

4.7- REFERENCIAS BIBLIOGRAFICAS

- Amjad, Z. (1987), The influence of polyphosphates, phosphonates and polycarboxylic acids on the cristal growth of hydroxiapatite, *Langmuir* **3**, 1063-1069.
- Anderson, M. A.; Ferguson, J. F.; Gavis, J. (1976), Arsenate adsorption on amorphous aluminum hydroxide, *J. Colloid Interface Sci.* **54**, 391-399.
- Anderson, M. A.; Malotky, D. T. (1979), The adsorption of protolyzable anions on hydrous oxides at the isoelectric pH, *J. Colloid Interface Sci.* **72**, 413-427.
- Atkinson, D. (1985), Toxicological properties of glyphosate- a summary. In: The herbicide glyphosate (Ed Grossbard, E. and Atkinson, D), Butterworths, London, pp 127-133.
- Barja, B. C.; Tejedor-Tejedor, M. I.; Anderson, M. A. (1999), Complexation of methylphosphonic acid with the surface of goethite particles in aqueous suspension, *Langmuir* **15**, 2316-2321.
- Blesa, M. A.; Borghi, E. B.; Maroto, A. J. G.; Regazzoni, A E. (1983), Adsorption of EDTA and Iron-EDTA Complexes on Magnetite and the Mechanism of Dissolution of Magnetite by EDTA, *J. Colloid Interface Sci.* **98**, 295-305.
- Blesa, M. A.; Morando, P. J.; Regazzoni, A E. (1994), Part III: Fundamentals of Metal Oxide Dissolution Mechanisms In: Chemical Dissolution of Metal Oxides, CRC Press, Inc., p. 172.
- Bordas, F.; Bourg, A. C. M: (1998), Effect of complexing agents (EDTA and ATMP) on the remobilization of heavy metals from a polluted river sediment, *Aquat Geochem.* **4**, 201-214.
- Bostick, B. C.; Fendorf, S.; Barnett, M. O.; Jardine, P. M.; Brooks, S. C. (2002), Uranyl Surface Complexes Formed on Subsurface Media from DOE Facilities, *Soil Sci. Soc. Am. J.* **66**, 99-108.
- Bucheli-Witschel, M.; Egli, T. (2001), Enviromental fate and microbial degradation of aminopolycarboxylic acids, *FEMS Microbiol. Rew.* **25**, 69-106.
- CEPIS-Repamar (2000), Impacto ambiental de productos químicos auxiliares usados en la industria textil argentina, Anexo II: secuestrantes (disponible en <http://www.cepis.org.pe>)

- Chirby, D.; Franck, S.; Troutner, D. E. (1988), Adsorption of ^{153}Sn -EDTMP on calcium hydroxiapatite, *Appl. Radiat. Isot.* **39**, 495-499.
- Davenport, B.; De Boo, A.; Dubois, F.; Kishi, A. (2000), CEH Report: Chelating agents. SRI Consulting, Menlo Park, CA, USA.
- de Klerk, J. M. H.; van Dijk, A.; van het Schip, A. D.; Zonnenberg B. A.; van Rijk P. P. (1992), Pharmacokinetics of rhenium-186 after administration of rhenium-186-HEDP to patients with bone metastases, *J. Nucl. Med.* **33**, 646-651.
- Deluchat, V.; Sepaud, B.; Caullet, C.; Bollinger, J. C. (1995), Constantes de protonation et de complexation de l'acide 1-hydroxyethane-1,1'diphosphonique (HEDP) vis-à-vis de cations divalents: étude de complexes peu soluble de HEDP avec Pb(II) et Cd(II), *Phosphorous, Sulfur, and Silicon* **104**, 81-92.
- Deluchat, V.; Bollinger, J-C.; Serpaud, B.; Chaullet, C. (1997), Divalent cations speciation with three phosphonate ligands in the pH-range of natural waters, *Talanta* **44**, 897-907.
- Dubbin, W. E.; Sposito, G.; Zavarin, M. (2000), X-Ray absorption spectroscopic Studio of Cu-glyphosate adsorbed by microcrystalline gibbsite, *Soil Sci.* **165**, 699-707.
- Egli, T. (1988), (An)aerobic breakdown of chelating agents used in household detergents, *Microbiol. Sci.* **5**, 36-41.
- Fischer, K. (1992), Sorption of chelating agents (HEDP and NTA) onto mineral phases and sediments. Part II: sorption onto sediments and sewage sludges., *Chemosphere* **24**, 51-62.
- Fleisch, H. (1989), Bisphosphonates: a new class of drugs in diseases of bones and calcium metabolisms, *Recent. Results Cancer Res.* **116**, 1-28.
- Furrer G.; Stumm W. (1986) The coordination chemistry of weathering: I. Dissolution kinetics of $\delta\text{-Al}_2\text{O}_3$ and BeO, *Geochim. Cosmochim. Acta* **50**, 1847-1860.
- Gerbino, A. J. (1996), Quantifying the retention and release of polyphosphontes in oil and gas producing formations using surface complexation and precipitation theory, Dissertation, Rice University, Texas.
- Gledhill, W. E.; Feijtel, T. C. J. (1992), Enviromental properties and safety assessment of organic phosphonates used for detergent and water treatment applications. In: Hutzinger O(ed) The handbook of environmental chemistry, vol 3, Part F. Berlin, Heidelberg:Springer, 261-285.

- Hall, C.; Cullen, D.C. (1996) Scanning force microscopy of gypsum dissolution and crystal growth, *AIChE Journal* **42**, 232-238.
- Hayes, K. F.; Roe, A. L.; Brown Jr., G. E.; Hodgson, K. O.; Leckie, J. O.; Parks, G. A. (1987), In Situ X-ray Absorption Study of Surface Complexes: Selenium Oxyanions on α -FeOOH, *Science* **238**, 783-786.
- Held, S. (1989), Zum Umweltverhalten von Komplexbildnern auf Phosphonsäurebasis, *Textilveredlung* **24**, 394-398.
- Hilderbrand, R. L.; Henderson, T. G. (1983), in The Role of phosphonates in Living Systems, (Hildenbrand, R. L. ed.) CRC Press, Boca Raton, Florida, pp 5-30.
- Hingston, F. J.; Posner, A. M.; Quirk, J. P. (1972), Anion adsorption by goethite and gibbsite. I. The role of the proton in determining adsorption envelopes, *J. Soil Sci.* **23**, 177-192.
- Hingston, F. J.; Posner, A. M.; Quirk, J. P. (1974), Anion adsorption by goethite and gibbsite. II. Desorption of anions from hydrous oxide surfaces, *J. Soil Sci.* **25**, 16-26.
- Horiguchi, M.; Kandatsu, M. (1959), Isolation of 2-aminoethane phosphonic acid from rumen protozoa, *Nature* **184**, 901-902.
- Horstmann, B.; Grohmann, A. (1988), Investigation into the biodegradability of phosphonates, *Vom. Wasser* **70**, 163-178.
- Jaworska, J.; van Gendersen-Takken, H; Hanstveit, A.; van de Plassche, L.; Feijtel, T. (2002), Environmental risk assessment of phosphonates, used in domestic laundry and cleaning agents in the Netherlands, *Chemosphere* **47**, 655-665.
- Kari, F. G.; Giger, W. (1995), Modeling the photochemical degradation of EDTA in the River Glatt, *Environ. Sci. Technol.* **29**, 2814-2827.
- Karliček, R.; Majer, J.; Polakovičová, J. (1970), New complexanes. XXI. Complex-forming properties of the N,N'-bis(2-hydroxyethyl)aminomethylphosphonic acid, *Chem. Zvesti* **24**, 161-172.
- Kaslina, N. A.; Polyakova, I. A.; Kessenikh, A. V.; Zhadanov, B. V.; Rudomino, M. V.; Churilina, V. V.; Kabachnik, M. I. (1985), Thermal decomposition of nitrilotrimethylenephosphonic acid in aqueous solution, *J. Gen.Chem. USSR* **55**, 472-475.

- Klinger, J.; Lang, M.; Sacher, F.; Brauch, H. J.; Maier, D.; Worch, E. (1998b), Formation of glyphosate and AMPA during ozonation of water containing ethylenediaminetetra(methylenephosphonic acid), *Ozone Sci. Eng.* **20**, 99-110.
- Klinger, J.; Sacher, F.; Brauch, H. J.; Maier, D.; Worch, E. (1998a), Behavior of phosphonic acids during drinking water treatment, *Vom Wasser* **91**, 15-27.
- Knepper, T. P.; Weil, H. (2001), Study on the entry of synthetic chelating agents and compounds exhibiting complexing properties into the aquatic environment, *Vom Wasser* **97**, 193-232.
- Kononova, S. V.; Nesmeyanova, M. A. (2002), Phosphonates and their degradation by microorganisms, *Biochemistry (Moscow)* **67**, 184-195.
- Kraemer, S. M.; Chiu, V.C.; Hering, J.G (1998), Influence of pH and competitive adsorption on the ligand-promoted dissolution of aluminum oxide, *Environ. Sci. Technol.* **32**, 2876-2882.
- Kuys, K. J.; Roberts, N. K. (1987), *In situ* investigation of the adsorption of styrenephosphonic acid on cassiterite by FTIR-ATR spectroscopy, *Colloid Surf.* **24**, 1-17.
- Laiti, E.; Öhman, L. O. (1996), Acid/base properties and phenylphosphonic acid complexation at the boehmite/water interface, *J. Colloid Interface Sci.* **183**, 441-452.
- Laiti, E.; Öhman, L. O.; Nordin, J.; Sjöberg, S. (1995), Acid/base properties and phenylphosphonic acid complexation at the aged γ -Al₂O₃/water interface, *J. Colloid Interface Sci.* **175**, 230-238.
- Lesueur, C.; Pfeffer, M.; Fuerhacker, M. (2005), Photodegradation of phosphonates in water, *Chemosphere* **59**, 685-691.
- Liu, Y; Gao, L.; Yu, L.; Guo, J. (2000), Adsorption of PBTCA on alumina surface and its influence on the fractal characteristics of sediments, *J. Colloid Interface Sci.* **227**, 164-170.
- Martell, A. E.; Montekaitis, R. J.; Fried, A. R.; Wilson, J. S.; MacMillan, D. T. (1975), Thermal decomposition of EDTA, NTA, and nitrilotrimethylenephosphonic acid in aqueous solution, *Can. J. Chem.* **53**, 3471-3476.
- Matthijs, E.; De Oude, N.T.; Bolte, M.; Lemaire, J. (1989), Photodegradation of ferric ethylenediaminetetra(methylenephosphonic acid)(EDTMP) in aqueous solution, *Water Res.* **23**, 845-851.

- McMullan, G.; Quinn, J. P. (1993), The utilization of aminoalkyl phosphonic acids as sole nitrogen source by an environmental bacterial isolate, *Lett Appl. Microbiol.* **17**, 135-138.
- Means, J. L.; Alexander, C. A. (1981), The environmental biogeochemistry of chelating agents and recommendations for the disposal of chelated radioactive wastes, *Nucl. Chem. Waste Manage* **2**, 183-196.
- Mikami, N.; Sasaki, M.; Hachiya, K.; Astumian, R. D.; Ikeda, T.; Yasunaga, T. (1983a), Kinetics of the adsorption-desorption of phosphate on the γ -Al₂O₃ surface using the pressure-jump technique, *J. Phys. Chem.* **87**, 1454-1458.
- Mikami, N.; Sasaki, M.; Kikuchi, T.; Yasunaga, T. (1983b), Kinetics of adsorption-desorption of chromate on γ -Al₂O₃ surfaces using the pressure-jump technique, *J. Phys. Chem.* **87**, 5245-5248.
- Montekaitis, R. J.; Cox, X. B.; Taylor, P.; Martell, A. E.; Miles, B.; Tvedit, T. J. (1982), Thermal degradation of EDTA chelates in aqueous solution, *Can. J. Chem.* **60**, 1207-1213.
- Montekaitis, R. J.; Martell, A. E.; Hayes, D.; Frenier, W. W. (1980), The iron(III)-catalyzed oxidation of EDTA in aqueous solution, *Can. J. Chem.* **58**, 1999-2005.
- Morillo, E.; Undabeytia, T.; Maqueda, C. (1997), Adsorption of glyphosate on the clay mineral montmorillonite: effect of Cu (II) in solution and adsorbed on the mineral, *Environ. Sci. Technol.* **31**, 3588-3592.
- Müller, G.; Forstner, U. (1976), Experimental mobilization of copper and zinc from aquatic sediments by some polyphosphate substitutes in detergents, *Z. Wasser Abwasser Forsch* **9**, 150-152.
- Müller, G.; Steber, J.; Waldhoff, H. (1984), The effect of hydroxyethane diphosphonic acid on phosphate elimination with FeCl₃ and remobilization of heavy metals: results from laboratory experiments and field trial, *Vom Wasser* **63**, 63-78.
- Munro, N. B.; Talmage, S. S.; Griffin, G. D.; Waters, L. C.; Watson, A. P.; King, J. F.; Hauschild, V. (1999), *Environ. Health Perspect.* **107**, 993-974.
- Murai, T.; Tomizawa, C. (1976), Chemical transformation of S-benzyl O-ethyl phenylphosphonothiolate (Inezin) by ultraviolet light, *J. Environ. Sci. Health* **B11**, 185-197.

- Navarro Cerrillo, R. M; Jorge, I.; Ariza, D.; Porras, C.; Jorrin, J. (2007), Fitotoxicidad del fosfonato en brinzales de encina "Quercus ilex" L. subsp. "ballota" (Desf.) Samp, *Boletín de sanidad vegetal. Plagas* **33**, 111-120.
- Novack, B.; Baumann, U. (1998), Biodegradation of the photolysis products of Fe(III)EDTA, *Acta Hydrochim. Hydrobiol.* **26**, 104-108.
- Nowack, B.; Stone, A. T. (2002), Heterogeneous and homogeneous oxidation of nitrilotrismethylenephosphonate (NTMP) in presence of oxygen and manganese (II, III), *J. Phys. Chem.B.* **106**, 6227-6233.
- Nowack, B. (2002), Aminopolyphosphonate removal during wastewater treatment, *Water Res.* **36**, 4636-4642.
- Nowack, B. (2002), Environmental chemistry of aminopolycarboxylate chelating agents, *Environ. Sci. Technol.* **36**, 4009-4016.
- Nowack, B. (2002c), Determination of phosphonic acids breakdown products by high performance liquid chromatography after derivatization, *J. Chromatogr. A* **942**, 185-190.
- Nowack, B. (2003), Environmental chemistry of phosphonates, *Water Res.* **37**, 2533-2546.
- Nowack, B.; Stone, A. T. (1999a), Adsorption of phosphonates onto the goethite-water interface, *J. Colloid Interface Sci.* **214**, 20-30.
- Nowack, B.; Stone, A. T. (1999b), Influence of metals on the adsorption of phosphonates onto goethite, *Environ. Sci. Technol.* **33**, 3627-3633.
- Nowack, B.; Stone, A. (2000), Degradation of nitrilotris(methylenephosphonic acid) and related (amino)phosphonate chelating agents in the presence of manganese and molecular oxygen, *Environ. Sci. Technol.* **34**, 4759-4765.
- Popov, K.; Rönkkömäki, H.; Lajunen, L. H. J. (2001), *Pure Appl. Chem.* **73**, 1641-1677.
- Ranganathan, S.; Prince, A. A. M; Raghavan, P. S.; Gopalan, R. ; Srinivasan, M. P.; Narasimhan, S. V. (1997), Kinetics of Dissolution of Magnetite in PDCA Based Formulations, *J. Nucl. Sc. Technol.* **34**, 810-816.
- Samakaev, R. K.; Dyatlova, N. M.; Dytyuk, L. T. (1984), The solubility in water of the nitrilotrimethylenephosphonates of the group II elements, *Russ. J. Inorg. Chem.* **29**, 1819-1820.

- Schowanek, D.; Verstraete, W. (1991), Hydrolysis and free radical mediated degradation of phosphonates, *J. Environ. Qual.* **20**, 769-776.
- Schuette, J. (1998), Environmental fate of glyphosate, Environmental Monitoring & Pest Management, Department of Pesticide Regulation, Sacramento, CA 95824-5624
- Schwarzenbach, G.; Ackermann, H.; Ruckstuhl, P. (1949), New derivate der iminodiessigsäure und ihre Erdal kalikomplexe, *Helv. Chim. Acta* **32**, 1175-1186.
- Shriver, D. F.; Atkins, P. W.; Langford, C. H. (1994), Inorganic Chemistry, second ed., Oxford Univ. Press, London/New York.
- Small, M. J. (1984), Tech Rpt 8304; AD A149515, Fort Detrich, MD; US Army Medical Bioengineering Research and Development Laboratory.
- Sposito, G. (2004), The Surface Chemistry of Natural Particles. Oxford University Press, New York, 242 p.
- Steber, J.; Wierich, P. (1987), Properties of aminotris(methylenephosphonate) affecting its environmental fate: degradability, sludge adsorption, movility in soils, and bioconcentration, *Chemosfere* **16**, 1323-1337.
- Stumm, W. (1997), Reactivity at the mineral-water interface: dissolution and inhibition, *Colloid Surf. A* **120**, 143-166.
- Tamura, H.; Ito, N.; Takasaki, S.; Furuichi R. (2000), A Kinetic Model of the Dissolution of Metal Oxides with Chelating Agents, *Nippon Kagakkai Koen Yokoshu* **78**, 40-48.
- Tschäbunin, G.; Fischer, P.; Schwedt, G. (1989c), On the analysis of polymethylenephosphonic acids. III. Stability of ethylenediaminetetramethylenephosphonic acid (EDTMP) in aqueous solution, *Fresenius J. Anal. Chem.* **333**, 123-128.
- von Baeyer, H.; Hofmann, K. A. (1897), Acetodiphosphorige Säure, *Ber. D. Chem. Gen.* **30**, 1973-1978.
- Wanner, B. L. (1994), Molecular genetics of carbon-phosphorous bond cleavage in bacteria, *Biodegradation* **5**, 175-184.
- Westall, J.; Herbelin, A. (1996), FITEQL-Version 3.2, Report 96-01, Department of Chemistry, Oregon State Univ., Corvallis.

- Wolf, K.; Gilbert, P. A. (1992), EDTA-Ethylenediaminetetraacetic acid. In: Hutzinger O (ed). The handbook of environmental chemistry, vol 3, Part F. Berlin, Heidelberg:springer, p.243-259.
- Xyla, A. G.; Mykroyannidis, J.; Koutsoukos, P. G. (1992), The inhibition of calcium carbonate precipitation in aqueous media by organophosphorus compounds, *J. Colloid Interface Sci.* **153**, 537-551.
- Zaranyika, M. F.; Nyandoro, M. G. (1993), Degradation of glyphosate in the aquatic environment: an enzymatic Kinetic model that takes into account microbial degradation of both free and colloidal (or sediment) particle adsorbed glyphosate, *J. Agric Food Chem.* **41**, 838-842.