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The influence of axial dispersion on carbon dioxide absorption tower performance, Brittan, Michael I., and Edward T. Woodburn, **A.I.Ch.E. Journal, 12,** No. 3, p. 541 (May, 1966).

Key Words: A. Mass Transfer-8, 9, Absorption-8, 9, Carbon Dioxide-1, 2, 9, Nitrogen-1, 9, Water-5, Absorption Tower-10, 9, Packed-0, Countercurrent-0, Axial Dispersion-6, Liquid Rates-6, Gas Rates-6, Height-6, Rate-7, Performance-7, Mass Transfer Coefficient-7, 2, Comparing-8, Applicability-9, Piston Flow Model-9, 10, Axial Diffusion Model-9, 10, Calculating-4, 8, Concentration Profiles-2.

Abstract: Carbon dioxide was absorbed from mixtures with nitrogen by countercurrent contact with water in an experimental packed tower. Radial and axial gas concentration profiles were determined from measurements made within the packing. Characterizing the gas flow regime by both piston flow and axial diffusion models yielded mass transfer data and computed axial gas concentration profiles. Comparison of the piston flow and axially dispersed profiles with the experimental profiles enabled conclusions to be drawn regarding the applicability of the axial diffusion model and the accuracy of available dispersion-parameter values.

Diffusion of gases in electrolytic solutions, Gubbins, Keith E., Kamlesh K. Bhatia, and Robert D. Walker, Jr., **A.I.Ch.E. Journal, 12,** No. 3, p. 548 (May, 1966).

Key Words: A. Measuring-8, Diffusivity-9, 8, 7, Fluidity-9, 8, Diffusion-9, 8, Diffusion Coefficients-9, 7, 1, Hydrogen-9, Methane-9, Gases-9, Water-5, Solutions-5, Electrolytes-5, 6, Potassium Chloride-5, 6, Magnesium Chloride-5, 6, Manganese Sulfate-5, 6, Diaphragm Cell-10, Calculating-8, Diffusion Activation Energy-2, Concentration-6, 1, Ions-6, Temperature-6, 1, Eyring Rate Theory-10.

Abstract: Measurements of the diffusion coefficients of hydrogen and methane in strong aqueous electrolytes have been made with the use of the diaphragm cell method. The variation of the diffusion coefficients with electrolyte concentration, type of ion, and temperature has been studied for temperatures in the range 25° to 65°C. The results have been interpreted with the Eyring rate theory and the diffusion activation energies have been calculated.

Heat transport and temperature distributions in large single drops at low Reynolds numbers: A new experimental technique, Head, Harlan N., and J. D. Hellums, **A.I.Ch.E. Journal, 12,** No. 3, p. 553 (May, 1966).

Key Words: A. Measuring-8, 4, Temperature Distribution-9, 8, Temperature Profiles-9, Fluid Dynamics-9, Rates-9, Heat Transfer-9, 8, 4, Dielectric Heating-10, 8, 4, Apparatus-10, 8, Drops-9, Suspended-0, Single-0, Water-Glycerol-9, Experimental Techniques-10, 8, New-0, Thermocouple-10, Thermocouple Probe-10.

Abstract: A new experimental technique for obtaining detailed measurements of the temperature distributions in and around drops is reported. The large single drops (glycerol-water mixtures) studied are suspended in a continuous phase flowing liquid (high viscosity silicone fluid) and heated indirectly by high-frequency dielectric power. Rates of heat transfer from a drop are obtained by measuring the temperature rise in the continuous phase liquid as it passes the drop. The actual temperature distribution within a cooling drop is obtained by use of a fine thermocouple probe.

Viscosity and thermal conductivity of nitrogen–*n*-heptane and nitrogen–*n*-octane mixtures, Carmichael, L. T., and B. H. Sage, **A.I.Ch.E. Journal, 12,** No. 3, p. 559 (May, 1966).

Key Words: A. Measuring-8, Viscosity-9, 8, 7, Thermal Conductivity-9, 8, 7, *n*-Heptane-9, *n*-Octane-9, Nitrogen-9, Gases-9, Mixtures-9, Pressure-6, Temperature-6, Composition-6, Rotating Cylinder Viscometer-10. B. Calculating-8, Viscosity-2, 7, Thermal Conductivity-2, 7, Gases-9, *n*-Octane-9, *n*-Heptane-9, Air-9, Mixtures-9, Temperature-6, Composition-6, Lindsay-Bromley Correlation-10, Chapman-Cowling Equation-10.

Abstract: Measurements of the thermal conductivity and viscosity of *n*-heptane and *n*-octane in the gas phase were made at temperatures of 100° and 160°F. and at pressures below 1 atm. In addition, measurements of the viscosity and thermal conductivity of binary gas mixtures of nitrogen and *n*-heptane were made at 160°F. at pressures below 1 atm. Viscosity and thermal conductivity of air–*n*-heptane and air–*n*-octane systems were calculated.

Free tear sheets of the information retrieval entries in this issue may be obtained by writing to the New York office.

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not be able to get along without his standard references and handbooks; the former have been listed at the end of each section.

In my first attempt to make actual use of the Companion I was, I regret to say, disappointed, having wished to find quickly the internal areas of a standard 5-in. pipe and of a 12-in. Schedule 80 pipe. The pipe table does not give internal areas nor outside surface areas nor is reference made to the ASA Standard Pipe Schedule which, I think, is unfortunate.

The printing is clear and the type is highly legible. The only typographical error I have caught was on page 30 where, under Probability, one of the 4 aces is spelled "3aces."

The book is not meant to serve a single discipline, and will be of more use to the generalist than to the design engineer or specialist who may need the complete story. But the generalist should not have forgotten all his fundamentals or the reminders here may not serve him too well, but if he has not, and does not wish to be burdened with the usual large, heavy volumes, this little book, 8½ in. by 5¾ in. by ⅞ in., may make a handy companion.

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ERRATA

In "Velocity and Pressure Profiles for Newtonian Creeping Flow in Regular Packed Beds of Spheres" by L. J. Snyder and W. E. Stewart (Vol. 12, No. 1, pp. 167-173), on page 170 the last sentence in the last complete paragraph should read: The predicted superficial velocities v_0^* are shown in Figure 2; for large N an extrapolated value $v_0^* = 0.000258$ is indicated. The experimental results of Martin and co-workers give a value $v_0^* = 0.000267$ which agrees well with the result in Figure 2.

In "Heat Transfer to Non-Newtonian Fluids in Transitional and Turbulent Flow" by A. W. Petersen and E. B. Christiansen (Vol. 12, No. 2, pp. 221-232), Equation (43) should read

$$Z' = \frac{1}{2} \frac{\rho}{(dp/dz)} \frac{d}{dr} (u^2)$$