SUPPORTING INFORMATION

Table S1. Colors, Solubilities and Elemental Analyses for the Oxovanadium(IV) Complexes of the Schiff Base Ligands in Table 1

SB No.	Color	Solubility[a] in CH_3CN	Solubility[a] in CH_2Cl_2	Elemental Analysis C; H; N % (Calc.)
1	green	s	vs	68.9(69.2); 8.3(8.2); 5.0(5.2)
2	green	s	s	63.0(62.8); 3.7(3.5); 7.4(7.4)
3	orange	is	is	58.8(47.2); 4.6(4.5); 8.1(8.3)
4	brown	ss	ss	45.4(32.4); 2.9(2.3); 13.2(9.6)
5	orange	ms	s	60.8(59.0); 5.4(5.4); 7.5(7.3)
6	black	is	is	66.8(70.0); 3.7(3.8); 6.5(7.6)
7	grey	is	is	73.3(73.8) 7.4(7.5); 4.3(7.3)
8	green	s	vs	71.4(72.6); 7.6(7.7); 4.6(5.0)
9	orange	is	is	49.0(44.1); 3.9(4.2); 12.0(11.5)
10	brown	ss	ss	50.3(49.8); 3.8(3.8); 11.7(11.7)
11	green	s	vs	55.0(55.1); 4.6(4.5); 7.1(7.3)
12	light blue	s	vs	53.0(53.1); 4.9(4.8); 6.2(6.3)
13	green	ss	ms	66.5(67.6); 4.2(4.2); 6.5(6.9)
14	olive	ss	ms	69.9(70.0); 3.8(3.9); 5.8(5.9)
15	brown	is	is	72.3(71.6); 3.8(3.6); 5.3(5.7)

[a] vs (very soluble): > 5 mM; s (soluble): >1 mM; ms (moderately soluble): ~ 0.5 mM; ss (slightly soluble): ~ 0.1mM; is (insoluble).

Table S2. IR and EPR Spectral Data for $V^{IV}O$(SB) Complexes of the Ligands in Table 1.

SB No.	EPR[a] g-factor	A (G)[b]	IR, $\nu_{V=O}$ (cm^{-1}) nujol	CH_3CN
1	1.986	90	977	980
2	1.988	96	985	990
3	--	--	860	--
4	--	--	875	--
5	1.987	94	985	990
6	--	--	884	--
7	--	--	888	--
8	1.988	96	982	986
9	--	--	881	--
10	--	--	872	--
11	1.986	96	984	984
12	1.987	94	983	993
13	1.986	96	986	982
14	1.987	100	978	984
15	--	--	916	--

a. At room temperature (298°K). The solvent was CH_3CN except for No. 13 and 14 where CH_2Cl_2 was used.

b. Nuclear hyperfine splitting factor.

Table S3. Titration Data Used to Evaluate the Equilibrium Constant of Reaction 1 for Schiff Base No. 14[a].

CF_3SO_3H added millimoles/l.	$[V^{V}O(SB)^{+}] = [V^{III}(SB)^{+}]$, mM	$[H^{+}]$, mM	10^{-5} K_1, M^{-1}
0	0	0	
0.15	0.038	0.074	2.3
0.30	0.074	0.15	2.2
0.45	0.12	0.21	2.9
0.60	0.17	0.27	3.5
0.75	0.20	0.34	3.0
0.90	0.25	0.41	3.3
1.05	0.29	0.46	3.5
			av (3.0 ± 0.5)

a. The data were obtained with a saturated solution of $V^{IV}O(SB)$ in CH_3CN initially containing 20 mM H_2O. $[V^{IV}O(SB)]$ was assumed to remain constant at 0.15 mM throughout the titration, see text. The concentrations of the other reactants were calculated from the stoichiometry of reaction 1. The dissociation of CF_3SO_3H was assumed to be complete based on the pKa of 2.6 reported in dry acetonitrile (Fujinaga, T.; Sakamoto, I., *J. Electroanal. Chem.*, **1977**, 85, 185).