Table 5: Rb^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{Rb^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Rb^+-1	**Rb^+-1** ($w \approx 1$ %), oNPOE (w = 65–66 %), PVC (w = 33–34 %)	Na^+, –2.20	FIM	–	0.1	45.6	10^{-4} -10^{-1}	0.1 M NaCl background	[1]
	Rb^+-1 ($w \approx 1$ %), DOS (w = 65–66 %), PVC (w = 33–34 %)	Na^+, –2.52	FIM	–	0.1	48.6	10^{-4} -10^{-1}	0.1 M NaCl background	[1]
Rb^+-2	**Rb^+-2** ($w \approx 1$ %), oNPOE (w = 65–66 %), PVC (w = 33–34 %)	Na^+, –2.05	FIM	–	0.1	42.0	10^{-4} -10^{-1}	0.1 M NaCl background	[1]
	Rb^+-2 ($w \approx 1$ %), DOS (w = 65–66 %), PVC (w = 33–34 %)	Na^+, –2.20	FIM	–	0.1	50.0	10^{-4} -10^{-1}	0.1 M NaCl background	[1]
Rb^+-3	**Rb^+-3** (w = 6.7 %), PVC (w = 30.3 %), oNPOE (w = 63.0 %)	K^+, –1.3	FIM	–	–	–	–		[2]
Rb^+-4	**Rb^+-4** (w = 6.7 %), oNPOE (w = 63.0 %), PVC (w = 30.3 %)	K^+, –1.3	FIM	–	–	–	–		[2]
Rb^+-5	**Rb^+-5** (w = 2.5 %), DDP (w = 64.5 %), PVC (w = 33 %)	Li^+, +1.23; Na^+, +0.51; K^+, +0.33; Cs^+, +0.13; NH_4^+, +0.85; Mg^{2+}, +0.20; Ca^{2+}, +2.05; Sr^{2+}, +0.26; Ba^{2+}, –0.22	SSM	–	–	40	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 5.0 \times 10^{-3}$ M	[3]
	Rb^+-5 (w = 3.0 %), DDP (w = 65.0 %), PVC (w = 32 %)	Li^+, –1.92; Na^+, –1.51; K^+, –0.46; Cs^+, –0.59; NH_4^+, –1.13; Mg^{2+}, –2.92; Ca^{2+}, –3.15; Sr^{2+}, –3.22; Ba^{2+}, –3.10	SSM	–	–	47	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 1.3 \times 10^{-4}$ M	[3]
	Rb^+-5 (w = 4.5 %), DDP (w = 63.5 %), PVC (w = 32 %)	Li^+, –1.00; Na^+, –1.25; K^+, –0.50; Cs^+, –0.73; NH_4^+, –1.30; Mg^{2+}, –2.40; Ca^{2+}, –2.64; Sr^{2+}, –3.52; Ba^{2+}, –3.70	SSM –	– –	–	48	10^{-3} -10^{-1}	t_{resp} = 2–5s; τ = 45–60 d; $c_{dl} = 1.5 \times 10^{-4}$ M	[3]
	Rb^+-5 (w = 2.5 %), DDP (w = 63.9 %), KTPB (x_i = 30.1 %), PVC (w = 33 %)	Li^+, –1.48; Na^+, –1.17; K^+, –0.28; Cs^+, –0.20; NH_4^+, –0.73; Mg^{2+}, –2.33; Ca^{2+}, –1.71; Sr^{2+}, –2.52; Ba^{2+}, –2.20	SSM	–	–	46	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 1.0 \times 10^{-5}$ M	[3]

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Table 5: Rb^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Rb^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Rb^+-5 (w = 4.5 %), DDP (w = 62.9 %), KTPB (x_i = 16.7 %), PVC (w = 32 %)	Li^+, –1.77; Na^+, –1.30; K^+, –0.08; Cs^+, –0.39; NH_4^+, –1.02; Mg^{2+}, –2.43; Ca^{2+}, –2.40; Sr^{2+}, –0.84; Ba^{2+}, –1.55	SSM	–	–	43	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 2.0 \times 10^{-5}$ M	[3]
	Rb^+-5 (w = 6.5 %), DDP (w = 61.9 %), KTPB (x_i = 11.6 %), PVC (w = 31 %)	Li^+, –3.00; Na^+, –2.30; K^+, –1.70; Cs^+, –1.30; NH_4^+, –2.22; Mg^{2+}, –3.70; Ca^{2+}, –3.52; Sr^{2+}, –3.40; Ba^{2+}, –3.52	SSM	–	–	43	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 2.0 \times 10^{-5}$ M	[3]
	Rb^+-5 (w = 4.5 %), DDP (w = 63.2 %), KTPB (x_i = 8.3 %), PVC (w = 32 %)	Li^+, –1.89; Na^+, –1.46; K^+, –0.35; Cs^+, –0.41; NH_4^+, –0.92; Mg^{2+}, –2.89; Ca^{2+}, –3.00; Sr^{2+}, –3.10; Ba^{2+}, –3.05	SSM	–	–	47	10^{-3}–10^{-1}	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 1.2 \times 10^{-4}$ M	[3]
	Rb^+-5 (w = 4.5 %), DDP (w = 61.2 %), KTPB (x_i = 64.2 %), PVC (w = 32 %)	Li^+, –1.89; Na^+, –0.50; K^+, –0.74; Cs^+, +0.06; NH_4^+, –0.86; Mg^{2+}, –1.52; Ca^{2+}, –1.96; Sr^{2+}, –1.60; Ba^{2+}, –1.66	SSM	–	–	40	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 3.0 \times 10^{-3}$ M	[3]
	Rb^+-5 (w = 6.5 %), oNPOE (w = 61.9 %), KTPB (x_i = 11.6 %), PVC (w = 31 %)	Li^+, –2.30; Na^+, –2.22; K^+, –1.82; Cs^+, –1.92; NH_4^+, –2.22; Mg^{2+}, –2.57; Ca^{2+}, –2.49; Sr^{2+}, –2.40; Ba^{2+}, –2.09	SSM	–	–	46	10^{-4}–10^{-1}	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 1.0 \times 10^{-5}$ M	[3]
	Rb^+-5 (w = 4.5 %), oNPOE (w = 62.9 %), KTPB (x_i = 16.7 %), PVC (w = 32 %)	Li^+, –2.30; Na^+, –1.20; K^+, –0.39; Cs^+, –1.00; NH_4^+, –0.78; Mg^{2+}, –2.74; Ca^{2+}, –2.92; Sr^{2+}, –2.59; Ba^{2+}, –2.48	SSM	–	–	42	–	t_{resp} = 2–5 s; τ = 45–60 d; $c_{dl} = 1.2 \times 10^{-5}$ M	[3]
Rb^+-6	**Rb^+-6** (w = 1 %), oNPOE (w = 65.5 %), KTpClPB (x_i = 50 %), PVC (w = 33 %)	Li^+, –2.7; Na^+, –2.4; K^+, –1.6; Cs^+, –2.0; NH_4^+, –1.9; Mg^{2+}, –3.3; Ca^{2+}, –3.2; Sr^{2+}, –3.1; Ba^{2+}, –2.7; Mn^{2+}, –3.1; Co^{2+}, –3.0; Ni^+, –3.2; Cu^{2+}, –2.9; Cd^{2+}, –2.8; Al^{3+}, –3.3; La^{3+}, –3.2; Ce^{3+}, –3.2	SSM	0.01	0.01	59	10^{-4} –10^{-1}	25 ± 1 °C; $c_{dl} = 1.1 \times 10^{-5}$ M; 3 < pH < 10	[4]
	Rb^+-6 (w = 1 %), oNPOE (w = 65.5 %), PVC (w = 33 %)	K^+, –0.3	SSM	0.01	0.01	40	10^{-3} –10^{-1}	25 ± 1 °C; $c_{dl} = 6.5 \times 10^{-4}$ M	[4]
	Rb^+-6 (w = 1 %),	K^+, –0.7	SSM	0.01	0.01	53	10^{-4}	25 ± 1 °C;	[4]

Table 5: Rb^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Rb^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 65.5 %), NaTFPB (x_i = 50 %), PVC (w = 33 %)						-10^{-1}	$c_{dl} = 7.0 \times 10^{-5}$ M	
	Rb$^+$-6 (w = 1 %), oNPOE (w = 65.5 %), NaTPB (x_i = 50 %), PVC (w = 33 %)	K^+, –1.0	SSM	0.01	0.01	56	10^{-4} -10^{-1}	25 ± 1 °C; $c_{dl} = 4.0 \times 10^{-5}$ M	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), TEHP (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, +0.6; Cs^+, +0.8; Mg^{2+}, –1.1	SSM	0.01	0.01	26	–	25 ± 1 °C	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), 1-chloronaphthalene (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –0.1; Cs^+, –0.2; Mg^{2+}, –1.7	SSM	0.01	0.01	28	–	25 ± 1 °C	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), diphenyl ether (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –0.3; Cs^+, –0.6; Mg^{2+}, –1.7	SSM	0.01	0.01	35	–	25 ± 1 °C	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), DBP (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –0.4; Cs^+, –0.9; Mg^{2+}, –2.5	SSM	0.01	0.01	40	–	25 ± 1 °C	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), dibutyl adipate (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –0.4; Cs^+, –1.1; Mg^{2+}, –2.2	SSM	0.01	0.01	55	–	25 ± 1 °C	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), BEHS (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –0.6; Cs^+, –1.2; Mg^{2+}, –2.5	SSM	0.01	0.01	56	–	25 ± 1 °C	[4]
	Rb$^+$-6 (w = 1 %), PVC (w = 33 %), DOP (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –0.7; Cs^+, –1.3; Mg^{2+}, –2.7	SSM	0.01	0.01	56	–	25 ± 1 °C	[4]
Rb$^+$-7	**Rb$^+$-7** (w = 1 %), PVC (w = 33 %), oNPOE (w = 65.5 %), KTpClPB (x_i = 50 %)	K^+, –1.1; Cs^+, –1.9; Mg^{2+}, –3.0	SSM	0.01	0.01	56	10^{-4} -10^{-1}	25 ± 1 °C; $c_{dl} = 2.5 \times 10^{-5}$ M	[4]
Rb$^+$-8	**Rb$^+$-8** (w = 1 %), PVC (w = 33 %), oNPOE (w = 65.5 %), KTpClPB (x_A = 50 %)	K^+, –0.9; Cs^+, –1.6; Mg^{2+}, –2.8	SSM	0.01	0.01	52.5	10^{-4} -10^{-1}	25 ± 1 °C; $c_{dl} = 3.2 \times 10^{-5}$ M	[4]

(1) A. Covington, H. Grey, P.M. Kelly, K.I. Kinnear, J.C. Lockhart, *Analyst*, **113**, 895–897 (1988).
(2) E. Luboch, A. Cygan, J.F. Biernat, *Tetrahedron*, **47**, 4101–4112 (1991).
(3) N.G. Lukyanenko, N.Y. Titova, N.L. Nesterenko, T.I. Kirichenko, S.V. Shcherbakov, *Anal. Chim. Acta*, **263**, 169–173 (1992).
(4) M.B. Saleh, *Analyst*, **119**, 2205–2208 (1994).

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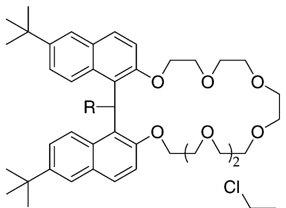
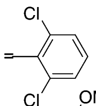
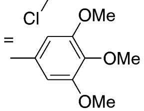
Table 5: Rb^+-Selective Electrodes (*Continued*)

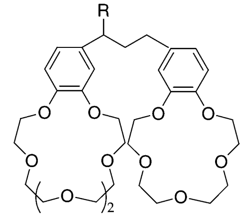


Rb^+-1 (M_r = 817.89): R =

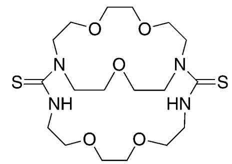


Rb^+-2 (M_r = 839.08): R =

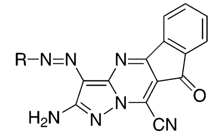




Rb^+-3 (M_r = 636.80): R = H
Rb^+-4 (M_r = 765.01): R = OC_8H_{17}



Rb^+-5 (M_r = 450.61)



Rb^+-6 (M_r = 399.80): R = -*p*-chlorophenyl
Rb^+-7 (M_r = 365.35): R = phenyl
Rb^+-8 (M_r = 379.38): R = -*p*-tolyl