ed., New York, Van Nostrand Reinhold, pp. 140–142

Schepers, G.W.H., Durkan, T.M., Delehant, A.B. & Creedon, F.T. (1957) The biological action of inhaled beryllium sulfate. A preliminary chronic toxicity study in rats. *Arch. ind. Health*, **15**, 32–58

Schroeder, H.A. & Mitchener, M. (1975) Life-term studies in rats: effects of aluminum, barium, beryllium and tungsten. *J. Nutr.*, **105**, 421–427

Schulert, A.R., Glasser, S.R., Stant, E.G., Jr, Brill, A.B., Koshakji, R.P. & Mansour, M.M. (1969) *Development of Placental Discrimination among Homologous Elements* (Atomic Energy Commission Symposium Series 17), pp. 145–152

Scott, J.K., Neuman, W.F. & Allen, R. (1950) The effect of added carrier on the distribution and excretion of soluble ^{7}Be. *J. biol. Chem.*, **182**, 291-298

Sendelbach, L.E., Witschi, H.P. & Tryka, A.F. (1986) Acute pulmonary toxicity of beryllium sulfate inhalation in rats and mice: cell kinetics and histopathology. *Toxicol. appl. Pharmacol.*, **85**, 248–256

Sendelbach, L.E., Tryka, A.F. & Witschi, H. (1989) Progressive lung injury over a one-year period after a single inhalation exposure to beryllium sulfate. *Am. Rev. respir. Dis.*, **139**, 1003–1009

Shacklette, H.T., Hamilton, J.L., Boerngen, J.G. & Bowles, J.M. (1971) *Elemental Composition of Surficial Materials in the Conterminous United States* (US Geological Survey, Professional Paper 574-D), Washington DC, US Government Printing Office

Simmon, V.F. (1979a) In vitro mutagenicity assays of chemical carcinogens and related compounds with *Salmonella typhimurium*. *J. natl Cancer Inst.*, **63**, 893–899

Simmon, V.F. (1979b) In vitro assays for recombinogenic activity of chemical carcinogens and related compounds with *Saccharomyces cerevisiae* D3. *J. natl Cancer Inst.*, **62**, 901–909

Simmon, V.F., Rosenkranz, H.S., Zeiger, E. & Poirier, L.A. (1979) Mutagenic activity of chemical carcinogens and related compounds in the intraperitoneal host-mediated assay. *J. natl Cancer Inst.*, **62**, 911–918

Sirover, M.A. & Loeb, L.A. (1976) Metal-induced infidelity during DNA synthesis. *Proc. natl Acad. Sci. USA*, **73**, 2331–2335

Sissons, H.A. (1950) Bone sarcomas produced experimentally in the rabbit, using compounds of beryllium. *Acta unio int. contra cancrum*, **7**, 171–172

Skilleter, D.N. (1984) Biochemical properties of beryllium potentially relevant to its carcinogenicity. *Toxicol. environ. Chem.*, **7**, 213–228

Skilleter, D.N. (1986) Selective cellular and molecular effects of beryllium on lymphocytes. *Toxicol. environ. Chem.*, **11**, 301–312

Skilleter, D.N. & Legg, R.F. (1989) Inhibition of epidermal growth factor-stimulated hepatocyte proliferation by the metallocarcinogen beryllium. *Biochem. Soc. Transact.*, **17**, 1040–1041

Skilleter, D.N. & Price, R.J. (1978) The uptake and subsequent loss of beryllium by rat liver parenchymal and non-parenchymal cells after the intravenous administration of particulate and soluble forms. *Chem.-biol. Interactions*, **20**, 383–396

Skilleter, D.N. & Price, R.J. (1984) Lymphocyte beryllium binding: relationship to development of delayed beryllium sensitivity. *Int. Arch. Allergy appl. Immunol.*, **73**, 181–183

Smugeresky, J.E. (1986) Beryllium and beryllium alloys. In: Bever, M.B., ed., *Encyclopedia of Materials Science and Engineering*, Vol. 1, Cambridge, MA, MIT Press, pp. 289–294

Sprince, N.L. & Kazemi, H. (1980) US Beryllium Case Registry through 1977. *Environ. Res.*, **21**, 44–47

Sprince, N.L. Kazemi, H. & Hardy, H.L. (1976) Current (1975) problem of differentiating between beryllium disease and sarcoidosis. *Ann. N.Y. Acad. Sci.*, **278**, 654–664

Sprince, N.L., Kanarek, D.J., Weber, A.L., Chamberlin, R.I. & Kazemi, H. (1978) Reversible respiratory disease in beryllium workers. *Am. Rev. respir. Dis.*, **117**, 1011–1017

Steele, V.E., Wilkinson, B.P., Arnold, J.T. & Kutzman, R.S. (1989) Study of beryllium oxide genotoxicity in cultured respiratory epithelial cells. *Inhal. Toxicol.*, **1**, 95–110

Steenland, K. & Ward, E. (1991) Lung cancer incidence among patients with beryllium disease: a cohort mortality study. *J. natl Cancer Inst.*, **83**, 1380–1385

Sterner, J.H. & Eisenbud, M. (1951) Epidemiology of beryllium intoxication. *Arch. ind. Hyg. occup. Med.*, **4**, 123–151

Stiefel, T., Schulze, K., Zorn, H. & Tölg, G. (1980) Toxicokinetic and toxicodynamic studies of beryllium. *Arch. Toxicol.*, **45**, 81–92

Stoeckle, J.D., Hardy, H.L. & Weber, A.L. (1969) Chronic beryllium disease. Long-term follow-up of sixty cases and selective review of the literature. *Am. J. Med.*, **46**, 545–561

Stonehouse, A.J. & Zenczak, S. (1991) Properties, production, processes, and applications. In: Rossman, M.D., Preuss, O.P. & Powers, M.B., eds, *Beryllium. Biomedical and Environmental Aspects*, Baltimore, Williams & Wilkins, pp. 27–55

Strem Chemicals (1992) *Catalog No. 14—Metals, Inorganics and Organometallics for Research*, Newburyport, MA, pp. 18–19

Sussmann, V.H., Lieben, J. & Cleland, J.G. (1959) An air pollution study of a community surrounding a beryllium plant. *Ind. Hyg. J.*, **20**, 504–508

Tapp, E. (1966) Beryllium induced sarcomas in the rabbit tibia. *Br. J. Cancer*, **20**, 778–783

Tapp, E. (1969) Osteogenic sarcoma in rabbits following subperiosteal implantation of beryllium. *Arch. Pathol.*, **88**, 89–95

Truhaut, R., Festy, B. & Le Talaer, J.-Y. (1968) Interaction of beryllium with DNA and its effect on some enzymatic systems (Fr.). *C.R. Acad. Sci. Paris Ser. D*, **266**, 1192–1195

Tso, W.-W. & Fung, W.-P. (1981) Mutagenicity of metallic cation. *Toxicol. Lett.*, **8**, 195–200

UNEP (1993) *IRPTC PC Data Base*, Geneva

US Environmental Protection Agency (1986a) Method 6010. Inductively coupled plasma atomic emission spectroscopy. In: *Test Methods for Evaluating Solid Waste—Physical/Chemical Methods*, 3rd Ed., Vol. 1A (US EPA No. SW-846), Washington DC, Office of Solid Waste and Emergency Response, pp. 6010-1–6010-17

US Environmental Protection Agency (1986b) Method 7090. Beryllium (atomic absorption, direct aspiration). In: *Test Methods for Evaluating Solid Waste—Physical/Chemical Methods*, 3rd Ed., Vol. 1A (US EPA No. SW-846), Washington DC, Office of Solid Waste and Emergency Response, pp. 7090-1–7090-3

US Environmental Protection Agency (1986c) Method 7091. Beryllium (atomic absorption, furnace technique). In: *Test Methods for Evaluating Solid Waste—Physical/Chemical Methods*, 3rd ed., Vol. 1A (US EPA No. SW-846), Washington DC, Office of Solid Waste and Emergency Response, pp. 7091-1–7091-3

US Environmental Protection Agency (1987) *Health Assessment Document for Beryllium* (EPA Report No. 600/8-84-026F), Research Triangle Park, NC, Office of Research and Development

US Environmental Protection Agency (1992) National emission standard for beryllium. *US Code fed. Regul.*, **Title 40**, Subpart C, Sections 61.30–61.44, pp. 23–26

US National Institute for Occupational Safety and Health (1972) *Criteria Document: Recommendations for an Occupational Exposure Standard for Beryllium* (NIOSH Report No. Tr-003-72; HSM 72-10268), Rockville, MD

US National Institute for Occupational Safety and Health (1990) *NIOSH Pocket Guide to Chemical Hazards* (DHHS (NIOSH) Publication No. 90-117), Cincinnati, OH, pp. 46–47

US National Library of Medicine (1992) *Hazardous Substances Data Bank* (HSDB), Bethesda, MD

US Occupational Safety and Health Administration (1989) Air contaminants—permissible exposure limits. *US Code fed. Regul.*, **Title 29**, Part 1910.1000, p. 599

Vacher, J. & Stoner, H.B. (1968) The transport of beryllium in rat blood. *Biochem. Pharmacol.*, **17**, 93–107

Vacher, J., Deraedt, R. & Benzoni, J. (1974) Role of the reticuloendothelial system in the production of α-macrofetoprotein in the rat following intravenous injection of beryllium and other particles. *Toxicol. appl. Pharmacol.*, **28**, 28–37

Vegni Talluri, M. & Guiggiani, V. (1967) Action of beryllium ions on primary cultures of swine cells. *Caryologia*, **20**, 355–367

Vorwald, A.J. (1967) The induction of experimental pulmonary cancer in the primate (Abstract I-07-e). In: Harris, R.J., ed., *Proceedings of the IX International Cancer Congress, Tokyo, 1966*, Berlin, Springer, p. 125

Votto, J.J., Barton, R.W., Gionfriddo, M.A., Cole, S.R., McCormick, J.R. & Thrall, R.S. (1987) A model for pulmonary granulomata induced by beryllium sulfate in the rat. *Sarcoidosis*, **4**, 71–76

Wagner, W.D., Groth, D.H., Holtz, J.L., Madden, G.E. & Stokinger, H.E. (1969) Comparative chronic inhalation toxicity of beryllium ores, bertrandite and beryl, with production of pulmonary tumors by beryl. *Toxicol. appl. Pharmacol.*, **15**, 10–29

Wagoner, J.K., Infante, P.F. & Bayliss, D.L. (1980) Beryllium: an etiologic agent in the induction of lung cancer, nonneoplastic respiratory disease and heart disease among industrially exposed workers. *Environ. Res.*, **21**, 15–34

Walsh, K. & Rees, G.H. (1978) Beryllium compounds. In: Kirk, R.E. & Othmer, D.F., eds, *Encyclopedia of Chemical Technology*, 3rd ed., Vol. 3, New York, John Wiley & Sons, pp. 824–829

Ward, E., Okun, A., Ruder, A., Fingerhut, M. & Steenland, K. (1992) A mortality study of workers at seven beryllium processing plants. *Am. J. ind. Med.*, **22**, 885–904

Weber, H.H. & Engelhardt, W.E. (1933) Apparatus for production of highly constant, low concentrations of dust and a method for microgravimetric analysis of dust. Application to the study of dusts from beryllium production (Ger.). *Zbl. Gewerbehyg.*, **10**, 41–47

WHO (1990) *Beryllium* (Environmental Health Criteria 106), Geneva

Williams, G.M., Laspia, M.F. & Dunkel, V.C. (1982) Reliability of the hepatocyte primary culture/DNA repair test in testing of coded carcinogens and noncarcinogens. *Mutat. Res.*, **97**, 359–370

Witschi, H.P. (1968) Inhibition of deoxyribonucleic acid synthesis in regenerating rat liver by beryllium. *Lab. Invest.*, **19**, 67–70

Witschi, H.P. (1970) Effects of beryllium on deoxyribonucleic acid-synthesizing enzymes in regenerating rat liver. *Biochem. J.*, **120**, 623–634

Witschi, H.P. & Aldridge, W.N. (1968) Uptake, distribution and binding of beryllium to organelles of the rat liver cell. *Biochem. J.*, **106**, 811–820

Wöhler, F. (1828) On beryllium and yttrium (Ger.). *Pogg. Ann.*, **13**, 577–582

Yamaguchi, S. (1963) Study of beryllium-induced osteogenic sarcoma (Jpn.). *Nagasaki Iggakai Zasshi*, **38**, 127–138

Zakour, R.A. & Glickman, B.W. (1984) Metal-induced mutagenesis in the *lacI* gene of *Escherichia coli*. *Mutat. Res.*, **126**, 9–18

Zielinski, J.F. (1961) Seven-year experience summaries of beryllium air pollution in a modern alloy foundry. In: *NIOSH Workshop on Beryllium*, Cincinatti, OH, Kettering Laboratory, University of Cincinnati, pp. 592–600

Zorn, H. & Diem, H. (1974) Importance of beryllium and its compounds in occupational medicine (Ger.). *Zbl. Arbeitsmed.*, **24**, 3–8

Zorn, H., Stiefel, T. & Diem, H. (1977) Importance of beryllium and its compounds in occupational medicine. Part 2 (Ger.). *Zbl. Arbeitsmed.*, **27**, 83–88

Zorn, H., Stiefel, T. & Porcher, H. (1986) Clinical and analytical follow-up of 25 persons exposed accidentally to beryllium. *Toxicol. environ. Chem.*, **12**, 163–171

Zorn, H.R., Stiefel, T.W., Breuers, J. & Schlegelmilch, R. (1988) Beryllium. In: Seiler, H.G. & Sigel, H., eds, *Handbook on Toxicity of Inorganic Compounds*, New York, Marcel Dekker, pp. 105–114