

## 10. Bibliografía

- Águila-Hernández, J., Trejo, A. Y Gracia-Fadriqueb, J. Surface tension of aqueous solutions of alkanolamines:singel amines, blended amines and systems with nonionic surfactants. *Fluid Phase Equilibria*. 185 (2001) 165-175.
- Al-Ghawas, H. A., Hagewiesche, D. P., Ruiz-Ibañez, G. Y Sandall, O. C. Physicochemical properties important for carbon dioxide absorption in aqueous methyldiethanolamine. *J. Chem. Eng. Data* 34 (1989) 385-391.
- Al-Ghawas, H. A., Ruiz-Ibañez, G. Y Sandall, O. C. Absorption of carbonyl sílfide in aqueous methyldiethanolamine. *Chem. Engng. Sci.* 44 (1989) 631-639.
- Al-Ghawas, H. A. y Sandall, O. C. Simultaneous absorption of carbon dioxide, carbonyl sulfide and hydrogen sulfide in aqueous methyldiethanolamine. *Chem. Engng. Sci.* 46 (1991) 665-676
- Astarita, G., Gioia, F. y Balzano, C. Hydrogen sulphide absorption in aqueous monoethanolamine solutions. *Chem. Engng. Sci.* 20 (1965) 1101-1105.
- Bolhàr-Nordenkampf, M., Friedl, A., Koss, U. y Tork, T. Modelling selective H<sub>2</sub>S absorption and desorption in an aqueous MDEA-solution using a rate-based non-equilibrium approach. *Chem. Eng. Proc.* 43 (2004) 701-715
- Carroll, J. J. y Mather, A. E. A Modell for the solubility of light hydrocarbons in water and aqueous solutions of alkanolamines. *Chem. Engng. Sci.* 52 (1997) 545-552.
- Danckwerts, P. V., Gas-liquid Reactions, McGraw-Hill, 1970.
- Danckwerts, P. V., The reaction of CO<sub>2</sub> with ethanolamines. *Chem. Engng. Sci.* 34 (1979) 443-446.
- Dietz, W. A., Response factors for gas chromatographic analyses. *J. Chromatographic Sci.* 11 (1973) 68 -72
- Farajia, F., Safarika, I., Strausz, O. P., Yildirim, E. y Torres, M. E. The direct conversión of hydrogen sulfide to hydrogen and sulfur. *Int. J. H. Energy.* 23 (1998) 451-456
- Fisch E. J., Hill E. S., Van Scoy R. W. Absorción de gases ácidos del gas natural y del SNG en Considine D. M. Tecnología del gas natural Publicaciones Maracombo, 1987.
- Fürhacker, M., Pressl, A. y Allabashi, R. Aerobic biodebradability of methyldiethanolamine (MDEA) used in natural gas sweetening plants in batch test and continuous flow experiments. *Chemosphere.* 52. (2003). 1743-1748

- Hagewiesche, D. P., Ashour, S. S., Al-Ghawas, H. A. y Sandall, O. C. Absorption of carbon dioxide into aqueous blends of monoethanolamine and N-methyldiethanolamine. *Chem. Engng. Sci.* 50 (1995) 1071-1079.
- Haimour N. y Sandall, O. C., Absorption of H<sub>2</sub>S into aqueous methyldiethanolamine. *Chem. Eng. Comm.* 59 (1987) 85-93.
- Hua, L. Q., Shuo, Y. y Jin Lin, T. A new complex absorbent used for improving propylene carbonate absorbent for carbon dioxide removal. *Sep. Pur. Tech.* 16 (1999). 133-138.
- Jou, F., Mather, A. E. y Otto, F. D., Solubility of H<sub>2</sub>S and CO<sub>2</sub> in aqueous methyldiethanolamine solutions *Ind. Eng. Chem. Process Des. Dev.* 21 (1982) 539-544
- Kohl A. L. and Buckingham P. A. Fluor Solvent CO<sub>2</sub> removal process *Petro. Refiner.* 39 (1960)
- Krishna R. y Standart, G. L. A multicomponente film Modelo incorporating a general matrix method of solution to the Maxwell-Stefan equations. *AIChE J.* 22 (1976) 383-389.
- Littel, R. J., Filmer, B., Versteeg, G. F. Y Van Swaaij, W. P. M. Modelling of simultaneous absorption of H<sub>2</sub>S and CO<sub>2</sub> in alkanolamine solutions; the influence of parallel and consecutive reversible reactions and the coupled diffusion of ionic species. *Chem Engng Sci.* 46 (1991) 2303-2313.
- Littel, R. J., Van Swaaij y Versteeg, G. F. Kinetics of carbon dioxide with tertiary amines in aqueous solution. *AIChE J.* 36 (1990) 1633-1639.
- Lott F. S. Gas, natural en Boreau of mines, U.S. department of the Interior, "ECT vol. 10" 2nd edition, 1966.
- MacNab, A. J. y Treseder, R. S., Materials experience in the sulfinol gas-treating process, *Mater. Protect. Performance.* 10 (1971) 21-26
- Mandal, B. P., Biswas, A. K. Y Bandyopadhyay, S. S. Selective absorption of H<sub>2</sub>S from gas streams containing H<sub>2</sub>S and CO<sub>2</sub> into aqueous solutions of N-methyldiethanolamine and 2-amino-2-methyl-1-propanol. *Sep. Pur. Tech.* 35 (2004) 191-202.
- Mandal, B. P., Kundi, M. Y Bandyopadhyay, S. S. Density and viscosity of aqueous solutions of N-methyldiethanolamine. *J. Chem. Eng. Data* 48 (2003).
- Mather, A. E. Phase equilibria in acid gas removal systems: experiment and modeling. XII Coloquio Anual de Termodinámica. (1997).
- NATCO, página web <http://www.test-us.com>
- New Point Gas, página web <http://www.newpointgas.com>

- Ober, J. A. U. S. Geological Survey Minerals Yearbook. 2002
- Onda, K., Sada, E., Kobayshi, T. Y Fujine, M., Gas absorption accompanied by complex chemical reactins – III. Parallel chemical reactions *Chem. Engng. Sci.* 25 (1970) 1023-1031
- Pani, F., Gaunand, A., Cadours, R., Bouallou C. y Richon, D. Kinetics of absorption of CO<sub>2</sub> in concentrated aqueous methyldiethanolamine solutions in the range 296 K to 343 K. *J. Chem. Eng. Data* 42 (1997), 353-359.
- Pemex, página web, <http://www.pemex.gob.mx>
- Pérez, S. A. Investigación sobre la transferencia de masa en los procesos de endulzamiento de corrientes gaseosas de hidrocarburos: cinética química en soluciones gas-ácido + soluciones acuosas de mezclas de alcanolaminas I. Tesis de maestría, Universidad de las Américas-Puebla, 2001.
- Pohoreckia, R. y Mo, C. A new absorbent for carbon dioxide and hydrogen sulphide absorption process. *Chem Eng. Process.* 37 (1998) 69-78.
- Rebolledo-Libreros, M. E. y Trejo, A., Gas solubility of CO<sub>2</sub> in aqueous solutions of N-methyldiethanolamine and diethanolamine with 2-amino-2-methyl-1-propanol. *Fluid Phase Equilibria* 218 (2004) 261-267.
- Reisenfeld F. C. And Mullowney J. F. Giammarco-Vetrocoke Processes *Petro. Refiner* 38, (1959)
- Rinker, E. B., Ashour, S. S. y Sandall, O. C. Kinetics and modeling of carbon dioxide absorption into aqueous solutions of N-methyldiethanolamine. *Chem. Engng. Sci.* 50 (1995) 755-768.
- Rosie, D. M. y Barry, E. F. Quantitation of termal conductivity detectors. *J. Chromatographic Sci.* 11 (1973) 237 - 249
- Tamir, A. y Taitel, Y. Absorption of a multicomponent gaseous mixture in the presence of instantaneous surface reaction. *Chem. Engng. Sci.* 29 (1974) 669-673.
- Taulbee, D. N., Graham., U., Rathbone, R. F. y Tobl, T. L. Removal of CO<sub>2</sub> from multicomponent gas streams using dry-FGD wastes. *Fuel.* 76 (1997). 781-786.
- Torres, M. Investigación sobre la transferencia de masa en los procesos de endulzamiento de corrientes gaseosas de hidrocarburos: cinética química en soluciones gas-ácido + soluciones acuosas de mezclas de alcanolaminas II. Tesis de licenciatura, Universidad de las Américas-Puebla, 2002.
- Uribe, S. Contribución a los procesos de fenómenos de transporte de materia y reacción en el endulzamiento de gas natural: determinación de constantes cinéticas en absorción con reacción química. Tesis de maestría, Universidad de las Américas-Puebla, 1999.

- Vallée, G., Mougin, P., Jullian, S. y Fürst, W., Representation of CO<sub>2</sub> and H<sub>2</sub>S absorption by aqueous solutions of diethanolamine using an electrolyte equation of state. *Ind. Eng. Chem. Res.* 38 (1999).
- Watanabe, H., CO<sub>2</sub> removal from synthetic natural gas for city gas use. *Journal of Membrane Science.* 154 (1999). 121-126.
- Welty, J. R., Wicks, C. E. y Wilson, R. E. Fundamentos de transferencia de momento, calor y masa. Limusa, 1996.
- Yu, W. Y Astarita, G., Selective absorption of hydrogen sulphide in tertiary amine solutions. *Chem. Engng. Sci.* 42 (1987) 419-424.