Tittlemier, S.A., Braekevelt, E., Halldorson, T., Reddy, C.M., and Norstrom, R.J., *Vapour pressures, aqueous solubilities, Henry's Law constants, and octanol/water partition coefficients of a series of mixed halogenated dimethyl bipyrroles*, Chemosphere, 2004; v7, 1373-1381

Basic phys.-chem. properties of five bromine and chlorine contg. mixed halogenated di-Me bipyrroles (HDBPs) were detd. using established methods. Subcooled liq. vapor pressures (PL,25), aq. solubilities (Sw,25), and octanol/water partition coeffs. (Kow) were detd. using the gas chromatog.-retention time, generator column, and slow-stirring methods, resp. Henry's Law consts. (H25) were estd. using exptl.-derived PL0 and Sw,25 data. Values of all four properties were generally similar to those reported for other polyhalogenated arom. compds. [PL,25 = (7.55-191)´10-6 Pa; Sw,25 = (1.0-1.9) ´ 10-5 g/l; log Kow = 6.4-6.7; H25 = 0.0020-0.14 Pa m3/mol]. The effect of replacing a chlorine with a bromine atom significantly decreased PL,25 = (logP,25 = -0.4197 (# bromine atoms) - 2.643, $p < 0.01$) and H25 (logH25 = -0.508 (# bromine atoms) + 0.394, $p < 0.02$). There were no significant effects of bromine/chlorine substitution on Sw,25 or Kow. A simple Level I equil. partitioning model predicted the environmental behavior of HDBPs to be similar to a tetrabrominated di-Ph ether. Only slight differences in behavior amongst HDBP congeners were predicted since substitution of a bromine for a chlorine (Cl/Br substitution) atom had less effect than H/Cl or H/Br substitution on PL,25, Sw,25, H25, and Kow.