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POTENTIOMETRIC SELECTIVITY COEFFICIENTS OF ION-SELECTIVE ELECTRODES

PART I. INORGANIC CATIONS

(Technical Report)

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Potentiometric selectivity coefficients of ion-selective electrodes

Part I. Inorganic Cations

(Technical Report)

Abstract: Potentiometric selectivity coefficients, $K^{pot}_{A,B}$, have been collected for ionophore-based ion-selective electrodes (ISEs) for inorganic cations reported from 1988–1997. In addition to numerical values of $K^{pot}_{A,B}$, together with the methods and conditions for their determination, response slopes, linear concentration ranges, chemical compositions, and ionophore structures for the ISE membranes are tabulated.

INTRODUCTION

An earlier IUPAC data compilation of potentiometric selectivity coefficients, $K^{pot}_{A,B}$, for ion-selective electrodes (ISEs) was published in 1979 in *Pure and Applied Chemistry* [1]. It covered $K^{pot}_{A,B}$ data reported during 1966–1977 and was later followed by another extensive compilation of such data in a handbook from CRC Press [2]. The latter covered most of the $K^{pot}_{A,B}$ data reported during the years 1966–1988. An updated compilation reported in 1998 was limited to a number of particularly selective ionophores [3], which are lipophilic complexing agents that are incorporated into ISE membranes to selectively and reversibly bind analyte ions.

This paper presents the latest compilation of $K^{pot}_{A,B}$ data for liquid-membrane, inorganic-cation ISEs based on neutral and charged ionophores, reported between 1989 and the end of 1997. Moreover, this new compilation also contains some older data that had not been included in the CRC handbook. The presented $K^{pot}_{A,B}$ data are listed together with the methods and conditions for their determinations; also tabulated are response slopes, linear ranges, chemical compositions, and ionophore structures for the corresponding ISE membranes. This report constitutes the first part in a series. The second and third part, which will be published separately in forthcoming issues of *Pure and Applied Chemistry*, will cover ISEs for inorganic anions and organic ions, respectively.

METHODS FOR THE DETERMINATION OF POTENTIOMETRIC SELECTIVITY COEFFICIENTS [4–7]

Potentiometric selectivity coefficients can be measured with different methods that fall into two main groups, namely (1) mixed solution methods, and (2) separate solution methods. The most commonly used approach is the fixed interference method, which is a mixed solution method. This method was recommended by IUPAC in 1975 [4], but other approaches have also been frequently employed. The details of the definition of each method are given below.

The potentiometric selectivity coefficients are expressed according to the Nicolsky–Eisenman equation as

$$E = E_0 + R\,T / (z_A\,F) \ln [a_A + \sum_B K^{pot}_{A,B}\,(a_B)^{z_A/z_B}] \quad (1)$$

where E is the measured potential; E_0 is a constant that includes the standard potential of the electrode, the reference electrode potential, and the junction potential; z_A and z_B are charge numbers of the primary ion, A, and of the interfering ion, B; a_A and a_B are the activities of the primary ion, A, and the

interfering ion, B; and $K^{pot}_{A,B}$ is the potentiometric selectivity coefficient for the primary ion A against the interfering ion, B. R, T, and F have the usual meanings. If $K^{pot}_{A,B}$ is larger than 1, the ISE responds to the interfering ions more selectively than to the primary ions. In most cases, $K^{pot}_{A,B}$ is smaller than 1, which means that such ISEs respond to the primary ions more selectively than to interfering ions.

The Nicolsky–Eisenman equation assumes a Nernstian response not only for the primary ion but also for the interfering ion. Obviously, $K^{pot}_{A,B}$ is assumed to be constant. Several experimental methods for the determination of potentiometric selectivity coefficients are based on this equation. These methods will be explained in some detail in the following section. Notably, the Nicolsky–Eisenman equation does not correctly describe responses in the activity range in which primary and interfering ions of a different charge significantly contribute to the potential. More complex equations must be applied to describe correctly such mixed ion responses [8]. Among the four mixed solution methods, the matched potential method is unique in that it depends neither on the Nicolsky–Eisenman equation nor on any of its modifications; this method was recommended in 1995 by IUPAC as a method that gives analytically relevant practical $K^{pot}_{A,B}$ values [6].

Mixed solution methods

Fixed interference method (FIM)

The electromotive force (emf) of a cell comprising an ion-selective electrode and a reference electrode (ISE cell) is measured for solutions of constant activity of the interfering ion, a_B, and varying activity of the primary ion, a_A. The emf values obtained are plotted vs. the logarithm of the activity of the primary ion. The intersection of the extrapolated linear portions of this plot indicates the value of a_A that is to be used to calculate $K^{pot}_{A,B}$ from the following equation:

$$K^{pot}_{A,B} = a_A / (a_B)^{z_A/z_B} \tag{2}$$

where both z_A and z_B have the same signs, positive or negative.

Fixed primary ion method (FPM)

The emf of a cell comprising an ion-selective electrode and a reference electrode (ISE cell) is measured for solutions of constant activity of the primary ion, a_A, and varying activity of the interfering ion, a_B. The emf values obtained are plotted vs. the logarithm of the activity of the interfering ion. The intersection of the extrapolated linear portions of this plot indicates the value of a_B that is to be used to calculate $K^{pot}_{A,B}$ from the following equation:

$$K^{pot}_{A,B} = a_A / (a_B)^{z_A/z_B} \tag{3}$$

Two solution method (TSM)

This method involves measuring potentials of a pure solution of the primary ion, E_A, and a mixed solution containing the primary and interfering ions, E_{A+B}. The potentiometric selectivity coefficient is calculated by inserting the value of the potential difference, $\Delta E = E_{A+B} - E_A$, into the following equation:

$$K^{pot}_{A,B} = a_A(e^{\Delta E\, z_A\, F / (R\, T)} - 1) / (a_B)^{z_A/z_B} \tag{4}$$

Matched potential method (MPM)

This method does not depend on the Nicolsky–Eisenman equation at all. In this method, the potentiometric selectivity coefficient is defined as the activity ratio of primary and interfering ions that give the same potential change under identical conditions. At first, a known activity (a_A') of the primary ion solution is added into a reference solution that contains a fixed activity (a_A) of primary ions, and the corresponding potential change (ΔE) is recorded. Next, a solution of an interfering ion is added to the

reference solution until the same potential change (ΔE) is recorded. The change in potential produced at the constant background of the primary ion must be the same in both cases.

$$K^{pot}_{A,B} = (a_A' - a_A) / a_B \quad (5)$$

Separate solution methods

Separate solution method ($a_A = a_B$) (SSM)

The potential of a cell comprising an ion-selective electrode and a reference electrode is measured with two separate solutions, one containing the ion A at the activity a_A (but no B), the other one containing the ion B at the same activity $a_A = a_B$ (but no A). If the measured values are E_A and E_B, respectively, the value of is calculated from the equation:

$$\lg K^{pot}_{A,B} = \frac{(E_B - E_A)\, z_A F}{R\, T \ln 10} + (1 - z_A/z_B) \lg a_A \quad (6)$$

which is equivalent to

$$K^{pot}_{A,B} = a_A^{(1 - z_A/z_B)}\, e^{(E_B - E_A)\, z_A F / (R\, T)} \quad (7)$$

Separate solution method ($E_A = E_B$) [SSM ($E_A = E_B$)]

The log$a$ vs E relations of an ISE for the primary and interfering ions are obtained independently. Then, the activities that correspond to the same electrode potential value are used to determine the $K^{pot}_{A,B}$ value.

$$K^{pot}_{A,B} = a_A / (a_B)^{z_A/z_B} \quad (8)$$

ABBREVIATIONS

A complete list of abbreviations that are used in the following tables is given below.

$AcCh^+$	acetylcholine
BBPA	bis(1-butylpentyl) adipate
BEHS	bis(2-ethylhexyl) sebacate
c_{dl}	detection limit
CHEMFET	chemically modified field effect transistor
CP	chloroparaffin
CWE	coated wire electrode
DBE	dibenzyl ether
DBS	dibutyl sebacate
DBP	dibutyl phthalate
2,3-DMNB	2,3-dimethylnitrobenzene
DOA	bis(2-ethylhexyl) adipate
DOP	bis(2-ethylhexyl) phthalate {'dioctyl phthalate'}
DOPP	dioctyl phenylphosphonate
DOS	bis(n-octyl) sebacate
DPE	diphenyl ether
emf	electromotive force
ETH 500	tetradodecylammonium tetrakis(4-chlorophenyl)borate
ETH 5373	*o*-nitrophenyl dihydrophythyl ether

FIA	flow-injection analysis
FIM	fixed interference method
FNDPE	2-fluorophenyl 2-nitrophenyl ether
FPM	fixed primary ion method
ISE	ion-selective electrode
ISFET	ion-sensitive field effect transistor
KTFPB	potassium tetrakis[3,5-bis(trifluoromethyl)phenyl]borate
KTmClPB	potassium tetrakis(2-chlorophenyl)borate
KTPB	potassium tetraphenylborate
KTpClPB	potassium tetrakis(4-chlorophenyl)borate
M	mol dm^{-3}
MPM	matched potential method
MSM	mixed solution method
N	Nernstian
NaTFPB	sodium tetrakis[3,5-bis(trifluoromethyl)phenyl]borate
NaTpClPB	sodium tetrakis(4-chlorophenyl)borate
nN	near-Nernstian
pNP	4-nonylphenol
oNPOE	2-nitrophenyl octyl ether
oNPPE	2-nitrophenyl phenyl ether
$P_{o/w}$	partition coefficient, P, of the ionophore between 1-octanol and water
P_{TLC}	$P_{o/w}$ as estimated experimentally by use of thin-layer chromatography
PVC	poly(vinyl chloride)
PVC-COOH	poly(vinyl chloride) carboxylated
PVC-NH_2	poly(vinyl chloride) aminated
r.o.o.g.	read-out of graph (where data in original paper were in graphical rather than numerical form)
SSM	separate solution method (to be used for $a_A = a_B$ method)
SSM ($E_A = E_B$)	separate solution method (to be used for $E_A = E_B$ method)
τ	life time
t_{resp}	response time
t_{90}, t_{95}	time that elapses between the instant at which an ISE and a reference electrode are brought into contact with a new sample solution and the instant at which the potential has changed to a value corresponding to 90% or 95%, respectively, of the activity change
$TDDMA^+$	tridodecylmethylammonium
TDDMACl	tridodecylmethylammonium chloride
TEHP	tris(2-ethylhexyl) phosphate
TOPO	trioctylphosphine oxide
TSM	two solution method

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Table 1: H^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{H^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
H⁺-1	**H⁺-1** (w = 11.4 %), KTpClPB (x_i = 3.25 %), BEHS (w = 53.9 %), PVC (w = 33.1 %)	Na^+, –3.0; K^+, –2.4; Mg^{2+}, –4.1; Ca^{2+}, –3.8	FIM	–	0.1	–	–	–	[1]
H⁺-2	**H⁺-2** (w = 1.0 %), KTpClPB (x_i = 63 %), BEHS (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –10.4; K^+, –9.8; Ca^{2+}, <–11.1	FIM	–	1.0	57.8	$10^{-11.0}$–$10^{-4.5}$	20 °C	[2]
	H⁺-2 (w = 1.0 %), DOS (w = 65.6 %), PVC (w = 32.8 %), NaTpClPB (x_i = 65 %)	Na^+, –10.7; K^+, –10.1	FIM	–	1.0	56.9	$10^{-10.0}$–$10^{-4.0}$	25 °C	[3]
	H⁺-2 (w = 4.8 %), KTpClPB (x_i = 38 %), silicone rubber (w = 90.0 %), crosslinking agent KA–1 (w = 3.3 %)	Na^+, <–11.2; K^+, <–11.0; Ca^{2+}, <–10.2	FIM	–	1.00 ± 0.3	60.9	3×10^{-4}–10^{-11}	20 °C	[4]
	H⁺-2 (w = 2.3 %), DOS (w = 64.8 %), KTpClPB (x_i = 53 %), PVC (w = 32.4 %)	Na^+, –10.70; K^+, –10.50; Ca^{2+}, –9.90	FIM	–	–	–	–	ISFET	[5]
	H⁺-2 (w = 10 %), NaTPB (x_i = 11 %), PVC (w = 25 %), DBS (w = 64 %)	Na^+, –11.2; K^+, –10.5; Ca^{2+}, <–11.3	FIM	–	1.0	58.3	–		[6]
	H⁺-2 (w = 10 %), NaTPB (x_i = 11 %), DBS (w = 64.3 %), PVC–COOH (w = 25 %)	Na^+, –11.0; K^+, –10.5; Ca^{2+}, <–11.1	FIM	–	1.0	59.0	–		[6]
	H⁺-2 (w = 10 %), DBS (w = 64.3 %), PVC(w = 25 %), $C_{10}H_{21}COOH$ (x_i = 300 %), NaTPB (x_i = 10.7 %)	Na^+, –11.1; K^+, –10.9 ; Ca^{2+}, <–11.3	FIM	–	1.0	56.4	–		[6]
	H⁺-2 (w = 10 %), DBS (w = 64.3 %), PVC–NH_2 (w = 25 %), NaTPB (x_i = 10.7 %)	Na^+, –11.0; K^+, –10.7; Ca^{2+}, <–11.3	FIM	–	1.0	55.8	–		[6]
	H⁺-2 (w = 10 %), DBS (w = 64.3 %), PVC (w = 25 %), $C_{18}H_{37}NH_2$ (x_i = 93 %), NaTPB (x_i = 10.7 %)	Na^+, –11.0; K^+, –10.9; Ca^{2+}, <–11.4	FIM	–	1.0	52.7	–		[6]
	H⁺-2 (w = 10 %), NaTPB (x_i = 11 %), oNPOE (w = 89.3 %)	Na^+, –10.5; K^+, –9.8; Ca^{2+}, –11.1	–	–	–	64 57	10^{-4}–10^{-6} 10^{-6}–10^{-10}	t_{90} = 10 s; microelec.	[7]
	H⁺-2, PVC ($w \approx$ 26 %), DBS (w = 66 %), NaTPB (w = 0.7 %)	Na^+, –11.2; K^+, –10.5 ; Ca^{2+}, <–10.7	FIM	–	1.0 0.055	56.6	$10^{-10.7}$–$10^{-5.5}$		[8]

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Table 1: H^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{H^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	H$^+$-2 (w = 1.0 %), PVC (w = 32.4 %), KTpClPB (x_i = 51 %), oNPOE (w = 66.0 %)	Na^+, –10.4; K^+, –9.8; Ca^{2+}, <–11.1	FIM	–	–	–	–		[9]
	H$^+$-2 (w = 1.0 %), PVC (w = 32.4 %), oNPOE (w = 66.0 %), KTpClPB (x_i = 70 %)	Li^+, <–10.8; Na^+, –10.4; K^+, –9.8; Ca^{2+}, –11.1	–	–	–	57.4	10^{-12}–10^{-5}		[10]
	H$^+$-2 (w = 1.5 %), DOS (w = 8.0 %), KTpClPB (x_i = 49 %), aliphatic polyurethane (w = 89.8 %)	Na^+, –9.1; K^+, –9.3; Ca^{2+}, –9.1	FIM	–	Na^+, 0.140; K^+, 0.200; Ca^{2+}, 0.100	58.6 ± 1.0	$10^{-6.5}$–$10^{-8.0}$	c_{dl} = $10^{-10.0}$ M; 22.0 ± 1.0 °C	[11]
	H$^+$-2 (w = 1.5 %), DOS (w = 8.0 %), KTpClPB (x_i = 49 %), aliphatic polyurethane (w = 89.8 %), coated with poly(ethylene oxide)	Na^+, –9.0; K^+, –9.1; Ca^{2+}, –9.1	FIM	–	Na^+, 0.140; K^+, 0.200; Ca^{2+}, 0.100	55.8 ± 1.9	$10^{-6.5}$–$10^{-8.0}$	c_{dl} = $10^{-9.9}$ M; 22.0 ± 1.0 °C	[11]
	H$^+$-2 (w = 1.5 %), DOS (w = 8.0 %), KTpClPB (x_i = 49 %), aliphatic polyurethane (w = 79.8 %), Pluronic F108 (w = 10.0 %)	Na^+, –8.5; K^+, –8.6; Ca^{2+}, –8.9	FIM	–	Na^+, 0.140; K^+, 0.200; Ca^{2+}, 0.100	53.9 ± 0.7	$10^{-6.5}$–$10^{-8.0}$	c_{dl} = $10^{-9.4}$ M; 22.0 ± 1.0 °C	[11]
H$^+$-3	**H$^+$-3** (w = 1.0 %), BEHS (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –10.1; K^+, –9.6	FIM	–	1.0	58.0	$10^{-9.5}$–$10^{-4.5}$	25 °C	[3]
	H$^+$-3 (w = 1.0 %), PVC (w = 32.8 %), BEHS (w = 65.6 %), NaTpClPB (x_i = 37 %)	Na^+, –10.7; K^+, –10.1	FIM	–	1.0	56.9	$10^{-10.0}$–$10^{-4.0}$	25 °C	[3]
	H$^+$-3 (w = 1.0 %), PVC (w = 32.8 %), BEHS (w = 65.6 %), KTpClPB (x_i = 36 %)	Na^+, –11.1; K^+, –10.7	FIM	–	1.0	59.9	$10^{-11.0}$–$10^{-4.0}$	25 °C	[3]
H$^+$-4	**H$^+$-4** (w = 1 %), PVC (w = 30 %), KTpClPB ($x_i \approx$ 70 %), oNPOE (w = 69 %)	Li^+, <–11.2; Na^+, –10.5; K^+, –9.4	FIM		Li^+, 0.06; Na^+, 0.14; K^+, 0.20	–	–	20 °C; $\lg P_{TLC}$ = 13.8	[12]
H$^+$-5	**H$^+$-5** (w = 1 %), PVC (w = 30 %), KTpClPB ($x_i \approx$ 70 %), oNPOE (w = 69 %)	Li^+, –6.9 ; Na^+, –5.6;	FIM	–	–	–	–	20 °C; $\lg P_{TLC}$ = 15.2	[12]
	H$^+$-5 (w = 1 %), oNPOE (w = 68 %), PVC (w = 30 %), KTpClPB (x_i = 76 %)	Li^+, –6.9; Na^+, –5.6; K^+, –4.4	FIM	–	Li^+, 0.06; Na^+, 0.14; K^+, 0.20	–	–	20 °C; microelec.	[13]
H$^+$-6	**H$^+$-6** (w = 6 %), KTPB (x_i = 29 %), oNPOE (w = 54.9 %), PVC (w = 36.1 %)	Na^+, –8.55; K^+, –8.40; Ca^{2+}, –9.45	FIM	–	0.1	–	$10^{-8.5}$–$10^{-1.6}$	20 °C	[14]

Table 1: H^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{H^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
H⁺-7	**H⁺-7** (w = 6 %), KTPB (x_i = 37 %), oNPOE (w = 54.9 %), PVC (w = 36.1 %)	Na^+, –8.50; K^+, –8.25; Ca^{2+}, –9.50	FIM	–	0.1	–	$10^{-8.5}$–$10^{-1.6}$	20 °C	[14]
H⁺-8	**H⁺-8** (w = 6 %), KTPB (x_i = 45 %), oNPOE (w = 54.9 %), PVC (w = 36.1 %)	Na^+, –8.45; K^+, –8.40; Ca^{2+}, –9.45	FIM	–	0.1	–	$10^{-8.5}$–$10^{-1.6}$	20 °C	[14]
H⁺-9	**H⁺-9** (w = 1.0 %), PVC (w = 32.4 %), KTpClPB (x_i = 51 %), oNPOE (w = 66.0 %)	Li^+, <–10.8; Na^+, –10.9; K^+, –10.5; Ca^{2+}, <–11.2	FIM	–	–	58.2	10^{-12}–10^{-4}	t_{resp} < 10 s	[9]
	H⁺-9 (w = 1.0 %), PVC (w = 32.4 %), oNPOE (w = 66.0 %), KTpClPB (x_i = 70 %)	Li^+, <–10.8; Na^+, –10.9; K^+, –10.5; Ca^{2+}, <–11.2	–	–	–	58.2	10^{-12}–10^{-4}		[10]
	H⁺-9 , $PVC–NH_2$, oNPOE (weight ratio not reported)	Li^+, <–10.9; Na^+, –11.1; K^+, –10.5; Ca^{2+}, –11.2	FIM	–	Li^+, 0.060; Na^+, 0.140; K^+, 0.200; Ca^{2+}, 0.150	58.9 ± 0.2	10^{-4}–10^{-12}	c_{dl} < 10^{-12} M; 22.5 ± 0.5 °C	[15]
	H⁺-9 (w = 2 %), oNPOE (w = 64.7 %), KTpClPB (x_i = 49 %), aliphatic polyurethane (w = 32.3 %)	Li^+, –10.7; Na^+, –10.6; K^+, –10.6	FIM	–	Li^+, 0.060; Na^+, 0.140; K^+, 0.200	58.1	10^{-4}–10^{-11}	25.0 ± 0.5 °C	[16]
	H⁺-9 (w = 2 %), BEHS (w = 64.7 %), KTpClPB (x_i = 49 %), aliphatic polyurethane (w = 32.3 %)	Li^+, –10.2; Na^+, –10.4; K^+, –10.4	FIM	–	Li^+, 0.060; Na^+, 0.140; K^+, 0.200	57.8	10^{-11}–10^{-4}	25.0 ± 0.5 °C	[16]
H⁺-10	**H⁺-10** (w = 1.0 %), KTpClPB (x_i = 51 %), oNPOE (w = 66.0 %), PVC (w = 32.4 %)	Li^+, –9.3; Na^+, –8.8; K^+, –7.4; Ca^{2+}, –9.9	FIM	–	–	59.1	$10^{-10.5}$–10^{-2}	t_{resp} < 10 s	[9]
	H⁺-10 (w = 1.0 %), oNPOE (w = 66.0 %), KTpClPB (x_i = 70 %), PVC (w = 32.4 %)	Li^+, –9.3; Na^+, –8.8; K^+, –7.4; Ca^{2+}, –9.9	–	–	–	59.1	$10^{-10.5}$–10^{-2}		[10]
H⁺-11	**H⁺-11** (w = 2.5 %), PVC (w = 30 %), KTmClPB (x_i = 65 %), oNPOE (w = 66.5 %)	Li^+, <–12.4; Na^+, –12.3; K^+, –10.8; Ca^{2+}, <–11.7	FIM	–	1.0	57.4	$10^{-13.2}$–$10^{-1.7}$	τ > 30 d	[17]
H⁺-12	**H⁺-12** (w = 1.0 %), oNPOE (w = 66.0 %), PVC (w = 32.4 %), KTpClPB (x_i = 70 %)	Li^+, <–10.8; Na^+, <–11; K^+, <–11; Ca^{2+}, <–11.2	–	–	–	57.7	10^{-12}–10^{-4}		[10]

continues on next page

Table 1: H^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{H^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
H^+-13	**H^+-13** (0.7M), KTpClPB (0.001 M), PVC and DOP (1:3 by weight)	Li^+, –5.3; Na^+, –5.3; K^+, –6.2; Cu^{2+}, –5.0; NH_4^+, –4.7	SSM, MSM	–	–	–	10^{-6}– 1		[18]
H^+-14	**H^+-14** (w = 2.5 %), PVC–COOH (w = 32.5 %), oNPOE (w = 65.0 %)	Li^+, –1.77; Na^+, –1.38; K^+, –0.19; NH_4^+, –0.52; Ca^{2+}, –1.36	SSM	0.1	0.1	59.2	–	22.5 ± 0.5 °C	[19]
H^+-15	PVC–COOH (w = 33.3 %), oNPOE (w = 66.7 %)	Li^+, –1.56; Na^+, –1.32; K^+, –1.13; NH_4^+, –1.13; Ca^{2+}, –1.46	SSM	0.1	0.1	63.6	10^{-5}–10^{-2}	22.5 ± 0.5 °C	[19]
	PVC–COOH (w = 33.3 %), BEHS (w = 66.7 %)	Li^+, –1.08; Na^+, –0.79; K^+, –0.33; NH_4^+, –0.46; Ca^{2+}, –2.13	SSM	0.1	0.1	54.3	10^{-5}–10^{-2}	22.5 ± 0.5 °C	[19]
	TDABr (w = 0.3 %), PVC–COOH (w = 33.2 %), oNPOE (w = 66.5 %)	Na^+, –1.81; K^+, –1.62; NH_4^+, –1.58	SSM	0.1	0.1	–	–	22.5 ± 0.5 °C	[19]
H^+-16	**H^+-16** (w = 8.7 %), KTpClPB (x_i = 12.0 %), oNPOE (w = 36.1 %), CP (w = 18.2 %), PVC (w = 36.2 %)	Na^+, –8.0; K^+, –7.4 ; Ca^{2+}, <–7.8	–	–	–	–	10^{-10}–10^{-1}	t_{resp} < 10 s; τ > 135 d	[20]
H^+-17	**H^+-17** (9.6 mmol/kg), TDDMACl (x_i = 50 %), PVC and oNPOE (1:2 by weight)	K^+, –8.3	FIM	–	0.77	58.5	10^{-10}–$10^{-3.5}$		[21]
	H^+-17 (9.6 mmol/kg), KTpClPB (x_i = 50 %), PVC and oNPOE (1:2 by weight)	K^+, –1.5	FIM	–	0.77	–	$>10^{-3}$		[21]
H^+-18	aliphatic polyurethane (w = 33.3 %), oNPOE (w = 66.7 %)	Li^+, –2.19; Na^+, –2.08; K^+, –1.95; NH_4^+, –2.04; Ca^{2+}, –2.47	SSM	10^{-3}	10^{-3}	43.3	10^{-5}–10^{-3}	25.0 ± 0.5 °C	[16]

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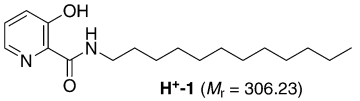
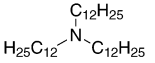
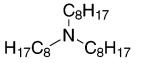


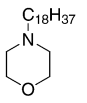
H$^+$-1 (M_r = 306.23)



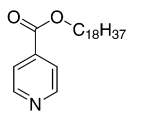
H$^+$-2 (M_r = 522.00)



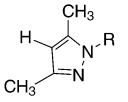
H$^+$-3 (M_r = 353.67)



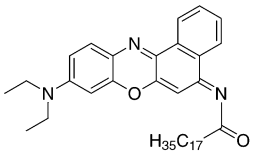
H$^+$-4 (M_r = 339.60)



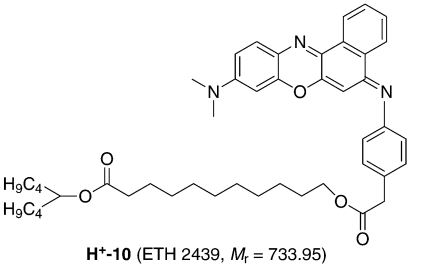
H$^+$-5 (M_r = 375.59)



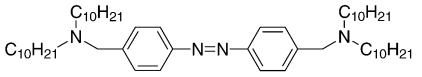
H$^+$-6 (M_r = 208.35): R=C_8H_{17}
H$^+$-7 (M_r = 264.45): R=$C_{12}H_{25}$
H$^+$-8 (M_r = 320.56): R=$C_{16}H_{33}$



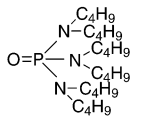
H$^+$-9 (ETH 5294, M_r = 583.87)



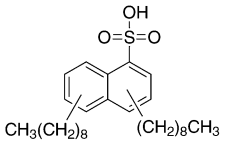
H$^+$-10 (ETH 2439, M_r = 733.95)



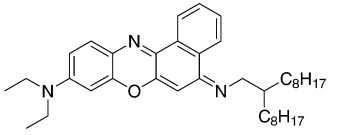
H$^+$-11 (M_r = 801.38)



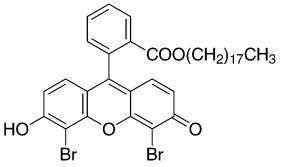
H$^+$-13 (M_r = 431.69)



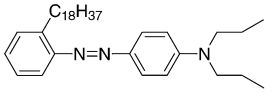
H$^+$-14 (M_r = 460.72)



H$^+$-12 (ETH 5350, M_r = 569.87)



H$^+$-17 (ETH 7075, M_r = 742.59)



H$^+$-16 (ETH 2418, M_r = 533.88)

Table 2: Li^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li$^+$-1	**Li$^+$-1** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Na^+, –0.4; K^+, –0.4; Rb^+, –1.0; Cs^+, –0.6; NH_4^+, –0.2; Mg^{2+}, –0.8; Ca^{2+}, –0.8; Sr^{2+}, –0.7; Ba^{2+}, –0.7	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Li$^+$-2	**Li$^+$-2** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Na^+, –2.1; K^+, –2.2; Rb^+, –2.3; Cs^+, –2.3; NH_4^+, –2.2; H^+, +0.8; Mg^{2+}, –3.5; Ca^{2+}, –2.8; Sr^{2+}, –3.1; Ba^{2+}, –3.0	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1–1.4 %), PVC (w = 33 %), oNPOE (w = 65.6 %), KTpClPB (x_i = 30 %)	Na^+, –2.2; K^+, –2.2; Rb^+, –2.2; Cs^+, –2.1; NH_4^+, –2.2; H^+, +0.9; Mg^{2+}, –3.0; Ca^{2+}, –1.8; Sr^{2+}, –1.9; Ba^{2+}, –1.8	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1.4 %), PVC (w = 33 %), oNPOE (w = 65.6 %)	Na^+, –2.0; K^+, –2.2; Mg^{2+}, –3.8; Ca^{2+}, –2.6	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 20 %), PVC ($w \approx$ 33 %)	Na^+, –2.2; K^+, –2.2; Mg^{2+}, –3.4; Ca^{2+}, –1.9	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 33 %), PVC ($w \approx$ 33 %)	Na^+, –2.3; K^+, –2.2; Mg^{2+}, –2.9; Ca^{2+}, –1.7	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 40 %), PVC ($w \approx$ 33 %)	Na^+, –2.2; K^+, –2.0; Mg^{2+}, –3.2; Ca^{2+}, –1.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 45 %), PVC ($w \approx$ 33 %)	Na^+, –2.0; K^+, –1.8; Mg^{2+}, –3.2; Ca^{2+}, –1.3	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 50 %), PVC ($w \approx$ 33 %)	Na^+, +0.3; K^+, +1.2; Mg^{2+}, –0.7; Ca^{2+}, +0.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 66 %), PVC ($w \approx$ 33 %)	Na^+, +0.6; K^+, +1.4; Mg^{2+}, –0.2; Ca^{2+}, +0.8	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li$^+$-2 (w = 1 %), oNPOE ($w \approx$ 65.6 %),	Na^+, +0.6; K^+, +1.6; Mg^{2+}, +0.2; Ca^{2+}, +1.2	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i = 85 %), PVC ($w \approx$ 33 %)								
	Li^+-2 (w = 1 %), PVC ($w \approx$ 33 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 100 %)	Na^+, +0.6; K^+, +1.8; Mg^{2+}, +0.6; Ca^{2+}, +1.4	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li^+-2 (w = 1 %), PVC ($w \approx$ 33 %), oNPOE ($w \approx$ 65.6 %), KTpClPB (x_i = 120 %)	Na^+, +0.6; K^+, +1.7; Mg^{2+}, +0.3; Ca^{2+}, +1.6	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li^+-2 (w = 1–2 %), oNPOE (w = 64–66 %), KTpClPB (x_i = 20 %), PVC (w = 31–33 %)	Na^+, –2.1; K^+, –2.2; Mg^{2+}, –3.0; Ca^{2+}, –1.8	SSM	0.1	0.1	–	–	21 ± 1 °C	[2]
Li^+-3	**Li^+-3** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Na^+, –1.6; K^+, –1.7; Rb^+, –2.2; Cs^+, –2.2; NH_4^+, –2.0; H^+, +1.1; Mg^{2+}, –3.2; Ca^{2+}, –3.1; Sr^{2+}, –3.2; Ba^{2+}, –3.0	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li^+-3 (w = 1 %), PVC (w = 33 %), oNPOE (w = 65.6 %), KTpClPB (x_i = 30 %)	Na^+, –1.3; K^+, –1.4; Rb^+, –1.7; Cs^+, –1.6; NH_4^+, –1.6; H^+, +2.2; Mg^{2+}, –3.3; Ca^{2+}, –2.6; Sr^{2+}, –2.8; Ba^{2+}, –2.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Li^+-4	**Li^+-4** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Na^+, –2.3; K^+, –2.4; Rb^+, –2.4; Cs^+, –2.5; NH_4^+, –2.4; H^+, +0.6; Mg^{2+}, –3.8; Ca^{2+}, –3.2; Sr^{2+}, –3.6; Ba^{2+}, –3.4	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Li^+-4 (w = 1 %), oNPOE (w = 65.6 %), KTpClPB (x_i = 30 %), PVC (w = 33 %)	Na^+, –2.3; K^+, –2.6; Rb^+, –2.8; Cs^+, –2.8; NH_4^+, –2.5; H^+, +1.1; Mg^{2+}, –4.0; Ca^{2+}, –2.8; Sr^{2+}, –2.9; Ba^{2+}, –2.8	SSM	0.1	0.1	57	10^{-4} –10^{-1}	20–22 °C; r.o.o.g.	[1]
		Na^+, –2.5	FIM	–	0.14				
	Li^+-4 (w = 1–2 %), oNPOE (w = 64–66 %), KTpClPB (x_i = 20 %), PVC (w = 31–33 %)	Na^+, –2.3; K^+, –2.6; Mg^{2+}, –4.0; Ca^{2+}, –2.7	SSM	0.1	0.1	–	–	21 ± 1 °C	[2]
	Li^+-4 (w = 1.2 %), oNPOE (w = 65.8 %),	Na^+, –2.3; K^+, –2.6; NH_4^+, –2.6; Mg^{2+}, –2.3; Ca^{2+}, –3.5	MPM	–	Δc_B = 0.1	57.7	–	artificial serum	[3]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i = 26 %), PVC (w = 33 %)							background†; $c_{dl} = 10^{-5.23}$ M	
	Li^+-4 (w = 1.4 %), oNPOE (w = 66 %), KTpClPB (x_i = 50 %),	Na^+, –1.89; K^+, –2.00; Rb^+, –1.92; Cs^+, –1.74; Mg^{2+}, –2.59; Ca^{2+}, –2.07; Sr^{2+}, –2.10	SSM	0.1	0.1	–	–		[4]
	PVC (w = 33 %)	Na^+, –1.96; K^+, –2.37; Rb^+, –2.17; Cs^+, –2.24; Mg^{2+}, <–3.70; Ca^{2+}, –2.05; Sr^{2+}, –2.08	MPM	–	$\Delta c_B = 0.1$			calculated from the formula: $K_{A,B} = c_A/c_B^{(1/z_B)}$	
	Li^+-4 (w = 1.4 %), o-nitrophenyl pentyl ether (w = 66 %), KTpClPB (x_i = 50 %),	Na^+, –1.70; K^+, –1.82; Rb^+, –1.66; Cs^+, –1.43; Mg^{2+}, –1.89; Ca^{2+}, –1.42; Sr^{2+}, –1.14	SSM	0.1	0.1	–	–		[4]
	PVC (w = 33 %)	Na^+, –1.70; K^+, –1.89; Rb^+, –1.85; Cs^+, –1.80; Mg^{2+}, –2.85; Ca^{2+}, –1.34; Sr^{2+}, –1.49	MPM	–	$\Delta c_B = 0.1$			calculated from the formula: $K_{A,B} = c_A/c_B^{(1/z_B)}$	
Li^+-5	**Li^+-5** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 55.6 %), PVC (w = 28.1 %)	Na^+, –1.8; K^+, –1.7; Rb^+, –1.9; Cs^+, –1.9; H^+, –3.2	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.7; Mg^{2+}, –4.9; Ca^{2+}, –3.19; Sr^{2+}, –3.1; Ba^{2+}, –3.2		–	0.5				
Li^+-6	**Li^+-6** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 57.7 %), PVC (w = 28.1 %)	Na^+, –2.2; K^+, –1.9; Rb^+, –2.2; Cs^+, –2.0; H^+, –3.3	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.9; Mg^{2+}, –5.0; Ca^{2+}, –4.3; Sr^{2+}, –4.1; Ba^{2+}, –4.1		–	0.5				
Li^+-7	**Li^+-7** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 64.0 %), PVC (w = 28.1 %)	Na^+, –1.9; K^+, –1.7; Rb^+, –2.1; Cs^+, –1.9; H^+, –3.2	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –3.0; Mg^{2+}, –4.4; Ca^{2+}, –4.4; Sr^{2+}, –4.2; Ba^{2+}, –4.3		–	0.5				
Li^+-8	**Li^+-8** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 80.7 %), PVC (w = 28.1 %)	Na^+, –2.0; K^+, –1.9; Rb^+, –1.6; Cs^+, –1.5; H^+, –2.9	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.4; Mg^{2+}, –4.3; Ca^{2+}, –4.5; Sr^{2+}, –4.2; Ba^{2+}, –4.2		–	0.5				
Li^+-9	**Li^+-9** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 69.0 %), PVC (w = 28.1 %)	Na^+, –2.2; K^+, –1.9; Rb^+, –2.0; Cs^+, –1.8; H^+, –3.4	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.9; Mg^{2+}, –4.5; Ca^{2+}, –4.8; Sr^{2+}, –4.6; Ba^{2+}, –4.7		–	0.5				

† artificial serum background: NaH_2PO_4, 8 mM; Na_2HPO_4, 1.5 mM; $CaCl_2$, 2.0 mM; $MgCl_2$, 0.8 mM; KCl, 4.5 mM; NH_4Cl, 0.05 mM; glucose, 4.7 mM; urea, 2.5 mM; NaCl, 135 mM; 145 mM; and 155 mM.

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li^+-10	**Li^+-10** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 57.4 %), PVC (w = 28.1 %)	Na^+, –2.3; K^+, –2.1; Rb^+, –2.1; Cs^+, –1.7; H^+, –3.0	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.95; Mg^{2+}, –4.3; Ca^{2+}, –4.7; Sr^{2+}, –4.4; Ba^{2+}, –4.5		–	0.5				
	Li^+-10 (w = 1 %), oNPOE (w = 70.8 %), KTpClPB (x_i = 54 %), PVC (w = 28.2 %)	Na^+, –2.3; K^+, –2.3; NH_4^+, –2.9; Mg^{2+}, –3.8; Ca^{2+}, –4.5	MPM	–	Δc_B = 0.1	59.7	–	artificial serum background†; $c_{dl} = 10^{-5.61}$ M	[3]
Li^+-11	**Li^+-11** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 64.3 %), PVC (w = 28.1 %)	Na^+, –1.95; K^+, –1.7; Rb^+, –2.4; Cs^+, –2.1; H^+, –3.7	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –3.0; Mg^{2+}, –4.6; Ca^{2+}, –4.65; Sr^{2+}, –4.2; Ba^{2+}, –4.4		–	0.5				
Li^+-12	**Li^+-12** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 70.8 %), PVC (w = 28.1 %)	Na^+, –1.9; K^+, –2.15; Rb^+, –2.2; Cs^+, –2.0; H^+, –3.3	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.9; Mg^{2+}, –4.9; Ca^{2+}, –4.6; Sr^{2+}, –4.4; Ba^{2+}, –4.3		–	0.5				
Li^+-13	**Li^+-13** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 75.5 %), PVC (w = 28.1 %)	Na^+, –2.2; K^+, –2.25; Rb^+, –2.2; Cs^+, –1.6; H^+, –3.0	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.7; Mg^{2+}, –4.6; Ca^{2+}, –3.9; Sr^{2+}, –3.5; Ba^{2+}, –3.55		–	0.5				
Li^+-14	**Li^+-14** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 68.4 %), PVC (w = 28.1 %)	Na^+, –1.9; K^+, –1.6; Rb^+, –1.9; Cs^+, –1.45; H^+, –2.3	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.6; Mg^{2+}, –4.7; Ca^{2+}, –4.55; Sr^{2+}, –4.5; Ba^{2+}, –4.2		–	0.5				
Li^+-15	**Li^+-15** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 82.5 %), PVC (w = 28.1 %)	Na^+, –2.3; K^+, –2.5; Rb^+, –2.55; Cs^+, –2.45; H^+, –3.2	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –3.0; Mg^{2+}, –4.5; Ca^{2+}, –4.0; Sr^{2+}, –4.0; Ba^{2+}, –3.6		–	0.5				
Li^+-16	**Li^+-16** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 81.1 %), PVC (w = 28.1 %)	Na^+, –1.5; K^+, –1.7; Rb^+, –2.2; Cs^+, –1.1	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –1.8; Mg^{2+}, –3.1; Ca^{2+}, –3.5; Sr^{2+}, –2.9; Ba^{2+}, –2.95		–	0.5				
Li^+-17	**Li^+-17** (w = 1.0 %), oNPOE (w = 70.2 %),	Na^+, –2.05; K^+, –2.0; Rb^+, –1.9; Cs^+, –1.4; H^+, –2.5	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]

† artificial serum background: NaH_2PO_4, 8 mM; Na_2HPO_4, 1.5 mM; $CaCl_2$, 2.0 mM; $MgCl_2$, 0.8 mM; KCl, 4.5 mM; NH_4Cl, 0.05 mM; glucose, 4.7 mM; urea, 2.5 mM; NaCl, 135 mM; 145 mM; and 155 mM.

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i = 66.3 %), PVC (w = 28.1 %)	NH_4^+, –3.0; Mg^{2+}, –4.7; Ca^{2+}, –4.65; Sr^{2+}, –4.4; Ba^{2+}, –4.35		–	0.5				
Li^+-18	**Li^+-18** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 72.5 %), PVC (w = 28.1 %)	Na^+, –2.35; K^+, –2.5; Rb^+, –2.8; Cs^+, –2.4; H^+, –0.5	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –3.0; Mg^{2+}, –4.6; Ca^{2+}, –3.55; Sr^{2+}, –3.9; Ba^{2+}, –3.2		–	0.5				
Li^+-19	**Li^+-19** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 72.9 %), PVC (w = 28.1 %)	Na^+, –1.7; K^+, –2.0; Rb^+, –2.2; Cs^+, –1.5; H^+, –3.4	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.95; Mg^{2+}, –4.65; Ca^{2+}, –4.4; Sr^{2+}, –4.5; Ba^{2+}, –4.55		–	0.5				
Li^+-20	**Li^+-20** (w = 1.0 %), oNPOE (w = 70.2 %), KTpClPB (x_i = 116 %), PVC (w = 28.1 %)	Na^+, –0.8; K^+, –0.5; Rb^+, –1.2; Cs^+, –0.9; H^+, –2.8	FIM	–	0.05	59–60	–	25 °C; r.o.o.g.	[5]
		NH_4^+, –2.4; Mg^{2+}, –4.4; Ca^{2+}, –4.2; Sr^{2+}, –4.3; Ba^{2+}, –4.1		–	0.5				
Li^+-21	**Li^+-21** (w = 3 %), DBE (w = 66 %), KTpClPB (x_i = 46 %), PVC (w = 30 %)	Na^+, –1.05; K^+, –1.9; Rb^+, –2.6; Cs^+, –2.2; Mg^{2+}, –4.7; Ca^{2+}, –4.4; Sr^{2+}, –4.4; Ba^{2+}, –4.3	FIM	–	0.1	60	–	25 °C; r.o.o.g.	[6]
	Li^+-21 (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 46 %), PVC (w = 26 %)	Na^+, –0.88; K^+, –1.6; Cs^+, –2.4; Rb^+, –2.4; Mg^{2+}, –5.0; Ca^{2+}, –4.8; Sr^{2+}, –4.8; Ba^{2+}, –5.1	SSM	0.1	0.1	–	–		[7]
Li^+-22	**Li^+-22** (w = 3 %), DBE (w = 66 %), KTpClPB (x_i = 49 %), PVC (w = 30 %)	Na^+, –1.5; K^+, –2.5; Rb^+, –2.7; Cs^+, –2.0; Mg^{2+}, –4.7; Ca^{2+}, –4.7; Sr^{2+}, –4.7; Ba^{2+}, –4.6	FIM	–	0.1	60	–	25 °C; r.o.o.g.	[6]
	Li^+-22 (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 49 %), PVC (w = 26 %)	Na^+, –1.6; K^+, –2.6; Rb^+, –2.7; Cs^+, –2.8; Mg^{2+}, –5.0; Ca^{2+}, –4.9; Sr^{2+}, –4.9; Ba^{2+}, –4.9	SSM	0.1	0.1	–	–		[7]
Li^+-23	**Li^+-23** (w = 3 %), DBE (w = 66 %), KTpClPB (x_i = 50.4 %), PVC (w = 30 %)	Na^+, –1.2; K^+, –1.7; Rb^+, –1.7; Cs^+, –1.6; Mg^{2+}, –1.5; Ca^{2+}, +0.1; Sr^{2+}, –0.6; Ba^{2+}, –0.5	FIM	–	0.1	60	–	25 °C; r.o.o.g.	[6]
Li^+-24	**Li^+-24** (w = 3 %), DBE (w = 66 %), KTpClPB (x_i = 51 %),	Na^+, –1.3; K^+, –1.9; Rb^+, –2.0; Cs^+, –1.9; Mg^{2+}, –2.9;	FIM	–	0.1	60	–	25 °C; r.o.o.g.	[6]
	PVC (w = 30 %)	Ca^{2+}, –2.0; Sr^{2+}, –2.7; Ba^{2+}, –2.7							
Li^+-25	**Li^+-25** (w = 1.5 %), KTpClPB (x_i = 52.9 %),	Na^+, –0.96; K^+, –0.89	MPM	–	Δc_{Na} = 0.1	59	–	14 mM NaCl background	[8]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 64.7 %), PVC (w = 32.8 %)	Na^+, –0.80	FIM	–	0.014	–	–		
		Na^+, –1.05; K^+, –0.89	SSM	–	–	–	–	14 mM NaCl background	
		Na^+, –0.60; K^+, –0.80	MPM	–	Δc_{Na} = 0.1	58	–	2.4 mM $MgCl_2$	
		Na^+, –0.60			Δc_{Na} = 0.05			background	
		Na^+, –1.0; K^+, –1.09	MPM	–	Δc_{Na} = 0.1	55	–	5.5 mM KCl	
		Na^+, –1.0			Δc_{Na} = 0.05			background	
		K^+, –0.85	FIM	–	0.0055	–	–		
		K^+, –0.82	FIM (18 mV†)	–	0.0055	–	–		
		Na^+, –1.0	MPM	–	Δc_{Na} = 0.13	58	–	10 mM NaCl	
		Na^+, –1.03; K^+, –1.0			Δc_{Na} = 0.06			background	
		Na^+, –1.0			Δc_{Na} = 0.01				
		Na^+, –1.0	FIM	–	0.01	–	–		
		Na^+, –1.0	FIM (18 mV†)	–	0.01	–	–		
		Na^+, –1.03; K^+, –1.10	MPM	–	Δc_{Na} = 0.12	54	–	20 mM NaCl	
		Na^+, –1.08			Δc_{Na} = 0.05			background	
		Na^+, –1.03	FIM	–	0.02	–	–		
		Na^+, –1.07	FIM (18 mV†)		0.02 –				
		Na^+, –1.10; K^+, –1.26	MPM	–	Δc_{Na} = 0.08	48	–	70 mM NaCl	
		Na^+, –1.11			Δc_{Na} = 0.07			background	
		Na^+, –1.10	FIM	–	0.07	–	–		
		Na^+, –1.19	FIM (18 mV†)	–	0.07	–	–		
		Na^+, –1.22; K^+, –1.96	MPM	–	Δc_{Na} = 0.1	46	–	140 mM NaCl	
		Na^+, –1.82			Δc_{Na} = 0.01			background	
		Na^+, –1.48	FIM	–	0.14		–		
		Na^+, –1.80	FIM (18 mV†)	–	0.14		–		
Li^+-26	**Li^+-26** (w = 1.5 %), KTpClPB (x_i = 70.3 %),	Na^+, –0.74 Na^+, –0.79	SSM	0.1 0.05	0.1 0.05	–	–		[8]

† M. Yamauchi, A. Jyo, N. Ishibashi, Anal. Chim. Acta, 136 (1982) 399.

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 64.7 %),	Na^+, –0.72; K^+, –0.74	MPM	–	Δc_{Na} = 0.1	60	–	14 mM NaCl	
	PVC (w = 32.8 %)	Na^+, –0.72			Δc_{Na} = 0.05			background	
		Na^+, –0.60	FIM	–	0.014		–		
		Na^+, –0.52; K^+, –0.72	MPM	–	Δc_{Na} = 0.1	53	–	2.4 mM $MgCl_2$	
		Na^+, –0.54			Δc_{Na} = 0.05			background	
		Na^+, –0.82; K^+, –0.70	MPM	–	Δc_{Na} = 0.1	62	–	5.5 mM KCl	
		Na^+, –0.82			Δc_{Na} = 0.05			background	
		K^+, –0.39	FIM	–	0.0055	–	–		
		K^+, –0.35	FIM (18 mV†)	–	0.0055	–	–		
		Na^+, –0.82; K^+, –0.82	MPM	–	Δc_{Na} = 0.13	61	–	10 mM NaCl	
		Na^+, –0.85			Δc_{Na} = 0.06			background	
		Na^+, –0.92			Δc_{Na} = 0.01			10 mM NaCl	
		Na^+, –0.80	FIM	–	0.01		–	background	
		Na^+, –0.80	FIM (18 mV†)	–	0.01		–		
		Na^+, –0.85; K^+, –0.52	MPM	–	Δc_{Na} = 0.12	60	–	20 mM NaCl	
		Na^+, –0.89			Δc_{Na} = 0.05			background	
		Na^+, –0.89	FIM	–	0.02		–		
		Na^+, –1.0	FIM (18 mV†)	–	0.02		–		
		Na^+, –0.62; K^+, –0.60	MPM	–	Δc_{Na} = 0.07	53	–	70 mM NaCl	
		Na^+, –0.82			Δc_{Na} = 0.03			background	
		Na^+, –1.01	FIM	–	0.07		–		
		Na^+, –1.10	FIM (18 mV†)	–	0.07		–		
		Na^+, –1.03; K^+, –0.96	MPM	–	Δc_{Na} = 0.1	53	–	140 mM NaCl	
		Na^+, –1.3			Δc_{Na} = 0.01			background	
		Na^+, –1.12	FIM	–	0.14		–		
		Na^+, –1.14	FIM (18 mV†)	–	0.14	–	–		
	Li^+-26 (w = 1.4 %), oNPOE (w = 66 %), KTpClPB (x_i = 50 %),	Na^+, –1.64; K^+, –1.85; Rb^+, –1.89; Cs^+, –1.79; Mg^{2+}, –3.34; Ca^{2+}, –2.30; Sr^{2+}, –2.60	SSM	0.1	0.1	–	–		[4]

† M. Yamauchi, A. Jyo, N. Ishibashi, Anal. Chim. Acta, 136 (1982) 399.

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 33 %)	Na^+, –1.54; K^+, –1.77; Rb^+, –1.89; Cs^+, –1.72; Mg^{2+}, –3.49; Ca^{2+}, –2.21; Sr^{2+}, –2.55	MPM	–	Δc_B = 0.1	–	–	calculated from the formula: $K_{A,B} = c_A/c_B^{(1/z_B)}$	
	Li^+-26 (w = 1.4 %), *o*-nitrophenyl pentyl ether (w = 66 %), KTpClPB (x_i = 50 %),	Na^+, –1.70; K^+, –1.89; Rb^+, –1.70; Cs^+, –1.48; Mg^{2+}, –3.48; Ca^{2+}, –2.00; Sr^{2+}, –2.52	SSM	0.1	0.1	–	–		[4]
	PVC (w = 33 %)	Na^+, –1.55; K^+, –1.78; Rb^+, –2.00; Cs^+, –1.35; Mg^{2+}, <–3.70 Ca^{2+}, –1.85; Sr^{2+}, –2.44	–	–	Δc_B = 0.1	–	–	calculated from the formula: $K_{A,B} = c_A/c_B^{(1/z_B)}$	
Li^+-27	**Li^+-27** (w = 1.5 %), KTpClPB (x_i = 35 %),	Na^+, –1.96	MPM	–	Δc_{Na} = 0.02 or 0.11	–	–	140 mM NaCl background	[9]
	oNPOE (w = 65 %),	K^+, –2.17; Mg^{2+}, –2.85;			$\Delta c_{K,\,Mg}$ = 0.1				
	PVC (w = 33 %)	Ca^{2+}, –2.28			Δc_{Ca} =				
		H^+, –3.40			0.0025			100 mM HCl	
					Δc_H = 0.1			background	
		Na^+, –2.00	FIM	–	0.14	–	–		
		H^+, –3.40			0.1				
	Li^+-27 (w = 1.5 %), KTpClPB (x_i = 35 %),	Na^+, –2.20	MPM	–	Δc_{Na} = 0.02 or 0.11	–	–	140 mM NaCl background	[9]
	oNPOE (w = 64 %),	K^+, –2.85; Mg^{2+}, –2.89			$\Delta c_{K,\,Mg}$ = 0.1				
	TOPO (w = 1 %),	Ca^{2+}, –2.57			Δc_{Ca} =				
	PVC (w = 33 %)	H^+, –3.40			0.0025			100 mM HCl	
					Δc_H = 0.1			background	
		Na^+, –2.15	FIM	–	0.14	–	–		
		H^+, –3.40			0.1				
Li^+-28	**Li^+-28** (w = 1.5 %), KTpClPB (x_i = 34 %),	Na^+, –0.92	MPM	–	Δc_{Na} = 0.02 or 0.11	–	–	140 mM NaCl background	[9]
	oNPOE (w = 65 %), PVC (w = 33 %)	K^+, –1.60; Mg^{2+}, –0.80			$\Delta c_{K,\,Mg}$ = 0.1				
		Ca^{2+}, –0.80			Δc_{Ca} = 0.0025				
		Na^+, –0.74	FIM	–	0.14	–	–		
	Li^+-28 (w = 1.5 %), KTpClPB (x_i = 34 %),	Na^+, –1.08;	MPM	–	Δc_{Na} = 0.02 or 0.11	–	–	140 mM NaCl background	[9]
	TOPO (w = 1 %), oNPOE (w = 64 %),	Mg^{2+}, –0.74			Δc_{Mg} = 0.1				

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 33 %)	Ca^{2+}, –0.24			Δc_{Ca} = 0.0025				
		Na^+, –0.85	FIM	–	0.14	–	–		
Li^+-29	**Li^+-29** (w = 1.5 %), KTpClPB (x_i = 23 %),	Na^+, –1.96	MPM	–	Δc_{Na} = 0.02 or 0.11	–	–	140 mM NaCl background	[9]
	oNPOE (w = 65 %), PVC (w = 33 %)	K^+, –1.85; Mg^{2+}, –0.42;			$\Delta c_{K, Mg}$ = 0.1				
		Ca^{2+}, 0			Δc_{Ca} = 0.0025				
		Na^+, –1.40	FIM	–	0.14	–	–		
	Li^+-29 (w = 1.5 %), KTpClPB (x_i = 23 %),	Na^+, –1.38	MPM	–	Δc_{Na} = 0.02 or 0.11	–	–	140 mM NaCl background	[9]
	TOPO (w = 1 %), oNPOE (w = 65 %),	K^+, +0.50; Mg^{2+}, –1.96			$\Delta c_{K, Mg}$ = 0.1				
	PVC (w = 33 %)	Ca^{2+}, –2.19			Δc_{Ca} =				
		H^+, –3.40			0.0025			100 mM HCl	
					Δc_H = 0.1			background	
		Na^+, –1.15	FIM	–	0.14	–	–		
		H^+, –3.40			0.1				
Li^+-30	**Li^+-30** (w = 1.5 %), KTpClPB (x_i = 22 %),	Na^+, –0.77	MPM	–	Δc_{Na} = 0.02 or 0.01	–	–	140 mM NaCl background	[9]
	oNPOE (w = 65 %),	K^+, –0.54; Mg^{2+}, –1.28			$\Delta c_{K, Mg}$ = 0.1				
	PVC (w = 33 %)	Ca^{2+}, –1.06			Δc_{Ca} = 0.0025				
		Na^+, –0.77	FIM	–	0.14	–	–		
	Li^+-30 (w = 1.5 %), KTpClPB (x_i = 22 %),	Na^+, –1.70	MPM	–	Δc_{Na} = 0.02 or 0.01	–	–	140 mM NaCl background	[9]
	oNPOE (w = 64 %), PVC (w = 33 %),	K^+, –2.28; Mg^{2+}, –0.31			$\Delta c_{K, Mg}$ = 0.1				
	TOPO (w = 1 %)	Ca^{2+}, +0.20			Δc_{Ca} = 0.0025				
		Na^+, –1.92	FIM	–	0.14	–	–		
Li^+-31	**Li^+-31** (w = 1–2 %), oNPOE (w = 64–66 %), KTpClPB (x_i = 20 %), PVC (w = 31–33 %)	Na^+, –2.0; K^+, –2.3; Mg^{2+}, –2.7; Ca^{2+}, –1.3	SSM	0.1	0.1	–	–	21 ± 1 °C	[2]
Li^+-32	**Li^+-32** (w = 1–2 %), oNPOE (w = 64–66 %), KTpClPB (x_i = 20 %), PVC (w = 31–33 %)	Na^+, –1.9; K^+, –2.1; Mg^{2+}, –2.8; Ca^{2+}, –0.8	SSM	0.1	0.1	–	–	21 ± 1 °C	[2]
Li^+-33	**Li^+-33** (w = 1–2 %), oNPOE (w = 64–66 %), KTpClPB (x_i = 20 %),	Na^+, –2.0; K^+, –2.2; Mg^{2+}, –2.8; Ca^{2+}, –1.4	SSM	0.1	0.1	–	–	21 ± 1 °C	[2]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 31–33 %)								
Li^+-34	**Li^+-34** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 26 %)	Na^+, +0.24; K^+, –0.32; Rb^+, –1.3; Cs^+, –2.2; Mg^{2+}, –2.7; Ca^{2+}, –1.4; Sr^{2+}, –0.76; Ba^{2+}, +1.1	SSM	0.1	0.1	–	–	pH = 7.0; 25 °C	[7]
	Li^+-34 (w = 3 %), DBE (w = 66 %), KTpClPB (x_i = 50 %), PVC (w = 30 %)	Na^+, +0.3; K^+, –0.06; Rb^+, –0.6; Cs^+, –1.2; Mg^{2+}, –2.4; Ca^{2+}, –1.4; Sr^{2+}, –0.5; Ba^{2+}, +1.2	FIM	–	0.1	60	–	25 °C; r.o.o.g.	[6]
Li^+-35	**Li^+-35** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 51 %), PVC (w = 26 %)	Na^+, +0.72; K^+, –0.16; Rb^+, –0.68; Cs^+, –2.2; Mg^{2+}, –3.4; Ca^{2+}, –3.1; Sr^{2+}, –2.8; Ba^{2+}, –2.4	SSM	0.1	0.1	–	–		[7]
Li^+-36	**Li^+-36** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 62 %), PVC (w = 26 %)	Na^+, +0.60; K^+, –0.60; Rb^+, –1.2; Cs^+, –1.9; Mg^{2+}, –3.4; Ca^{2+}, –3.0; Sr^{2+}, –2.8; Ba^{2+}, –2.4	SSM	0.1	0.1	–	–		[7]
Li^+-37	**Li^+-37** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 54 %), PVC (w = 26 %)	Na^+, +0.10; K^+, –0.20; Rb^+, –0.74; Cs^+, –2.1; Mg^{2+}, –3.7; Ca^{2+}, –3.6; Sr^{2+}, –3.5; Ba^{2+}, –3.2	SSM	0.1	0.1	–	–		[7]
Li^+-38	**Li^+-38** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 57 %), PVC (w = 26 %)	Na^+, +0.84; K^+, +1.4; Rb^+, +1.3; Cs^+, –0.48; Mg^{2+}, –1.6; Ca^{2+}, –1.4; Sr^{2+}, –1.5; Ba^{2+}, –0.96	SSM	0.1	0.1	–	–		[7]
Li^+-39	**Li^+-39** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 57 %), PVC (w = 26 %)	Na^+, –0.64; K^+, –1.4; Rb^+, –1.8; Cs^+, –2.6; Mg^{2+}, –4.9; Ca^{2+}, –4.3; Sr^{2+}, –4.2; Ba^{2+}, –4.0	SSM	0.1	0.1	–	–		[7]
Li^+-40	**Li^+-40** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 60 %), PVC (w = 26 %)	Na^+, +0.56; K^+, +0.32; Rb^+, +0.36; Cs^+, +0.38; Mg^{2+}, –1.9; Ca^{2+}, –1.8; Sr^{2+}, –2.0; Ba^{2+}, –2.0	SSM	0.1	0.1	–	–		[7]
Li^+-41	**Li^+-41** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 55 %), PVC (w = 26 %)	Na^+, +0.12; K^+, +0.52; Rb^+, +0.56; Cs^+, +0.64; Mg^{2+}, –2.4; Ca^{2+}, –2.4; Sr^{2+}, –2.4; Ba^{2+}, –1.9	SSM	0.1	0.1	–	–		[7]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li$^+$-42	**Li$^+$-42** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 53 %), PVC (w = 26 %)	Na^+, –1.6; K^+, –2.6; Rb^+, –2.6; Cs^+, –2.6; Mg^{2+}, –4.6; Ca^{2+}, –4.4; Sr^{2+}, –4.3; Ba^{2+}, –4.2	SSM	0.1	0.1	–	–		[7]
Li$^+$-43	**Li$^+$-43** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 54 %), PVC (w = 26 %)	Na^+, –1.6; K^+, –2.7; Rb^+, –2.7; Cs^+, –2.7; Mg^{2+}, –4.8; Ca^{2+}, –4.5; Sr^{2+}, –4.4; Ba^{2+}, –4.2	SSM	0.1	0.1	–	–		[7]
Li$^+$-44	**Li$^+$-44** (w = 3 %), DBE (w = 70 %), KTpClPB (x_i = 54 %), PVC (w = 26 %)	Na^+, –1.8; K^+, –2.6; Rb^+, –3.1; Cs^+, –3.3; Mg^{2+}, –4.9; Ca^{2+}, –4.5; Sr^{2+}, –4.5; Ba^{2+}, –4.5	SSM	0.1	0.1	59	10^{-5} –10^{-1}	25 °C	[7]
Li$^+$-45	**Li$^+$-45** (w = 1 %), oNPOE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 28 %)	Na^+, –2.38; K^+, –2.23; Rb^+, –2.29; Cs^+, –1.73; NH_4^+, –3.65; H^+, –2.98; Mg^{2+}, –4.58	FIM	–	0.5 H^+, 0.05	59	–	25 °C	[10]
Li$^+$-46	**Li$^+$-46** (w = 1 %), oNPOE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 28 %)	Na^+, –2.38; K^+, –1.40; Rb^+, –1.94; Cs^+, –1.59; NH_4^+, –3.42; H^+, –3.52; Mg^{2+}, –4.53; Ca^{2+}, –4.21; Sr^{2+}, –3.97; Ba^{2+}, –3.91	FIM	–	0.5 H^+, 0.05	59	–	25 °C	[10]
Li$^+$-47	**Li$^+$-47** (w = 1 %), oNPOE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 28 %)	Na^+, –2.35; K^+, –1.37; Rb^+, –1.52; Cs^+, –1.00; NH_4^+, –3.09; H^+, –2.86; Mg^{2+}, –3.85; Ca^{2+}, –3.98; Sr^{2+}, –4.05; Ba^{2+}, –3.93	FIM	–	0.5 H^+, 0.05	59	–	25 °C	[10]
Li$^+$-48	**Li$^+$-48** (w = 1 %), oNPOE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 28 %)	Na^+, –2.28; K^+, –1.45; Rb^+, –2.15; Cs^+, –1.90; NH_4^+, –3.45; H^+, –3.09; Mg^{2+}, –4.52; Ca^{2+}, –3.78; Sr^{2+}, –3.51; Ba^{2+}, –3.66	FIM	–	0.5 H^+, 0.05	59	–	25 °C	[10]
Li$^+$-49	**Li$^+$-49** (w = 1 %), oNPOE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 28 %)	Na^+, –2.36; K^+, –1.68; Rb^+, –1.97; Cs^+, –1.63; NH_4^+, –3.31; H^+, –2.89; Mg^{2+}, –4.52; Ca^{2+}, –3.92; Sr^{2+}, –3.95; Ba^{2+}, –4.00	FIM	–	0.5 H^+, 0.05	59	–	25 °C	[10]
Li$^+$-50	**Li$^+$-50** (w = 1 %), oNPOE (w = 70 %), KTpClPB (x_i = 50 %), PVC (w = 28 %)	Na^+, –2.34; K^+, –1.43; Rb^+, –1.79; Cs^+, –1.34; NH_4^+, –2.96; H^+, –2.01; Mg^{2+}, –4.44; Ca^{2+}, –3.81; Sr^{2+}, –3.65; Ba^{2+}, –3.54	FIM	–	0.5 H^+, 0.05	59	–	25 °C	[10]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li^+-51	**Li^+-51** (w = 4 %), PVC (w = 32.2 %), KTpClPB (x_i = 12 %), oNPOE (w = 63.4 %)	Na^+, –0.60; K^+, –0.40; NH_4^+, –1.00; Ca^{2+}, +0.60; Ba^{2+}, +0.30	MPM	–	–	53.0	–	140 mM Na^+ background	[11]
	Li^+-51 (w = 4 %), KTpClPB (x_i = 12 %), oNPOE (w = 62.7 %), PVC (w = 31.8 %), TOPO (w = 0.96 %)	Na^+, –0.60; K^+, –0.56; NH_4^+, –0.38; Ca^{2+}, –0.17; Ba^{2+}, –0.30	SSM	–	–	–	–		[11]
		Na^+, –0.72; K^+, –0.60; NH_4^+, –0.08; Ca^{2+}, +0.40; Ba^{2+}, +0.40	MPM	–		–	–	140 mM Na^+ background	
	Li^+-51 (w = 4 %), PVC (w = 32.2 %), KTpClPB (x_i = 12 %), oNPPE (w = 63.4 %)	Na^+, –1.40; K^+, –0.82; NH_4^+, –0.70; Ca^{2+}, +1.00; Ba^{2+}, +0.70	MPM	–	–	55.0	–	140 mM Na^+ background	[11]
	Li^+-51 (w = 4 %), KTpClPB (x_i = 12 %), PVC (w = 31.8 %), TOPO (w = 0.96 %), oNPPE (w = 62.7 %)	Na^+, –0.32; K^+, –0.20; NH_4^+, +0.15; Ca^{2+}, +0.75; Ba^{2+}, +0.45	SSM	–	–	–	–		[11]
		Na^+, –1.48; K^+, –1.00; NH_4^+, –1.00; Ca^{2+}, +0.90; Ba^{2+}, +0.60	MPM	–	–	–	–	140 mM Na^+ background	
	Li^+-51 (w = 4 %), nitrophenyl butyl ether (w = 63.4 %), KTpClPB (x_i = 12 %), PVC (w = 32.2 %)	Na^+, –0.70; K^+, –0.04; NH_4^+, +0.60; Ca^{2+}, +1.60; Ba^{2+}, –0.15	MPM	–	–	48.0	–	140 mM Na^+ background	[11]
	Li^+-51 (w = 4 %), KTpClPB (x_i = 12 %), PVC (w = 31.8 %), TOPO (w = 0.96 %), nitropheyl butyl ether (w = 62.7 %)	NH_4^+, –0.58; Ca^{2+}, +0.11; Ba^{2+}, –0.40							
		Na^+, –0.77; K^+, –0.22; NH_4^+, +0.52; Ca^{2+}, +1.60; Ba^{2+}, –0.30	MPM	–	–	–	–	140 mM Na^+ background	
	Li^+-51 (w = 4 %), nitrophenyl benzyl ether (w = 63.4 %), KTpClPB (x_i = 12 %), PVC (w = 32.2 %)	Na^+, –1.00; K^+, +0.30; NH_4^+, +1.00; Ca^{2+}, +1.90; Ba^{2+}, +1.40	MPM	–	–	49.1	–	140 mM Na^+ background	[11]
	Li^+-51 (w = 4 %), nitrophenyl benzyl ether (w = 62.7 %), KTpClPB (x_i = 12 %), PVC (w = 31.4 %), TOPO (w = 0.96 %)	Na^+, –0.80; K^+, –0.60; NH_4^+, –0.04; Ca^{2+}, +0.56; Ba^{2+}, +0.15	SSM	–	–	–	–		[11]
		Na^+, –1.10; K^+, +0.08; NH_4^+, +0.70; Ca^{2+}, +2.00; Ba^{2+}, +1.32	MPM	–	–	–	–	140 mM Na^+ background	

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li^+-52	**Li^+-52** (w = 4 %), KTpClPB (x_i = 13 %), oNPOE (w = 63.4 %), PVC (w = 32.2 %)	Na^+, –1.30; K^+, –0.60; NH_4^+, –0.52; Ca^{2+}, –1.10; Ba^{2+}, –1.52	MPM	–	–	51.3	–	140 mM Na^+ background	[11]
		Na^+, –1.23	FIM	–	–	–	–		
		Na^+, –1.34	FIM (18 mV)	–	–	–	–		
	Li^+-52 (w = 4 %), KTpClPB (x_i = 13 %), oNPOE (w = 62.7 %), PVC (w = 31.8 %), TOPO (w = 0.96 %)	Na^+, –0.96; K^+, –0.85; NH_4^+, –0.80; Ca^{2+}, –1.43; Ba^{2+}, –1.52	SSM	–	–	–	–		[11]
		Na^+, –1.35; K^+, –0.77; NH_4^+, –0.60; Ca^{2+}, –1.22; Ba^{2+}, –1.70	MPM	–	–	–	–	140 mM Na^+ background	
	Li^+-52 (w = 4 %), PVC (w = 32.2 %), KTpClPB (x_i = 13 %), oNPPE (w = 63.4 %)	Na^+, –1.74; K^+, –0.92; NH_4^+, –0.60; Ca^{2+}, –1.08; Ba^{2+}, –1.60	MPM	–	–	51.0	–	140 mM Na^+ background	[11]
	Li^+-52 (w = 4 %), KTpClPB (x_i = 13 %), PVC (w = 31.8 %), TOPO (w = 0.96 %), ONPPE (w = 62.7 %)	Na^+, –1.00; K^+, –0.80; NH_4^+, –0.70; Ca^{2+}, –1.36; Ba^{2+}, –1.41	SSM	–	–	30.0	–		[11]
		Na^+, –1.92; K^+, –0.77; NH_4^+, –0.30; Ca^{2+}, –1.60; Ba^{2+}, –2.00	MPM	–	–	26.0	–	140 mM Na^+ background	
	Li^+-52 (w = 4 %), nitrophenyl butyl ether (w = 63.4 %), KTpClPB (x_i = 13 %), PVC (w = 32.2 %)	Na^+, –1.52; K^+, –0.70; NH_4^+, –0.40; Ca^{2+}, –1.40; Ba^{2+}, –1.52	MPM	–	–	50.6	–	140 mM Na^+ background	[11]
	Li^+-52 (w = 4 %), nitrophenyl butyl ether (w = 62.7 %), KTpClPB (x_i = 13 %), PVC (w = 31.8 %), TOPO (w = 0.96 %)	Na^+, –0.85; K^+, –0.70; NH_4^+, –0.62; Ca^{2+}, –1.30; Ba^{2+}, –1.38	SSM	–	–	–	–		[11]
		Na^+, –1.48; K^+, –0.60; NH_4^+, –0.30; Ca^{2+}, –1.30; Ba^{2+}, –1.40	MPM	–	–	–	–	140 mM Na^+ background	
	Li^+-52 (w = 4 %), nitrophenyl benzyl ether (w = 63.4 %), KTpClPB (x_i = 13 %), PVC (w = 32.2 %)	Na^+, –1.00; K^+, –0.70; NH_4^+, –0.22; Ca^{2+}, –0.70; Ba^{2+}, –1.04	MPM	–	–	53.3	–	140 mM Na^+ background	[11]
	Li^+-52 (w = 4 %), nitrophenyl benzyl ether (w = 62.7 %), KTpClPB (x_i = 13 %),	Na^+, –0.77; K^+, –0.47; NH_4^+, –0.11; Ca^{2+}, –1.22; Ba^{2+}, –1.30	SSM	–	–	–	–		[11]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 31.8 %), TOPO (w = 0.96 %)	Na^+, –1.04; K^+, –0.77; NH_4^+, –0.30; Ca^{2+}, –0.77; Ba^{2+}, –1.08	MPM	–	–	–	–	140 mM Na^+ background	
Li^+-53	**Li^+-53** (w = 4 %), KTpClPB (x_i = 17 %), oNPOE (w = 63.4 %), PVC (w = 32.2 %)	Na^+, –1.60; K^+, –1.08; NH_4^+, –0.35; Ca^{2+}, –0.30; Ba^{2+}, –1.30	MPM	–	–	54.0	–	140 mM Na^+ background	[11]
		Na^+, –1.04	SSM	–	–	–	–		
		Na^+, –1.23	FIM	–	–	–	–		
		Na^+, –1.34	FIM (18 mV)	–	–	–	–		
	Li^+-53 (w = 4 %), KTpClPB (x_i = 17 %), PVC (w = 31.8 %), oNPOE (w = 62.7 %), TOPO (w = 0.96 %)	Na^+, –1.37; K^+, –1.22; NH_4^+, –0.62; Ca^{2+}, +0.62; Ba^{2+}, –1.52	SSM	–	–	31.0	–		[11]
		Na^+, –1.70; K^+, –1.35; NH_4^+, –0.15; Ca^{2+}, +0.90; Ba^{2+}, –0.49	MPM	–	–	33.3	–	140 mM Na^+ background	
		Na^+, –1.23	FIM	–	–	–	–		
		Na^+, –1.34	FIM (18 mV)	–	–	–	–		
	Li^+-53 (w = 4 %), KTpClPB (x_i = 17 %), PVC (w = 32.2 %), oNPPE (w = 63.4 %)	Na^+, –1.04; K^+, –0.70; NH_4^+, +0.30; Ca^{2+}, +1.78; Ba^{2+}, –0.40	MPM	–	–	49.5	–	140 mM Na^+ background	[11]
		Na^+, –0.92	SSM	–	–	–	–		
		Na^+, –1.08	FIM	–	–	–	–		
		Na^+, –1.26	FIM (18 mV)	–	–	–	–		
	Li^+-53 (w = 4 %), KTpClPB (x_i = 17 %), PVC (w = 31.8 %), TOPO (w = 0.96 %), oNPPE (w = 62.7 %)	Na^+, –0.82; K^+, –0.51; NH_4^+, –0.25; Ca^{2+}, +1.20; Ba^{2+}, –1.09	SSM	–	–	–	–		[11]
		Na^+, –1.42; K^+, –0.74; NH_4^+, +0.23; Ca^{2+}, +1.73; Ba^{2+}, –0.54	MPM	–	–	–	–	140 mM Na^+ background	
		Na^+, –1.23	FIM	–	–	–	–		
		Na^+, –1.52	FIM (18 mV)	–	–	–	–		
	Li^+-53 (w = 4 %), nitrophenyl butyl ether (w = 63.4 %), KTpClPB (x_i = 17 %), PVC (w = 32.2 %)	Na^+, –1.15; K^+, –1.00; NH_4^+, +0.04; Ca^{2+}, +1.30; Ba^{2+}, –0.30	MPM	–	–	49.8	–	140 mM Na^+ background	[11]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Li^+-53 (w = 4 %), nitrophenyl butyl ether (w = 62.7 %), KTpClPB (x_i = 17 %), PVC (w = 31.8 %), TOPO (w = 0.96 %)	Na^+, –0.80; K^+, –0.74; NH_4^+, –0.66; Ca^{2+}, +0.81; Ba^{2+}, –1.15	SSM	–	–	–	–		[11]
		Na^+, –1.22; K^+, –1.10; NH_4^+, +0.08; Ca^{2+}, +1.26; Ba^{2+}, –0.40	MPM	–	–	–	–	140 mM Na^+ background	
	Li^+-53 (w = 4 %), nitrophenyl benzyl ether (w = 63.4 %), KTpClPB (x_i = 17 %), PVC (w = 32.2 %)	Na^+, –1.15; K^+, –0.52; NH_4^+, +0.30; Ca^{2+}, +1.00; Ba^{2+}, –0.96	MPM	–	–	51.2	–	140 mM Na^+ background	[11]
	Li^+-53 (w = 4 %), nitrophenyl benzyl ether (w = 62.7 %), KTpClPB (x_i = 17 %), PVC (w = 31.8 %), TOPO (w = 0.96 %)	Na^+, –0.72; K^+, –0.64; NH_4^+, –0.54; Ca^{2+}, +0.62; Ba^{2+}, –1.26	SSM	–	–	–	–		[11]
		Na^+, –1.30; K^+, –0.60; NH_4^+, +0.23; Ca^{2+}, +1.04; Ba^{2+}, –1.00	MPM	–	–	–	–	140 mM Na^+ background	
Li^+-54	**Li^+-54** (w = 2.5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.74; K^+, –3.27; Rb^+, –3.35; Cs^+, –3.20; NH_4^+, –2.50; H^+, –1.66; Mg^{2+}, –3.08; Ca^{2+}, –1.53; Sr^{2+}, –1.80; Ba^{2+}, –2.03	SSM	0.1	0.1	56.2	$10^{-4.5}$ –10^{-1}	20 °C; r.o.o.g.	[12]
	Li^+-54 (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.85; K^+, –3.21; Rb^+, –3.06; Cs^+, –3.79; NH_4^+, –3.83; H^+, –2.61; Mg^{2+}, –2.40; Ca^{2+}, –1.03; Sr^{2+}, –0.89; Ba^{2+}, –1.13	SSM	0.1	0.1	60	10^{-5} –10^{-1}	20 °C; $\lg P_{TLC}$ = 13; r.o.o.g.	[12]
	Li^+-54 (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –2.04; K^+, –2.87; Rb^+, –3.54; Cs^+, –3.60; NH_4^+, –2.60; H^+, –1.93; Mg^{2+}, –4.37; Ca^{2+}, –2.21; Sr^{2+}, –3.67; Ba^{2+}, –3.87	SSM	0.1	0.1	57.1	10^{-5} –10^{-1}	20 °C; r.o.o.g.	[12]
	Li^+-54 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –2.05; K^+, –2.93; Rb^+, –3.33; Cs^+, –3.33; NH_4^+, –2.54; H^+, –2.13; Mg^{2+}, –3.33; Ca^{2+}, –1.90; Sr^{2+}, –1.99; Ba^{2+}, –2.20	SSM	0.1	0.1	58.8	10^{-5} –10^{-1}	20 °C; r.o.o.g.	[12]
	Li^+-54 (w = 2.5 %),	Na^+, –2.11; K^+, –3.38;	SSM	0.1	0.1	58.8	10^{-5}	20 °C;	[12]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i = 15 %), BBPA (w = 65 %), OH–PVC (w = 33 %)	Rb^+, –3.53; Cs^+, –3.53; NH_4^+, –2.61; H^+, –2.15; Mg^{2+}, –3.41; Ca^{2+}, –1.83; Sr^{2+}, –1.87; Ba^{2+}, –2.33					10^{-1}	r.o.o.g.	
	Li^+-54 (w = 2.5 %), CP (w = 65 %), KTpClPB (x_i = 15 %), PVC (w = 33 %)	Na^+, –2.16; K^+, –3.20; Rb^+, –3.00; Cs^+, –3.60; NH_4^+, –3.38; H^+, –2.40; Mg^{2+}, –3.33; Ca^{2+}, –1.29; Sr^{2+}, –1.20; Ba^{2+}, –1.77	SSM	0.1	0.1	58.5	10^{-5} -10^{-1}	20 °C; r.o.o.g.	[12]
Li^+-55	**Li^+-55** (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.32; K^+, –2.07; Rb^+, –2.20; Cs^+, –2.25; NH_4^+, –0.67; H^+, –0.87; Mg^{2+}, –3.13; Ca^{2+}, +0.37; Sr^{2+}, –0.50; Ba^{2+}, –0.87	SSM	0.1	0.1	57.3	10^{-5} -10^{-1}	20 °C; r.o.o.g.	[12]
	Li^+-55 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.61; K^+, –2.53; Rb^+, –2.87; Cs^+, –3.06; NH_4^+, –1.96; H^+, –1.25; Mg^{2+}, –3.97; Ca^{2+}, –1.33; Sr^{2+}, –2.06; Ba^{2+}, –2.39	SSM	0.1	0.1	58.6	10^{-5} -10^{-1}	20 °C; r.o.o.g.	[12]
	Li^+-55 (w = 2.5 %), CP (w = 65 %), KTpClPB (x_i = 15 %), PVC (w = 33 %)	Na^+, –1.33; K^+, –2.13; Rb^+, –1.87; Cs^+, –2.20; NH_4^+, –2.07; H^+, –0.93; Mg^{2+}, –2.74; Ca^{2+}, –0.07; Sr^{2+}, –0.70; Ba^{2+}, –1.03	SSM	0.1	0.1	52.8	10^{-4} -10^{-1}	20 °C; r.o.o.g.	[12]
Li^+-56	**Li^+-56** (w = 1.2 %), KTpClPB (x_i = 31.6 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –1.4; K^+, –2.3; H^+, –3.5; Mg^{2+}, –5.8; Ca^{2+}, –4.5 Na^+, –1.77††	FIM	–	0.1; H^+, 0.001	60.0† 62.0††	–	37 °C; † $c_{dl} = 10^{-4.6}$ M; †† $c_{dl} = 10^{-2.6}$ M	[13]
	Li^+-56 (w = 1.2 %), KTpClPB (x_i = 23.6 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.08	FIM	–	–	59† 60††		37 °C; † $c_{dl} = 10^{-5.1}$ M; †† $c_{dl} = 10^{-2.90}$ M	[14]
Li^+-57	**Li^+-57** (w = 1.2 %), KTpClPB (x_i = 38.6 %), PVC (w = 32.8 %),	Na^+, –3.0; K^+, –3.5; H^+, –0.9; Mg^{2+}, –5.7; Ca^{2+}, –4.2	FIM	–	0.1; H^+, 0.001	60.0† 61.0††	–	37 °C; † $c_{dl} = 10^{-5.0}$ M; †† $c_{dl} = 10^{-4.1}$ M	[13]

† in water.
†† in 150 mM NaCl, 1.26 mM $CaCl_2$, and 4.3 mM KCl.

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 65.6 %)	Na^+, –2.92††							
	Li^+-57 (w = 1.2 %), KTpClPB (x_i = 14.8 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.80	FIM	–	–	60† 61††		37 °C; † $c_{dl} = 10^{-5.2}$ M; †† $c_{dl} = 10^{-3.6}$ M	[14]
Li^+-58	**Li^+-58** (w = 1.2 %), KTpClPB (x_i = 38.6 %), PVC (w = 32.8 %), oNPOE (w = 65.6 %)	Na^+, –2.9; K^+, –4.3; H^+, +1.1; Mg^{2+}, –5.3; Ca^{2+}, –4.3 Na^+, –3.25††	FIM	–	0.1; H^+, 0.001	50.0† 61.0††	–	37 °C; † $c_{dl} = 10^{-5.0}$ M; †† $c_{dl} = 10^{-3.8}$ M	[13]
Li^+-59	**Li^+-59** (w = 1.4 %), KTpClPB (x_i = 22 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –0.72; K^+, –0.76 H^+, +2.1; Mg^{2+}, +0.11; Ca^{2+}, –0.44	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-60	**Li^+-60** (w = 1.4 %), KTpClPB (x_i = 40 %), PVC (w = 27.9 %), oNPOE (w = 69.8 %)	Na^+, –1.2; K^+, –1.9 H^+, +2.9; Mg^{2+}, –0.35; Ca^{2+}, –0.78	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-61	**Li^+-61** (w = 1.4 %), KTpClPB (x_i = 25 %), PVC (w = 27.9 %), oNPOE (w = 69.8 %)	Na^+, –2.4; K^+, –2.8 H^+, +1.8; Mg^{2+}, –2.8; Ca^{2+}, –2.8	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-62	**Li^+-62** (w = 1.4 %), KTpClPB (x_i = 44 %), PVC (w = 27.9 %), oNPOE (w = 69.8 %)	Na^+, –2.7; K^+, –2.9 H^+, +3.1; Mg^{2+}, –2.6; Ca^{2+}, –2.7	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-63	**Li^+-63** (w = 1.4 %), KTpClPB (x_i = 36 %), PVC (w = 27.9 %), oNPOE (w = 69.8 %)	Na^+, –3.1; K^+, –3.3 H^+, +2.4; Mg^{2+}, –3.0; Ca^{2+}, –3.2	SSM	1.0 0.1	1.0 0.1	57 ± 1	–	t_{resp} = 30 s; 25 °C	[15]
		Na^+, –3.0; K^+, –3.5; Ca^{2+}, –3.3	MSM	–	–	–	–		
	Li^+-63 (w = 1.4 % or 2.8 %), oNPOE (w = 69.9 % or 68.9 %), KTpClPB (x_i = 28.6 % or 14.3 %), PVC (w = 27.9 % or 27.5 %)	Na^+, –3.1; K^+, –3.3; H^+, +2.6; Mg^{2+}, –3.0; Ca^{2+}, –3.3	SSM ($E_A = E_B$)	–	–	57	–	25 °C	[16]
		Na^+, –2.6; K^+, –2.9; H^+, +2.4; Mg^{2+}, –3.0; Ca^{2+}, –3.2	SSM	0.1	0.1				
		Na^+, –3.1; K^+, –3.3		1	1				
		Na^+, –3.0; K^+, –3.5	FIM	–	1	–	–		

† in water.
†† in 150 mM NaCl, 1.26 mM $CaCl_2$, and 4.3 mM KCl.

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Li^+-63 (w = 1.4 % or 2.8 %), oNPPE (w = 69.9 % or 68.9 %), KTpClPB (x_i = 28.6 % or 14.3 %), PVC (w = 27.9 % or 27.5 %)	Na^+, –3.3; K^+, –3.6; H^+, +2.7; Mg^{2+}, –3.4; Ca^{2+}, –3.2	SSM ($E_A = E_B$)	–	–	59	–	25 °C	[16]
		Na^+, –2.8; K^+, –3.0; H^+, +2.6; Mg^{2+}, –3.2; Ca^{2+}, –3.1	SSM	0.1	0.1				
		Na^+, –3.3; K^+, –3.6		1	1				
		Na^+, –3.2; K^+, –3.6	FIM	–	1	–	–		
	Li^+-63 (w = 1.4 % or 2.8 %), FNDPE (w = 69.9 % or 68.9 %), KTpClPB (x_i = 28.6 % or 14.3 %), PVC (w = 27.9 % or 27.5 %)	Na^+, –3.1; K^+, –3.4; H^+, +2.8; Mg^{2+}, –3.1; Ca^{2+}, –3.1	SSM ($E_A = E_B$)	–	–	59	–	25 °C	[16]
		Na^+, –2.7; K^+, –2.8; H^+, +2.7; Mg^{2+}, –3.2; Ca^{2+}, –3.1	SSM	0.1	0.1				
		Na^+, –3.2; K^+, –3.3		1	1				
	Li^+-63 (w = 1.4 % or 2.8 %), BEHS (w = 69.9 % or 68.9 %), KTpClPB (x_i = 28.6 % or 14.3 %), PVC (w = 27.9 % or 27.5 %)	Na^+, –2.8; K^+, –3.1; H^+, +3.0; Mg^{2+}, –3.1; Ca^{2+}, –3.0	SSM ($E_A = E_B$)	–	–	58	–	25 °C	[16]
		Na^+, –2.7; K^+, –2.9; H^+, +2.8; Mg^{2+}, –3.2;Ca^{2+}, –3.1	SSM	0.1	0.1				
		Na^+, –2.9; K^+, –3.2		1	1				
	Li^+-63 (w = 1.4 % or 2.8 %), TOPO (w = 69.9 % or 68.9 %), KTpClPB (x_i = 28.6 % or 14.3 %), PVC (w = 27.9 % or 27.5 %)	Na^+, –1.4; K^+, –1.8; H^+, +2.3; Mg^{2+}, –0.63; Ca^{2+}, +0.19	SSM ($E_A = E_B$)			51	–	25 °C	[16]
		Na^+, –1.4; K^+, –1.6; H^+, +2.0; Mg^{2+}, –0.62; Ca^{2+}, +0.21	SSM	0.1	0.1				
		Na^+, –1.4; K^+, –1.9	SSM	1	1				
Li^+-64	**Li^+-64** (w = 1.4 %), KTpClPB (x_i = 54 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –2.7; K^+, –2.8 H^+, +3.2; Mg^{2+}, –2.3; Ca^{2+}, –2.5	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-65	**Li^+-65** (w = 1.4 %), KTpClPB (x_i = 36 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –2.1; K^+, –2.3 H^+, +2.5; Mg^{2+}, –1.8; Ca^{2+}, –2.0	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-66	**Li^+-66** (w = 1.4 %), KTpClPB (x_i = 54 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –1.8; K^+, –1.8 H^+, +3.5; Mg^{2+}, –1.3; Ca^{2+}, –1.7	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-67	**Li^+-67** (w = 1.4 %), KTpClPB (x_i = 36 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –0.85; K^+, –0.98 H^+, +3.7; Mg^{2+}, +0.46; Ca^{2+}, –0.81	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li^+-68	**Li^+-68** (w = 1.4 %), KTpClPB (x_i = 54 %), PVC (w = 27.9 %), oNPOE (w = 69.8 %)	Na^+, –0.72; K^+, –0.82 H^+, +4.6; Mg^{2+}, +0.39; Ca^{2+}, –0.71	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-69	**Li^+-69** (w = 1.4 %), KTpClPB (x_i = 49 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –2.3; K^+, –2.3 H^+, +3.4; Mg^{2+}, –2.0; Ca^{2+}, –2.2	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-70	**Li^+-70** (w = 1.4 %), KTpClPB (x_i = 68 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –1.7; K^+, –1.4 H^+, +3.5; Mg^{2+}, –1.2; Ca^{2+}, –1.3	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-71	**Li^+-71** (w = 1.4 %), KTpClPB (x_i = 40 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –2.1; K^+, –1.4 H^+, +4.0; Mg^{2+}, –2.1; Ca^{2+}, –2.1	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-72	**Li^+-72** (w = 1.4 %), KTpClPB (x_i = 59 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –2.0; K^+, –1.3 H^+, +4.0; Mg^{2+}, –2.1; Ca^{2+}, –2.1	SSM	1.0 0.1	1.0 0.1	–	–	t_{resp} = 30 s; 25 °C	[15]
Li^+-73	**Li^+-73** (w = 3–7 %), TEHP (w ≈ 70 %), PVC (w ≈ 28 %)	Na^+, –1.00; K^+, –1.77; Cs^+, –2.07; Rb^+, –2.14; NH_4^+, –0.60; Mg^{2+}, –3.32; Ca^{2+}, –2.92; Ba^{2+}, –3.28	SSM	0.1	0.1	60	10^{-4} –10^{-1}	t_{resp} = 60 s; 25 °C	[17]
	Li^+-73 (w = 3–7 %), DOPP (w ≈ 70 %), PVC (w ≈ 28 %)	Na^+, –0.26; K^+, –1.96; Rb^+, –2.89; Cs^+, –1.89; NH_4^+, –0.92; Mg^{2+}, –2.03; Ca^{2+}, –2.01; Ba^{2+}, –2.08	SSM	0.1	0.1	61	10^{-4} –10^{-1}	t_{resp} = 60 s; 25 °C	[17]
Li^+-74	**Li^+-74** (w = 3–7 %), TEHP (w ≈ 70 %), PVC (w ≈ 28 %)	Na^+, –1.51; K^+, –2.01; Rb^+, –1.85; Cs^+, –1.96; NH_4^+, –0.54; Mg^{2+}, –3.27; Ca^{2+}, –2.85; Ba^{2+}, –3.28	SSM	0.1	0.1	61	10^{-4} –10^{-1}	t_{resp} = 60 s; 25 °C	[17]
	Li^+-74 (w = 1.5 %), TEHP (w ≈ 70 %), PVC (w ≈ 28 %)	Na^+, –1.0; K^+, –1.7; Rb^+, –1.4; Cs^+, –1.7; NH_4^+, –0.6; Mg^{2+}, –2.8; Ca^{2+}, –2.3; Ba^{2+}, –3.3	SSM	0.1	0.1	–	–	r.o.o.g.	[17]
	Li^+-74 (w = 3.0 %), TEHP (w ≈ 70 %),	Na^+, –1.2; K^+, –2.2; Rb^+, –2.3;	SSM	0.1	0.1	–	–	r.o.o.g.	[17]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC ($w \approx 28$ %)	Cs^+, –2.2; NH_4^+, –0.8; Mg^{2+}, –3.0; Ca^{2+}, –2.9; Ba^{2+}, –3.2							
	Li⁺-74 ($w = 5.0$ %), TEHP ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.3; K^+, –2.3; Rb^+, –2.1; Cs^+, –2.3; NH_4^+, –0.7; Mg^{2+}, –2.8; Ca^{2+}, –2.8; Ba^{2+}, –3.4	SSM	0.1	0.1	–	–	r.o.o.g.	[17]
	Li⁺-74 ($w = 7.0$ %), TEHP ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.4; K^+, –2.4; Rb^+, –2.6; Cs^+, –2.4; NH_4^+, –1.0; Mg^{2+}, –3.4; Ca^{2+}, –3.2; Ba^{2+}, –4.2	SSM	0.1	0.1	–	–	r.o.o.g.	[17]
	Li⁺-74 ($w = 3$–7 %), KTpClPB ($x_i = 30$ %), TEHP ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.5; K^+, –2.5; Rb^+, –2.8; Cs^+, –2.6; NH_4^+, –1.2; Mg^{2+}, –3.5; Ca^{2+}, –3.7; Ba^{2+}, –4.2	SSM	0.1	0.1	60	10^{-5} –10^{-1}	$t_{resp} < 2$ min; pH > 2; r.o.o.g.	[17]
	Li⁺-74 ($w = 3$–7 %), PVC ($w \approx 28$ %), DOPP ($w \approx 70$ %)	Na^+, –0.99; K^+, –0.82; Rb^+, –1.85; Cs^+, –1.92; NH_4^+, –0.68; Mg^{2+}, –1.82; Ca^{2+}, –1.11; Ba^{2+}, –1.68	SSM	0.1	0.1	58	10^{-4} –10^{-1}	25 °C	[17]
	Li⁺-74 ($w = 3$–7 %), KTpClPB ($x_i = 30$ %), DOPP ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.1; K^+, –0.8; Rb^+, –1.85; Cs^+, –1.9; NH_4^+, –0.6; Mg^{2+}, –1.8; Ca^{2+}, –1.2; Ba^{2+}, –1.7	SSM	0.1	0.1	58	10^{-4} –10^{-1}	r.o.o.g.	[17]
	Li⁺-74 ($w = 3$–7 %), DOA ($w \approx 70$ %), KTpClPB ($x_i = 30$ %), PVC ($w \approx 28$ %)	Na^+, –0.9; K^+, –1.6; Rb^+, –1.3; Cs^+, –1.4; NH_4^+, –0.6; Mg^{2+}, –3.1; Ca^{2+}, –2.8; Ba^{2+}, –3.0	SSM	0.1	0.1	–	–		[17]
	Li⁺-74 ($w = 3$–7 %), KTpClPB ($x_i = 30$ %), BEHA ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.2; K^+, –1.7; Rb^+, –1.9; Cs^+, –1.7; NH_4^+, –1.0; Mg^{2+}, –2.7; Ca^{2+}, –2.5; Ba^{2+}, –2.3	SSM	0.1	0.1	–	–	r.o.o.g.	[17]
	Li⁺-74 ($w = 3$–7 %), KTpClPB ($x_i = 30$ %), oNPOE ($w \approx 70$ %),	Na^+, –0.2; K^+, –0.8; Rb^+, –1.4; Cs^+, –1.5; NH_4^+, –0.3; Mg^{2+}, –2.2; Ca^{2+}, –2.4;	SSM	0.1	0.1	–	–	r.o.o.g.	[17]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC ($w \approx 28$ %)	Ba^{2+}, –2.5							
Li^+-75	**Li^+-75** (w = 3–7 %), TEHP ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.17; K^+, –1.89; Rb^+, –2.04; Cs^+, –2.09; NH_4^+, –1.28; Mg^{2+}, –3.07; Ca^{2+}, –2.89; Ba^{2+}, –3.12	SSM	0.1	0.1	61	10^{-4} –10^{-1}	t_{resp} = 60 s; 25 °C	[17]
	Li^+-75 (w = 3–7 %), DOPP ($w \approx 70$ %), PVC ($w \approx 28$ %)	Na^+, –1.27; K^+, –2.22; Rb^+, –2.35; Cs^+, –2.31; NH_4^+, –1.06; Mg^{2+}, –2.00; Ca^{2+}, –2.64; Ba^{2+}, –3.06	SSM	0.1	0.1	55	10^{-4} –10^{-1}	t_{resp} = 60 s; 25 °C	[17]
Li^+-76	**Li^+-76** (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.75; K^+, –2.4; Mg^{2+}, –3.6; Ca^{2+}, –0.9; H^+, –1.5	SSM	0.1	0.1	59	$10^{-4.8}$ –10^{-1}	20 °C; r.o.o.g.	[18]
	Li^+-76 (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.47	SSM	0.1	0.1	60	$10^{-5.1}$ –10^{-1}	20 °C	[18]
	Li^+-76 (w = 2.5 %), TEHP (w = 65 %), PVC (w = 33 %)	Na^+, –1.76	SSM	0.1	0.1	58	$10^{-4.5}$ –10^{-1}	20 °C	[18]
	Li^+-76 (w = 2.5 %), PVC (w = 33 %), TEHP (w = 65 %), KTpClPB (x_i = 15 %)	Na^+, –1.4	SSM	0.1	0.1	60	$10^{-4.9}$ –10^{-1}	20 °C	[18]
	Li^+-76 (w = 2.5 %), KTpClPB (x_i = 15 %), BEHS (w = 65 %), PVC (w = 33 %)	Na^+, –1.75	SSM	0.1	0.1	59	$10^{-4.5}$ –10^{-1}	20 °C	[18]
Li^+-77	**Li^+-77** (w = 2.5 %), PVC (w = 33 %), BBPA (w = 65 %)	Na^+, –1.6; K^+, –2.6; H^+, –1.8; Mg^{2+}, –3.5; Ca^{2+}, –0.6	SSM	0.1	0.1	56	$10^{-4.8}$ –10^{-1}	20 °C; r.o.o.g.	[18]
	Li^+-77 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.6 Na^+, –1.8	SSM FIM	0.1 –	0.1 0.1	55	$10^{-5.0}$ –10^{-1}	20 °C	[18]
	Li^+-77 (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.4	SSM	0.1	0.1	55	$10^{-4.8}$ –10^{-1}	20 °C	[18]
	Li^+-77 (w = 2.5 %), KTpClPB (x_i = 15 %), BEHS (w = 65 %), PVC (w = 33 %)	Na^+, –1.65	SSM	0.1	0.1	59	$10^{-5.0}$ –10^{-1}	20 °C	[18]
Li^+-78	**Li^+-78** (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.80; K^+, –3.6; H^+, –3.1; Mg^{2+}, –4.1; Ca^{2+}, –0.7;	SSM	0.1	0.1	55	$10^{-5.2}$ –10^{-1}	r.o.o.g.	[18]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Na^+, –2.0	FIM	–	0.1				
	Li^+-78 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.75 Na^+, –1.9	SSM FIM	0.1 –	0.1 0.1	58	$10^{-5.1}$ -10^{-1}	20 °C	[18]
	Li^+-78 (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.2 Na^+, –1.6	SSM FIM	0.1 –	0.1 0.1	60	$10^{-5.5}$ -10^{-1}	20 °C	[18]
	Li^+-78 (w = 2.5 %), KTpClPB (x_i = 15 %), BEHS (w = 65 %), PVC (w = 33 %)	Na^+, –1.45 Na^+, –1.6	SSM FIM	0.1 –	0.1 0.1	58	$10^{-5.0}$ -10^{-1}	20 °C	[18]
	Li^+-78 (w = 2.5 %), KTpClPB (x_i = 15 %), TEHP (w = 65 %), PVC (w = 33 %)	Na^+, –1.6 Na^+, –1.9	SSM FIM	0.1 –	0.1 0.1	55	$10^{-5.0}$ -10^{-1}	20 °C	[18]
Li^+-79	**Li^+-79** (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –0.25; K^+, –0.4; H^+, +1.1; Mg^{2+}, –2.2; Ca^{2+}, –1.0	SSM	0.1	0.1	45	$10^{-3.8}$ -10^{-1}	20 °C; r.o.o.g.	[18]
	Li^+-79 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –0.1	SSM	0.1	0.1	51	10^{-4} -10^{-1}	20 °C	[18]
	Li^+-79 (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –0.75	SSM	0.1	0.1	51	10^{-4} -10^{-1}	20 °C	[18]
Li^+-80	**Li^+-80** (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, +1.5; K^+, –0.2; H^+, +0.1; Mg^{2+}, –2.2; Ca^{2+}, +0.6	SSM	0.1	0.1	50	$10^{-3.5}$ -10^{-1}	20 °C; r.o.o.g.	[18]
	Li^+-80 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, +1.23	SSM	0.1	0.1	50	10^{-4} -10^{-1}	20 °C	[18]
	Li^+-80 (w = 2.5 %), KTpClPB (x_i = 15 %), BEHS (w = 65 %), PVC (w = 33 %)	Na^+, +1.4	SSM	0.1	0.1	51	10^{-4} -10^{-1}	20 °C	[18]
Li^+-81	**Li^+-81** (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.6; K^+, –2.5; H^+, –1.2; Mg^{2+}, –3.9; Ca^{2+}, –1.3	SSM	0.1	0.1	58	$10^{-5.0}$ -10^{-1}	20 °C; r.o.o.g.	[18]
	Li^+-81 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –1.5	SSM	0.1	0.1	59	$10^{-5.0}$ -10^{-1}	20 °C	[18]
Li^+-82	**Li^+-82** (w = 2.5 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –2.04; K^+, –2.9; H^+, –1.9; Mg^{2+}, –4.1; Ca^{2+}, –2.2	SSM	0.1	0.1	59	$10^{-5.1}$ -10^{-1}	20 °C; r.o.o.g.	[18]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Li^+-82 (w = 2.5 %), KTpClPB (x_i = 15 %), BBPA (w = 65 %), PVC (w = 33 %)	Na^+, –2.05 Na^+, –2.4	SSM FIM	0.1 –	0.1 0.1	59	$10^{-5.1}$ -10^{-1}	20 °C	[18]
	Li^+-82 (w = 2.5 %), KTpClPB (x_i = 15 %), TEHP (w = 65 %), PVC (w = 33 %)	Na^+, –1.96	SSM	0.1	0.1	58	$10^{-5.0}$ -10^{-1}	20 °C	[18]
	Li^+-82 (w = 2.5 %), KTpClPB (x_i = 15 %), BEHS (w = 65 %), PVC (w = 33 %)	Na^+, –1.86	SSM	0.1	0.1	59	$10^{-5.0}$ -10^{-1}	20 °C	[18]
	Li^+-82 (w = 2.5 %), KTpClPB (x_i = 15 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –1.85	SSM	0.1	0.1	59	$10^{-5.0}$ -10^{-1}	20 °C	[18]
Li^+-83	**Li^+-83** (w = 2.5 %), KTpClPB (x_i = 17 %), TEHP (w = 64 %), PVC (w = 33 %)	Na^+, –2.83; K^+, –4.25; Cs^+, –4.56; NH_4^+, –3.23; Mg^{2+}, –5.78; Ca^{2+}, –5.46; Ba^{2+}, –5.53	SSM	–	–	58.2	$10^{-5.0}$ -10^{-1}	25 °C; t_{resp} < 30 s	[19]
	Li^+-83 (w = 1.2 %), oNPOE (w = 65.8 %), PVC (w = 33 %)	Na^+, –2.4; K^+, –4.2; NH_4^+, –3.6; Mg^{2+}, –4.9; Ca^{2+}, –4.9	MPM	–	Δc_B = 0.1	56.8	–	artificial serum background† ; $c_{dl} = 10^{-5.86}$ M	[3]
	cis-**Li^+-83** (w = 1.2 %), oNPOE (w = 65.8 %), PVC (w = 33 %)	Na^+, –2.8; K^+, –4.6; NH_4^+, –5.4; Mg^{2+}, –5.7; Ca^{2+}, –5.4	MPM	–	Δc_B = 0.1	55.7	–	artificial serum background†; $c_{dl} = 10^{-6.09}$ M	[3]
	cis-**Li^+-83** (w = 1.2 %), oNPOE (w = 65.8 %), KTpClPB (x_i = 26 %), PVC (w = 33 %)	Na^+, –2.1; K^+, –3.7; NH_4^+, –4.2; Mg^{2+}, –4.7; Ca^{2+}, –4.8	MPM	–	Δc_B = 0.1	58.9	–	artificial serum background†; $c_{dl} = 10^{-6.47}$ M	[3]
	cis-**Li^+-83** (w = 1.2 %), oNPOE (w = 65.8 %), KTpClPB (x_i = 70 %), PVC (w = 33 %)	Na^+, –2.0; K^+, –3.5; NH_4^+, –4.0; Mg^{2+}, –4.4; Ca^{2+}, –4.9	MPM	–	Δc_B = 0.1	60.3	–	artificial serum background†; $c_{dl} = 10^{-6.30}$ M	[3]
	cis-**Li^+-83** (w = 1.2 %), DOS (w = 65.8 %), PVC (w = 33 %)	Na^+, –2.6; K^+, –4.8; NH_4^+, –5.3; Mg^{2+}, –5.5; Ca^{2+}, –5.7	MPM	–	Δc_B = 0.1	58.1	–	artificial serum background†; $c_{dl} = 10^{-6.80}$ M	[3]

† artificial serum background: NaH_2PO_4, 8 mM; Na_2HPO_4, 1.5 mM; $CaCl_2$, 2.0 mM; $MgCl_2$, 0.8 mM; KCl, 4.5 mM; NH_4Cl, 0.05 mM; glucose, 4.7 mM; urea, 2.5 mM; NaCl, 135 mM; 145 mM; and 155 mM.

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	cis-**Li$^+$-83** (w = 1.2 %), DBP (w = 65.8 %), PVC (w = 33 %)	Na^+, –2.6; K^+, –4.6; NH_4^+, –4.7; Mg^{2+}, –5.4; Ca^{2+}, –5.5	MPM	–	Δc_B = 0.1	56.6	–	artificial serum background†; $c_{dl} = 10^{-6.49}$ M	[3]
	cis-**Li$^+$-83** (w = 1.2 %), TEHP (w = 65.8 %), PVC (w = 33 %)	Na^+, –2.5; K^+, –5.7; NH_4^+, –3.4; Mg^{2+}, –2.9; Ca^{2+}, –4.4	MPM	–	Δc_B = 0.1	50.7	–	artificial serum background†; $c_{dl} = 10^{-4.50}$ M	[3]
Li$^+$-84	**Li$^+$-84** (w = 2.5 %), KTpClPB (x_i = 19 %), TEHP (w = 64 %), PVC (w = 33 %)	Na^+, –1.38; K^+, –2.39; Cs^+, –2.62; NH_4^+, –1.11; Mg^{2+}, –3.83; Ca^{2+}, –3.49; Ba^{2+}, –3.74	SSM	–	–	–	10^{-3}–1	140 mM Na^+ background; 25 °C	[19]
Li$^+$-85	**Li$^+$-85** (w = 2.5 %), KTpClPB (x_i = 22 %), TEHP (w = 64 %), PVC (w = 33 %)	Na^+, –1.01; K^+, –1.83; NH_4^+, –0.51; Mg^{2+}, –3.10; Ca^{2+}, –2.76; Ba^{2+}, –3.14	SSM	–	–	–		25 °C	[19]
Li$^+$-86	**Li$^+$-86** (w = 2.5 %), KTpClPB (x_i = 24 %), TEHP (w = 64 %), PVC (w = 33 %)	Na^+, –0.99; K^+, –1.80; NH_4^+, –0.50; Mg^{2+}, –3.08; Ca^{2+}, –2.71; Ba^{2+}, –3.04	SSM	–	–	–	–	25 °C	[19]
Li$^+$-87	**Li$^+$-87** (w = 1 %), DOPP (w = 67 %), PVC (w = 32 %)	Na^+, –1.55; K^+, –2.24; Mg^{2+}, –3.84; Ca^{2+}, –2.86; Ba^{2+}, –3.15	SSM	0.01	0.01	58.5	–	$c_{dl} = 10^{-5.3}$ M; 25.0 ± 0.5 °C	[20]
Li$^+$-88	Philips (561–Li)	Na^+, –1.33	FIM	–	–	61*	–	37 °C	[14]
						47**	–	$c_{dl} = 10^{-4.5}$ M*; $c_{dl} = 10^{-2.15}$ M**	
Li$^+$-89	**Li$^+$-89** (w = 1.2 %), KTpClPB (x_i = 24.8 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –0.98	FIM	–	–	61*	–	37 °C	[14]
						26**	–	$c_{dl} = 10^{-5.0}$ M*; $c_{dl} = 10^{-1.8}$ M**	
Li$^+$-90	**Li$^+$-90** (w = 2–3 %), KTpClPB (x_i = 22.2–33.3 %), PVC (w = 26–27 %), BBPA (w = 70 %)	Na^+, –3.3; K^+, –3.7; Rb^+, –3.6; Cs^+, –3.4; NH_4^+, –3.8; H^+, –3.1; Mg^{2+}, –5.0; Ca^{2+}, –5.5; Sr^{2+}, –5.7; Ba^{2+}, –5.7	FIM	0.1	0.1	N	10^{-6}–1	25.0 ± 0.5 °C; r.o.o.g. & table	[21]
	Li$^+$-90 (w = 2–3 %), KTpClPB (x_i = 22.2–33.3 %), PVC (w = 26–27 %),	Na^+, –3.0; K^+, –3.3; Rb^+, –3.3; Cs^+, –3.2; NH_4^+, –3.9; H^+, –2.7; Mg^{2+}, –4.5; Ca^{2+}, –5.0;	FIM	0.1	0.1	–	–	25.0 ± 0.5 °C; r.o.o.g.	[21]

† artificial serum background: NaH_2PO_4, 8 mM; Na_2HPO_4, 1.5 mM; $CaCl_2$, 2.0 mM; $MgCl_2$, 0.8 mM; KCl, 4.5 mM; NH_4Cl, 0.05 mM; glucose, 4.7 mM; urea, 2.5 mM; NaCl, 135 mM; 145 mM; and 155 mM.

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	BEHP (w = 70 %)	Sr^{2+}, –5.3; Ba^{2+}, –5.5							
	Li^+-90 (w = 2–3 %), KTpClPB (x_i = 22.2–33.3 %), PVC (w = 26–27 %), oNPOE (w = 70 %)	Na^+, –2.8; K^+, –3.5; Rb^+, –3.6; Cs^+, –3.3; NH_4^+, –4.0; H^+, –2.7; Mg^{2+}, –4.3; Ca^{2+}, –5.0; Sr^{2+}, –5.2; Ba^{2+}, –5.2	FIM	0.1	0.1	–	–	25.0 ± 0.5 °C; r.o.o.g.	[21]
	Li^+-90 (w = 2–3 %), KTpClPB (x_i = 22.2–33.3 %), PVC (w = 26–27 %), oNPPE (w = 70 %)	Na^+, –2.9; K^+, –3.4; Rb^+, –3.4; Cs^+, –3.3; NH_4^+, –3.8; H^+, –2.8; Mg^{2+}, –4.2; Ca^{2+}, –4.9; Sr^{2+}, –5.3; Ba^{2+}, –5.4	FIM	0.1	0.1	–	–	25.0 ± 0.5 °C; r.o.o.g.	[21]
Li^+-91	**Li^+-91** (w = 1.2 %), KTpClPB (x_i = 36.6 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.92	FIM	–	0.1	61 60†	$10^{-5.1}$ $10^{-3.8}$†	37 °C; clinical background†	[22]
Li^+-92	**Li^+-92** (w = 1.2 %), KTpClPB (x_i = 36.6 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –3.25	FIM	–	0.1	61 50†	$10^{-5.2}$ $10^{-4.1}$†	37 °C; clinical background†	[22]
Li^+-93	**Li^+-93** (w = 1.2 %), KTpClPB (x_i = 46.2 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.93	FIM	–	0.1	54 61†	$10^{-5.5}$ $10^{-3.7}$†	37 °C; clinical background†	[22]
Li^+-94	**Li^+-94** (w = 1.2 %), KTpClPB (x_i = 28.7 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.25 protein: significant interference	FIM	–	0.1	61 60†	$10^{-4.4}$ $10^{-3.2}$†	37 °C; clinical background†	[22]
Li^+-95	**Li^+-95** (w = 1.2 %), KTpClPB (x_i = 31.4 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.30	FIM	–	0.1	60 61†	$10^{-5.0}$ $10^{-3.1}$†	37 °C; clinical background†	[22]
Li^+-96	mixture of **Li^+-96, Li^+-97** (w = 1.2 %), oNPOE (w = 65.6 %), KTpClPB (x_i = 48.2 %), PVC (w = 32.8 %)	Na^+, –2.30	FIM	–	0.1	59 61†	$10^{-4.9}$ $10^{-3.1}$†	37 °C; clinical background†	[22]

† clinical background: NaCl 150 mM; KCl 4.3 mM; $CaCl_2$ 1.26 mM; $MgCl_2$ 0.9 mM

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li+-97	**Li+-97** (w = 1.2 %), KTpClPB (x_i = 48.2 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Na^+, –2.30	FIM	–	0.1	58 60†	$10^{-4.9}$ $10^{-3.1}$†	37 °C; clinical background†	[22]
Li+-98	**Li+-98** (w = 1.4 %), KTpClPB (x_i = 64.2 %), oNPOE (w = 69.8 %), PVC (w = 27.9 %)	Na^+, –2.6; K^+, –2.9; H^+, +3.5; Mg^{2+}, –3.0; Ca^{2+}, –3.2	SSM	1	1	–	–	r.o.o.g.	[23]
Li+-99	**Li+-99** (w = 1.4 %), oNPOE (w = 69.8 %), KTpClPB (x_i = 65.9 %), PVC (w = 27.9 %)	Na^+, –2.5; K^+, –3.1; H^+, +3.4; Mg^{2+}, –3.4; Ca^{2+}, –3.4	SSM	1	1	–	–	r.o.o.g.	[23]
	Li+-99 (w = 1.4 %), FNDPE (w = 69.8 %), KTpClPB (x_i = 65.9 %), PVC (w = 27.9 %)	Na^+, –2.7; K^+, –2.9; H^+, +2.3; Mg^{2+}, –3.0; Ca^{2+}, –3.2	SSM	1	1	–	–	r.o.o.g.	[23]
	Li+-99 (w = 1.4 %), oNPPE (w = 69.8 %), KTpClPB (x_i = 65.9 %), PVC (w = 27.9 %)	Na^+, –2.2; K^+, –2.8; H^+, +3.7; Mg^{2+}, –2.5; Ca^{2+}, –3.2	SSM	1	1	–	–	r.o.o.g.	[23]
Li+-100	**Li+-100** (w = 1.4 %), oNPOE (w = 69.8 %), KTpClPB (x_i = 67.6 %), PVC (w = 27.9 %)	Na^+, –3.23; K^+, –3.75; H^+, +2.57 Mg^{2+}, –3.25; Ca^{2+}, –3.35	SSM	1	1	56	–	fresh electrode	[23]
		Na^+, –3.21; K^+, –3.68; H^+, +2.46; Mg^{2+}, –3.10; Ca^{2+}, –3.18	SSM	1	1	56	–	1 d old electrode	
		Na^+, –3.21; K^+, –3.60; H^+, +2.43; Mg^{2+}, –3.07; Ca^{2+}, –3.19	SSM	1	1	54	–	3 d old electrode	
		Na^+, –3.11; K^+, –3.40; H^+, +2.37; Ca^{2+}, –3.32	SSM	1	1	51	–	4 d old electrode	
		Na^+, –3.10; K^+, –3.36; Mg^{2+}, –2.79; Ca^{2+}, –2.96	SSM	1	1	51	–	5 d old electrode	
		Na^+, –3.04; K^+, –3.26; H^+, +2.35; Mg^{2+}, –2.55; Ca^{2+}, –2.86	SSM	1	1	51	–	6 d old electrode	
		Na^+, –3.23; K^+, +3.71; H^+, +3.45; Mg^{2+}, –3.48; Ca^{2+}, –3.48	SSM	1	1	–	–		
		Na^+, –3.1; K^+, –3.6; Ca^{2+}, –3.3	FIM	–	Na^+, 0.14; K^+, 1.0; Ca^+, 0.1	–	–	fresh electrode	

† clinical background: NaCl 150 mM; KCl 4.3 mM; $CaCl_2$ 1.26 mM; $MgCl_2$ 0.9 mM

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Li^+-100 (w = 0.8 %), oNPOE (w = 70.2 %),	Na^+, –2.00; K^+, –2.08; H^+, +2.32; Mg^{2+}, –3.19; Ca^{2+}, –3.36	SSM	1	1	–	–		[23]
	KTpClPB (x_i = 67.6 %), PVC (w = 28.1 %)	Na^+, –2.6; K^+, –3.5; Ca^{2+}, –3.7	FIM	–	Na^+, 0.14; K^+, 1.0; Ca^+, 0.1	–	–		
	Li^+-100 (w = 1.4 %), oNPOE (w = 70.4 %), PVC (w = 28.2 %)	Na^+, –0.29; K^+, –0.42; H^+, +2.29; Mg^{2+}, –1.13; Ca^{2+}, –1.33	SSM	1	1	–	–		[23]
	Li^+-100 (w = 2.8 %), oNPOE (w = 68.9 %),	Na^+, –2.97; K^+, –3.47; H^+, +2.83; Mg^{2+}, –3.62; Ca^{2+}, –3.71	SSM	1	1	–	–		[23]
	KTpClPB (x_i = 67.6 %), PVC (w = 27.5 %)	Na^+, –2.8; K^+, –3.4; Ca^{2+}, –3.5	FIM	–	Na^+, 0.14; K^+, 1.0; Ca^+, 0.1	–	–		
	Li^+-100 (w = 1.4 %), FNDPE (w = 69.8 %), KTpClPB (x_i = 67.6 %), PVC (w = 27.9 %)	Na^+, –2.8; K^+, –3.0; H^+, +3.2; Mg^{2+}, –3.4; Ca^{2+}, –3.5	SSM	1	1	–	–	r.o.o.g.	[23]
	Li^+-100 (w = 1.4 %), oNPPE (w = 69.8 %), KTpClPB (x_i = 67.6 %), PVC (w = 27.9 %)	Na^+, –2.2; K^+, –2.5; H^+, +2.9; Mg^{2+}, –3.2; Ca^{2+}, –3.7	SSM	1	1	–	–	r.o.o.g.	[23]
Li^+-101	**Li^+-101** (w = 1.4 %), oNPOE (w = 69.8 %), KTpClPB (x_i = 69.3 %), PVC (w = 27.9 %)	Na^+, –3.0; K^+, –3.6; H^+, +2.9; Mg^{2+}, –3.3; Ca^{2+}, –3.3	SSM	1	1	–	–	r.o.o.g.	[23]
	Li^+-101 (w = 1.4 %), FNDPE (w = 69.8 %), KTpClPB (x_i = 69.3 %), PVC (w = 27.9 %)	Na^+, –2.0; K^+, –2.2; H^+, +3.2; Mg^{2+}, –2.5; Ca^{2+}, –3.2	SSM	1	1	–	–	r.o.o.g.	[23]
	Li^+-101 (w = 1.4 %), oNPPE (w = 69.8 %), KTpClPB (x_i = 69.3 %), PVC (w = 27.9 %)	Na^+, –2.5; K^+, –2.9; H^+, +3.3; Mg^{2+}, –3.2; Ca^{2+}, –3.5	SSM	1	1	–	–	r.o.o.g.	[23]
Li^+-102	**Li^+-102** (w = 1.4 %), oNPOE (w = 69.8 %), KTpClPB (x_i = 71.0 %), PVC (w = 27.9 %)	Na^+, –3.0; K^+, –3.5; H^+, +3.0; Mg^{2+}, –3.4; Ca^{2+}, –3.4	SSM	1	1	–	–	r.o.o.g.	[23]

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li^+-103	**Li^+-103** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), BBPA (*w* = 70 %), PVC (*w* = 26–27 %)	Na^+, –0.9; K^+, –1.2; Rb^+, –1.5; Cs^+, –1.6; NH_4^+, –1.9; Mg^{2+}, –4.2; Ca^{2+}, –4.1; Sr^{2+}, –4.2; Ba^{2+}, –4.2	SSM	0.1	0.1	–	–	25 ± 0.5 °C	[24]
Li^+-104	**Li^+-104** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), BBPA (*w* = 70 %), PVC (*w* = 26–27 %)	Na^+, –2.6; K^+, –2.9; Rb^+, –3.0; Cs^+, –3.0; NH_4^+, –3.0; Mg^{2+}, –5.3; Ca^{2+}, –4.7; Sr^{2+}, –5.0; Ba^{2+}, –5.0	SSM	0.1	0.1	–	–	25 ± 0.5 °C; $\lg P_{TLC}$ = 14.0 ± 0.2	[24]
Li^+-105	**Li^+-105** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), BBPA (*w* = 70 %), PVC (*w* = 26–27 %)	Na^+, –2.8; K^+, –3.3; Rb^+, –3.7; Cs^+, –3.6; NH_4^+, –3.7; Mg^{2+}, –6.1; Ca^{2+}, –5.2; Sr^{2+}, –5.0; Ba^{2+}, –5.0	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C; $\lg P_{TLC}$ = 14.9 ± 0.2	[24]
Li^+-106	**Li^+-106** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), BBPA (*w* = 70 %), PVC (*w* = 26–27 %)	Na^+, –2.9; K^+, –3.4; Rb^+, –3.6; Cs^+, –3.7; NH_4^+, –3.5; Mg^{2+}, –5.0; Ca^{2+}, –5.0; Sr^{2+}, –5.1; Ba^{2+}, –5.0	SSM	0.1	0.1	–	–	25 ± 0.5 °C; $\lg P_{TLC}$ = 16.3 ± 0.3	[24]
Li^+-107	**Li^+-107** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (*w* = 26–27 %), BBPA (*w* = 70 %)	Na^+, –3.0; K^+, –3.6; Rb^+, –3.6; Cs^+, –3.5; NH_4^+, –3.7; Mg^{2+}, –5.0; Ca^{2+}, –4.9; Sr^{2+}, –5.0; Ba^{2+}, –5.0	SSM	0.1	0.1	N	2×10^{-6}–1 2×10^{-6} –10^{-3}*	25 ± 0.5 °C; $\lg P_{TLC}$ = 16.5 ± 0.3 * in 150 mM NaCl	[24]
		Na^+, –3.1; K^+, –3.6; Rb^+, –3.7; Cs^+, –3.6; NH_4^+, –3.8; Mg^{2+}, <–5.0; Ca^{2+}, <–5.0; Sr^{2+}, <–5.0; Ba^{2+}, <–5.0	FIM	–	0.15				
Li^+-108	**Li^+-108** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (*w* = 26–27 %), BBPA (*w* = 70 %)	Na^+, –1.9; K^+, –2.1; Rb^+, –2.3; Cs^+, –2.5; NH_4^+, –2.5; Mg^{2+}, –2.8; Ca^{2+}, –2.9; Sr^{2+}, –2.8; Ba^{2+}, –2.9	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]
Li^+-109	**Li^+-109** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (*w* = 26–27 %), BBPA (*w* = 70 %)	Na^+, –2.5; K^+, –3.2; Rb^+, –3.4; Cs^+, –3.5; NH_4^+, –3.4; Mg^{2+}, –4.3; Ca^{2+}, –4.9; Sr^{2+}, –4.9 ; Ba^{2+}, –5.2	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]
Li^+-110	**Li^+-110** (*w* = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (*w* = 26–27 %), BBPA (*w* = 70 %)	Na^+, –2.3; K^+, –3.0; Rb^+, –3.2; Cs^+, –3.1; NH_4^+, –3.0; Mg^{2+}, –4.0; Ca^{2+}, –4.2; Sr^{2+}, –4.2; Ba^{2+}, –4.1	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]

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Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Li^+-111	**Li^+-111** (w = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (w = 26–27 %), BBPA (w = 70 %)	Na^+, –2.0; K^+, –2.7; Rb^+, –2.8; Cs^+, –2.5; NH_4^+, –3.0; Mg^{2+}, –4.2; Ca^{2+}, –5.0; Sr^{2+}, –4.7; Ba^{2+}, –4.7	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]
Li^+-112	**Li^+-112** (w = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (w = 26–27 %), BBPA (w = 70 %)	Na^+, –2.8; K^+, –3.7; Rb^+, –3.5; Cs^+, –3.3; NH_4^+, –3.5; Mg^{2+}, –5.0; Ca^{2+}, –3.9; Sr^{2+}, –4.7; Ba^{2+}, –4.7	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]
Li^+-113	**Li^+-113** (w = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (w = 26–27 %), BBPA (w = 70 %)	Na^+, –1.9; K^+, –2.0; Rb^+, –2.0; Cs^+, –2.0; NH_4^+, –2.0; Mg^{2+}, –5.0; Ca^{2+}, –4.1; Sr^{2+}, –4.5; Ba^{2+}, –4.4	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]
Li^+-114	**Li^+-114** (w = 2–3 %), KTpClPB (x_i = 20–30 %), PVC (w = 26–27 %), BBPA (w = 70 %)	Na^+, –2.4; K^+, –3.0; Rb^+, –3.2; Cs^+, –3.3; NH_4^+, –3.2; Mg^{2+}, –5.5; Ca^{2+}, –5.2; Sr^{2+}, –5.5 ; Ba^{2+}, –5.4	SSM	0.1	0.1	–	–	25.0 ± 0.5 °C	[24]
Li^+-115	**Li^+-115** (w = 1.2 %), oNPOE (w = 65.6 %), KTpClPB (x_i = 23.0 %), PVC (w = 32.8 %)	Na^+, –1.35	FIM	–	0.1; H^+, 0.001	53.1† 45.0††	–	37 °C; $c_{dl} = 10^{-4.9}$ M†; $c_{dl} = 10^{-2.2}$ M††	[13]
Li^+-116	**Li^+-116** (w = 1.2 %), oNPOE (w = 65.6 %), KTpClPB (x_i = 23.5 %), PVC (w = 32.8 %)	Na^+, –1.14	FIM	–	0.1 H^+, 0.001	60.0† 44.0††	–	37 °C; $c_{dl} = 10^{-5.1}$ M†; $c_{dl} = 10^{-2.0}$ M††	[13]
Li^+-117	**Li^+-117** (w = 2.0 %), BBPA (w = 65.6 %), PVC (w = 32.4 %)	Na^+, –1.24; K^+, –1.29; NH_4^+, –1.33; Mg^{2+}, –2.33	SSM	0.01	0.01	56.0	–	23 ± 2 °C; $c_{dl} = 10^{-4.32}$ M; coated glassy carbon electrode	[25]
	Li^+-117 (w = 1.9 %), BBPA (w = 62.3 %), PVC (w = 30.8 %), poly(3-octylthiophene) (w = 5 %)	Na^+, –1.27; K^+, –1.29; NH_4^+, –1.39; Mg^{2+}, –2.39	SSM	0.01	0.01	56.0	–	23 ± 2 °C; $c_{dl} = 10^{-4.41}$ M; coated glassy carbon electrode	[25]
	Li^+-117 (w = 1.8 %), BBPA (w = 59.0 %), PVC (w = 29.2 %), poly(3-octylthiophene) (w = 10 %)	Na^+, –1.31; K^+, –1.46; NH_4^+, –1.49; Mg^{2+}, –2.43	SSM	0.01	0.01	56.8	–	23 ± 2 °C; $c_{dl} = 10^{-4.23}$ M; coated glassy carbon electrode	[25]

† in water.
†† in 150 mM NaCl, 1.26 mM $CaCl_2$, and 4.3 mM KCl.

Table 2: Li^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Li^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Li^+-117 (w = 1.7 %), BBPA (w = 55.8 %), PVC (w = 27.5 %), poly(3-octylthiophene) (w = 15 %)	Na^+, –1.40; K^+, –1.48; NH_4^+, –1.61; Mg^{2+}, –2.58	SSM	0.01	0.01	57.8	–	23 ± 2 °C; $c_{dl} = 10^{-4.26}$ M; coated glassy carbon electrode	[25]
	Li^+-117 (w = 1.6 %), BBPA (w = 52.5 %), PVC (w = 25.9 %), poly(3-octylthiophene) (w = 20 %)	Na^+, –1.37; K^+, –1.47; NH_4^+, –1.57; Mg^{2+}, –2.49	SSM	0.01	0.01	55.5	–	23 ± 2 °C; $c_{dl} = 10^{-4.20}$ M; coated glassy carbon electrode	[25]
	Li^+-117 (w = 1.5 %), BBPA (w = 49.2 %), PVC (w = 24.3 %), poly(3-octylthiophene) (w = 25 %)	Na^+, –1.40; K^+, –1.47; NH_4^+, –1.62; Mg^{2+}, –2.45	SSM	0.01	0.01	56.0	–	23 ± 2 °C; $c_{dl} = 10^{-4.26}$ M; coated glassy carbon electrode	[25]
Li^+-118	**Li^+-118** (w = 1.2 %), oNPOE (w = 65.8 %), PVC (w = 33 %)	Na^+, –0.2; K^+, +1.1; NH_4^+, +1.3; Mg^{2+}, +0.6; Ca^{2+}, +0.6	MPM	–	$\Delta c_B = 0.1$	6.3	–	artificial serum background; $c_{dl} = 10^{-3.69}$ M	[3]

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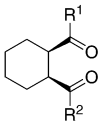
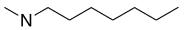
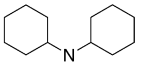
Table 2: Li^+-Selective Electrodes (*Continued*)

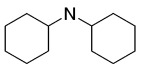


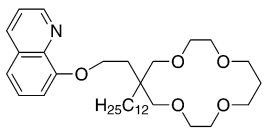
Li⁺-1 (ETH 1630, M_r = 394.64): $R^1 = R^2 =$ 

Li⁺-2 (ETH 1644, M_r = 394.64): $R^1 = R^2 =$ 

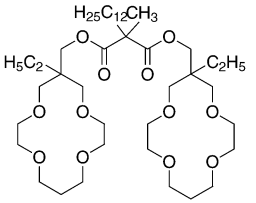
Li⁺-3 (ETH 1811, M_r = 498.79): $R^1 = R^2 =$ 

Li⁺-4 (ETH 1810, M_r = 446.72): $R^1 =$ 

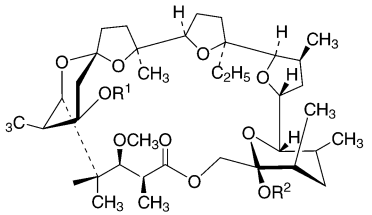
$R^2 =$ 



Li⁺-16 (M_r = 543.78)



Li⁺-20 (M_r = 775.07)



Li⁺-21 (macrocyclic monensin, M_r = 652.86):
R^1, R^2 = H

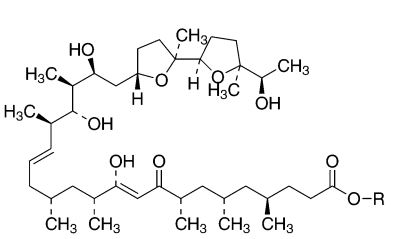
Li⁺-22 (monensin monoacetate, M_r = 694.90):
$R^1 = COCH_3$, R^2 = H

Li⁺-41 (monensin diacetate, M_r = 769.02):
$R^1, R^2 = COCH_3$

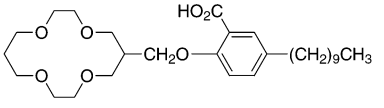
Li⁺-42 (monensin monopropionate, M_r = 741.01):
R^1 = H, $R^2 = COCH_2CH_3$

Li⁺-43 (monensin monobutyrate, M_r = 755.04):
R^1 = H, $R^2 = CO(CH_2)_2CH_3$

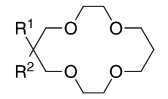
Li⁺-44 (monensin monoisobutyrate, M_r = 755.04):
R^1 = H, $R^2 = COCH(CH_3)_2$



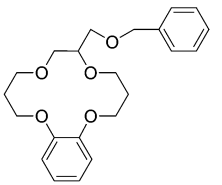
Li⁺-23 (M_r = 709.01) : R = H
Li⁺-24 (M_r = 723.04) : R = CH_3



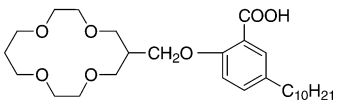
Li⁺-27 (M_r = 494.67)



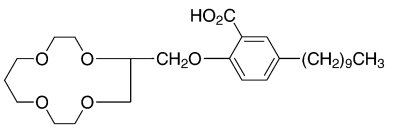
Li⁺-5 (M_r = 372.59): R^1 = H, $R^2 = C_{12}H_{25}$
Li⁺-6 (M_r = 386.61): $R^1 = CH_3$, $R^2 = C_{12}H_{25}$
Li⁺-7 (M_r = 428.69): R^1, $R^2 = C_8H_{17}$
Li⁺-8 (M_r = 540.91): R^1, $R^2 = C_{12}H_{25}$
Li⁺-9 (M_r = 462.71): $R^1 = CH_2C_6H_5$, $R^2 = C_{12}H_{25}$
Li⁺-10 (M_r = 384.51): R^1, $R^2 = CH_2C_6H_5$
Li⁺-11 (M_r = 430.67): $R^1 = CH_2CH_2OCH_3$, $R^2 = C_{12}H_{25}$
Li⁺-12 (M_r = 474.72): $R^1 = (OCH_2CH_2)_2CH_3$, $R^2 = C_{12}H_{25}$
Li⁺-13 (M_r = 506.76): $R^1 = CH_2CH_2OCH_2C_6H_5$, $R^2 = C_{12}H_{25}$
Li⁺-14 (M_r = 458.68): $R^1 = CH_2CH_2OCOCH_3$, $R^2 = C_{12}H_{25}$
Li⁺-15 (M_r = 552.73): $R^1 = CH_2CH_2OPO(OC_2H_5)_2$, $R^2 = C_{12}H_{25}$
Li⁺-17 (M_r = 444.65): $R^1 = CH_2COOCH_3$, $R^2 = C_{12}H_{25}$
Li⁺-18 (M_r = 485.75): $R^1 = CH_2CON(C_2H_5)_2$, $R^2 = C_{12}H_{25}$
Li⁺-19 (M_r = 488.75): R^1, $R^2 = CH_2OC_8H_{17}$
Li⁺-95 (M_r = 455.60): $R^1 = CH_3$, $R^2 = CH_2CON(CH_2Ph)_2$



Li⁺-25 (M_r = 372.46)

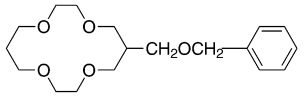


Li⁺-26 (M_r = 494.67)

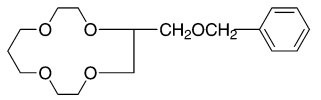


Li⁺-28 (M_r = 480.64)

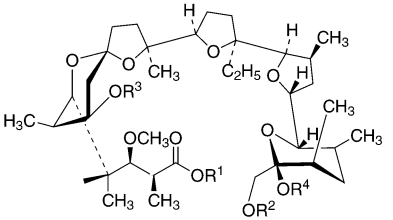
Table 2: Li^+-Selective Electrodes (*Continued*)

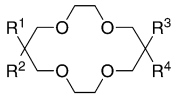


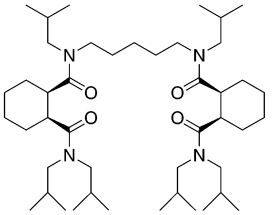
Li^+-29 (M_r = 324.42)



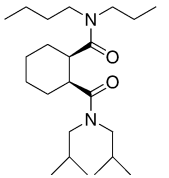
Li^+-30 (M_r = 310.39)



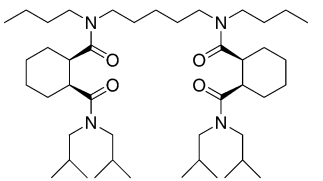




Li^+-31 (ETH 2177, M_r = 745.18)

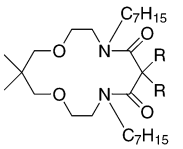


Li^+-32 (ETH 2295, M_r = 380.61)



Li^+-33 (ETH 2294, M_r = 745.18)

Li^+-34 (monensin, M_r = 670.89): $R^1 = R^2 = R^3 = R^4 = H$
Li^+-35 (monensin methylester, M_r = 684.92): $R^1 = CH_3$, $R^2 = R^3 = R^4 = H$
Li^+-36 (M_r = 839.21): $R^1 = C_{12}H_{25}$, $R^2 = R^3 = R^4 = H$
Li^+-37 (M_r = 726.95): $R^1 = CH_3$, $R^2 = COCH_3$, $R^3 = R^4 = H$
Li^+-38 (M_r = 768.99): $R^1 = CH_3$, $R^2 = COCH_3$, $R^3 = COCH_3$, R^4= H
Li^+-39 (M_r = 768.99): $R^1 = CH_3$, $R^2 = COCH_3$, R^3 = H, $R^4 = COCH_3$
Li^+-40 (M_r = 811.03): $R^1 = CH_3$, $R^2 = COCH_3$, $R^3 = COCH_3$, R^4 = $COCH_3$

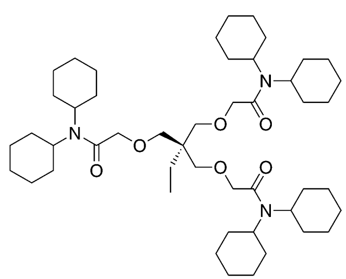


Li^+-51 (M_r = 454.69): R = H
Li^+-52 (M_r = 482.75): R = CH_3
Li^+-53 (M_r = 634.94): R = $CH_2C_6H_5$

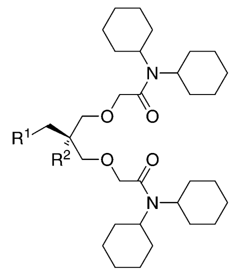
Li^+-45 (M_r = 468.68): $R^1 = CH_2C_6H_4CH(CH_3)_2$, $R^2 = CH_2C_6H_4CH(CH_3)_2$, R^3 = H, R^4 = H
Li^+-46 (M_r = 434.57): $R^1 = CH_2C_6H_5$, $R^2 = CH_2C_{10}H_7$, R^3 = H, R^4 = H
Li^+-47 (M_r = 484.63): $R^1 = CH_2C_{10}H_7$, $R^2 = CH_2C_{10}H_7$, R^3 = H, R^4 = H
Li^+-48 (M_r = 554.94): $R^1 = CH_3$, $R^2 = C_{12}H_{25}$, $R^3 = C_{12}H_{25}$, R^4 = H
Li^+-49 (M_r = 552.84): $R^1 = CH_2C_6H_5$, $R^2 = CH_2C_6H_5$, $R^3 = C_{12}H_{25}$, R^4 = H
Li^+-50 (M_r = 566.86): $R^1 = CH_2C_6H_5$, $R^2 = CH_2C_6H_5$, $R^3 = C_{12}H_{25}$, $R^4 = CH_3$

continues on next page

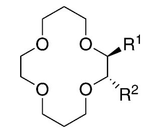
Table 2: Li^+-Selective Electrodes (*Continued*)



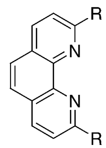
Li⁺-54 (M_r = 798.20)



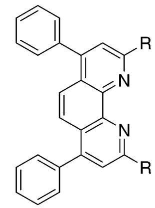
Li⁺-55 (M_r = 558.84): R^1 = $CHCH_2$, R^2 = H
Li⁺-117 (ETH 2137, M_r = 602.95):
R^1 = $(CH_2)_2CH_3$, R^2 = CH_2CH_3



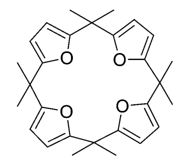
Li⁺-56 (M_r = 444.57): R^1 = R^2 = CH_2OCH_2Ph
Li⁺-57 (M_r = 542.80): R^1 = R^2 = CH_2CONBu_2
Li⁺-58 (M_r = 542.80): R^1 = R^2 = CH_2CON(*sec* Bu)$_2$
Li⁺-89 (M_r = 376.45): R^1 = R^2 = CH_2COOCH_3
Li⁺-91 (M_r = 514.74): R^1 = R^2 = $CONBu_2$
Li⁺-92 (M_r = 514.74): R^1 = R^2 = CON(*sec* Bu)$_2$
Li⁺-93 (M_r = 650.81): R^1 = R^2 = $CON(CH_2Ph)_2$
Li⁺-94 (M_r = 404.50): R^1 = R^2 = CO_2Bu
Li⁺-115 (M_r = 324.42): R^1 = H , R^2 = CH_2OCH_2Ph
Li⁺-116 (M_r = 247.31): R^1 = H , R^2 = CH_2OCH_3



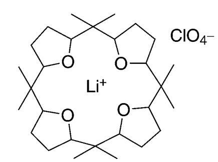
Li⁺-59 (M_r = 180.21): R = H
Li⁺-61 (M_r = 208.26): R = CH_3
Li⁺-63 (M_r = 292.42): R = $(CH_2)_3CH_3$
Li⁺-65 (M_r = 292.42): R = $CH(CH_3)(C_2H_5)$
Li⁺-67 (M_r = 292.42): R = $C(CH_3)_3$
Li⁺-69 (M_r = 404.64): R = $(CH_2)_7CH_3$
Li⁺-71 (M_r = 332.40): R = C_6H_5



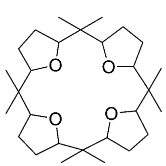
Li⁺-60 (M_r = 332.40): R = H
Li⁺-62 (M_r = 360.46): R = CH_3
Li⁺-64 (M_r = 444.62): R = $(CH_2)_3CH_3$
Li⁺-66 (M_r = 444.62): R = $CH(CH_3)(C_2H_5)$
Li⁺-68 (M_r = 444.62): R = $C(CH_3)_3$
Li⁺-70 (M_r = 558.86): R = $(CH_2)_7CH_3$
Li⁺-72 (M_r = 484.60): R = C_6H_5



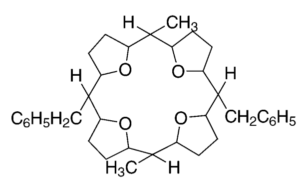
Li⁺-73 (M_r = 432.56)



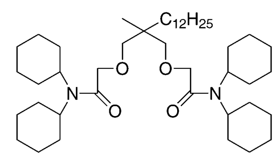
Li⁺-75 (M_r = 555.07)



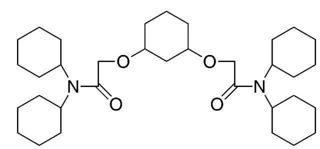
Li⁺-74 (M_r = 448.68)



Li⁺-118 (M_r = 544.78)

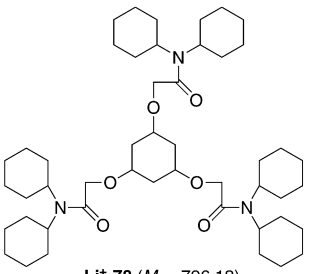


Li⁺-76 (M_r = 701.13)

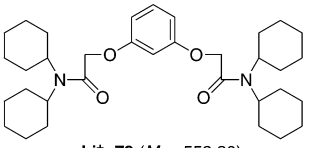


Li⁺- 77 (M_r = 558.84)

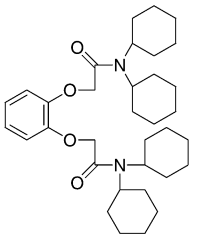
Table 2: Li^+-Selective Electrodes (*Continued*)



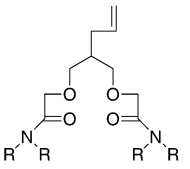
Li^+-78 (M_r = 796.18)



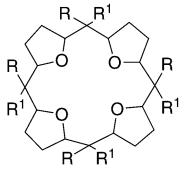
Li^+- 79 (M_r = 552.80)



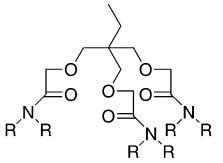
Li^+- 80 (M_r = 552.80)



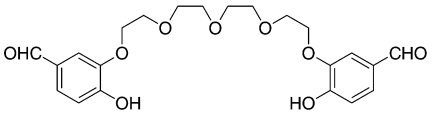
Li^+- 81 (M_r = 558.85): R = 



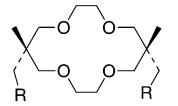
Li^+-83 (M_r = 392.58): R = H, R^1 = CH_3
Li^+-84 (M_r = 448.68): R = H, R^1 = CH_2CH_3
Li^+-85 (M_r = 504.79): R = CH_3, R^1 = CH_2CH_3
Li^+-86 (M_r = 560.90): R = CH_2CH_3,
R^1 = CH_2CH_3



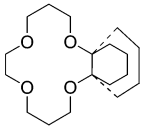
Li^+-82 (M_r = 798.21): R = 



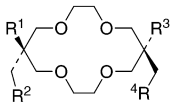
Li^+-87 (M_r = 434.44)



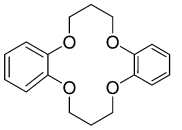
Li^+-96 (M_r = 706.92): R =$CON(CH_2Ph)_2$



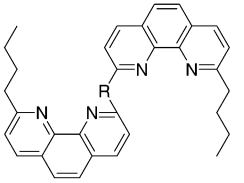
Li^+-90 (M_r = 312.45)



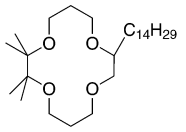
Li^+-97 (M_r = 706.92): R^1 = R^3 =CH_3,
R^2 = R^4 =$CON(CH_2Ph)_2$



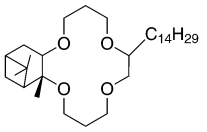
Li^+-103 (M_r = 300.35)



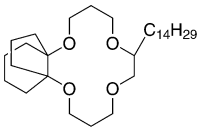
Li^+-98 (M_r = 526.72): R =C_4H_8
Li^+-99 (M_r = 540.75): R = C_5H_{10}
Li^+-100 (M_r = 554.78): R = C_6H_{12}
Li^+-101 (M_r = 568.81): R = C_7H_{14}
Li^+-102 (M_r = 582.84): R = C_8H_{16}



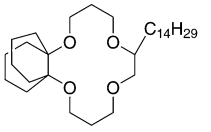
Li^+-104 (M_r = 456.75)



Li^+-105 (M_r = 508.82)



Li^+-106 (M_r = 494.80)



Li^+-107 (M_r = 508.82)

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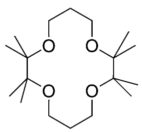
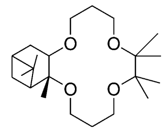
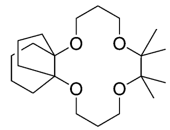
Table 2: Li^+-Selective Electrodes (*Continued*)



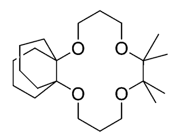
Li^+-108 (M_r = 316.48)



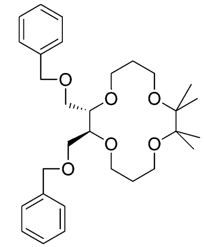
Li^+-109 (M_r = 368.56)



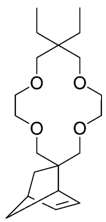
Li^+-110 (M_r = 354.53)



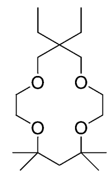
Li^+-111 (M_r = 368.56)



Li^+-112 (M_r = 500.67)



Li^+-113 (M_r = 338.49)



Li^+-114 (M_r = 316.48)

Table 3: Na^+–Selective Electrodes

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-1	**Na^+-1** (w = 9.7 %), sodium dipicrylamide (x_i = 16 %), FNDPE (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –3.0; K^+, –2.4; Rb^+, –3.1; Cs^+, –3.5; H^+, –1.9	FIM	–	0.05	59	10^{-4}–1.0	25 °C	[1]
		Mg^{2+}, –4.0; Ca^{2+}, –3.8; Sr^{2+}, –4.0; Ba^{2+}, –3.2; NH_4^+, –4.2	FIM	–	0.5				
	Na^+-1 (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 8–3 %), PVC (w = 24.3–20.3 %)	Li^+, –2.81; K^+, –2.17; H^+, –3.53	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
		NH_4^+, –3.34; Mg^{2+}, –4.39; Ca^{2+}, –3.94	FIM	–	0.5				
Na^+-2	**Na^+-2** (w = 9.7 %), sodium dipicrylamide (x_i = 15 %), BEHS (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –2.4; K^+, –2.1; Rb^+; –3.2; Cs^+, –3.9; H^+, –2.5	FIM	–	0.05	59	10^{-4}–1.0	25 °C	[1]
		NH_4^+, –4.3; Mg^{2+}, –4.7; Ca^{2+}, –2.8; Sr^{2+}, –2.9; Ba^{2+}, –3.1	FIM	–	0.5				
Na^+-3	**Na^+-3** (w = 0.7 %), KTpClPB (x_i = 57 %), oNPOE (w = 66.1 %), PVC (w = 33.0 %)	Li^+, –2.5; K^+, –1.9; Cs^+, –1.6	SSM	0.1	0.1	60.0	–	$c_{dl} = 3.5 \times 10^{-6}$ M;	[3]
		Mg^{2+}> –6; Ca^{2+}, –2.5	FIM	–	0.1			t_{resp} = 20.0 s	
	Na^+-3 (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 5.6–1.8 %), PVC (w = 24.3–20.3 %)	Li^+, –3.44; K^+, –2.56; H^+, –3.49	FIM	–	0.05	58–59	$10^{-5.0}$–1.0	25.0 ± 0.1 °C	[2]
		NH_4^+, –4.42; Mg^{2+}, –4.64; Ca^{2+}, –4.09	FIM	–	0.5				
	Na^+-3 (w = 9.7–24.4 %), oNPOE (w = 65.5–54.9 %), NaTFPB (x_i = 5.6–1.8 %), PVC (w = 24.3–20.3 %)	Li^+, –2.98; K^+, –2.51; H^+, –3.10	FIM	–	0.05	58–59	$10^{-5.0}$–1.0	25.0 ± 0.1 °C	[2]
		NH_4^+, –4.03; Mg^{2+}, –4.39; Ca^{2+}, –3.98	FIM	–	0.5				
	Na^+-3 (w = 9.7–24.4 %), FNDPE (w = 65.5–54.9 %), NaTFPB (x_i = 5.6–1.8 %), PVC (w = 24.3–20.3 %)	Li^+, –3.39; K^+, –2.57; H^+, –2.49	FIM	–	0.05	50	$10^{-5.0}$–1.0	25.0 ± 0.1 °C	[2]
		NH_4^+, –4.18; Mg^{2+}, –4.62; Ca^{2+}, –4.11	FIM	–	0.5				
	Na^+-3, sodium triphenyl 1-(4-methacryl	Li^+, –2.9, –2.8;* K^+, –2.3; –2.4;*	FIM	–	0.5	56–58 55–57*		ISEFT; *after 90 d	[4]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oxymethylphenyl) borate Both were covalently attached to poly- siloxane and cyanopropyl copolymer.	Rb^+, –2.9, –2.7;* Cs^+, –2.6, –2.4;* Mg^{2+}, –3.3, –3.6;* Ca^{2+}, –3.1, –3.0*						in 0.1 M NaCl; t_{resp} < 250 ms; τ = 180–270 d	
	Na^+-3 (w = 1.0 %), DOS (w = 6.0 %), NaTFPB (x_i = 22 %), silicone rubber (w = 92.8 %)	K^+, –2.5; Ca^{2+}, –3.3	FIM	–	0.1	59.7	–	22 ± 2 °C; ISFET	[5]
	Na^+-3 (w = 1.0 %), DOS (w = 5.1 %), NaTFPB (x_i = 50 %), silicone rubber (w = 93.45 %)	K^+, –2.6; Ca^{2+}, –3.3	FIM	–	0.1	59.1	–	22 ± 2 °C; ISFET	[5]
	Na^+-3 (w = 1.0 %), NaTFPB (x_i = 50 %), silicone rubber (w = 98.55 %)	K^+, –2.5; Ca^{2+}, –3.4	FIM	–	0.1	59.4	–	22 ± 2 °C	[5]
	Na^+-3 (w = 1.1 %), NaTFPB (x_i = 56 %), DOS (w = 4.6 %), silicone rubber (w = 93.8 %)	K^+, –2.6; Ca^{2+}, –3.4	FIM	–	0.1	58.7	–	22 ± 2 °C; solid-state	[5]
	Na^+-3 (w = 1.1 %), NaTFPB (x_i = 56 %), silicone rubber (w = 98.4 %)	K^+, –2.5; Ca^{2+}, –3.3	FIM	–	0.1	58.1	–	22 ± 2 °C; solid-state	[5]
	Na^+-3 (w = 10 %), silicone rubber (w = 90 %)	K^+, –2.4; H^+, –3.0; Li^+, –2.9; Mg^{2+}, –3.5; Ca^{2+}, –3.9	FIM	– –	0.1 0.5	N	–	ISFET; t_{90} = 3 s; r.o.o.g.	[6]
Na^+-4	**Na^+-4** (w = 0.7 %), KTpClPB (x_i = 50 %), oNPOE (w = 66.1 %), PVC (w = 33.0 %)	Li^+, –2.5; K^+, –2.3; Cs^+, –2.7; Mg^{2+}, –2.3; Ca^{2+}, –2.6	SSM FIM	0.1 –	0.1 0.1	57.0	–	c_{dl} = 3.1 × 10^{-6} M; t_{resp} = 20.0 s	[3]
	Na^+-4 (w = 0.66 %), oNPOE (w = 66.33 %), PVC (w = 33.11 %)	Li^+, –2.37; K^+, –2.44; Cs^+, –3.57; NH_4^+, –3.32; Mg^{2+}, –2.10; Ca^{2+}, –2.59	SSM	0.1	0.1	58.0	–	25 °C; c_{dl} = 2.8 × 10^{-6} M; t_{90} < 10 s; pH = 10.5	[7]
	Na^+-4 (w = 0.66 %), oNPOE (w = 66.10 %), KTpClPB (x_i = 50 %), PVC (w = 33.05 %)	Li^+, –2.46; K^+, –2.44; Cs^+, –3.81; NH_4^+, –3.50; Mg^{2+}, –2.18; Ca^{2+}, –2.63	MSM	–	0.001	59.7	–	25 °C; c_{dl} = 2.3 × 10^{-6} M; t_{90} < 10 s; pH = 10.5;	[7]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-4 (w = 0.66 %), KTpClPB (x_i = 50 %), DOS (w = 66.10 %), PVC (w = 33.05 %)	Li^+, –2.46; K^+, –2.42; Cs^+, –3.60; NH_4^+, –3.37; Mg^{2+}, –2.22; Ca^{2+}, –2.57	SSM	–	–	60.3	–	c_{dl} = 3.1 × 10^{-6} M; 25 °C; pH = 10.5; τ = 120 d	[7]
	Na^+-4 (w = 0.66 %), DOPP (w = 66.10 %), KTpClPB (x_i = 50 %), PVC (w = 33.05 %)	Li^+, –0.54; K^+, –1.49; Cs^+, –1.92; NH_4^+, –0.49; Mg^{2+}, –2.02; Ca^{2+}, –2.32	SSM	–	–	53.6	–	c_{dl} = 8.7 × 10^{-7} M; 25 °C; pH = 10.5	[7]
Na^+-5	**Na^+-5** (w = 2.3 %), KTpClPB (x_i = 50–60 %), BEHS or BBPA (w = 64.7 %), PVC (w = 32.4–32.3 %),	Li^+, –2.31 ± 0.03; Rb^+, –2.56 ± 0.07; Ca^{2+}, –2.90 ± 0.32; K^+, –1.38 ± 0.006	FIM	–	0.1	N	–	ISFET; interlayer: poly (12-hydroxymethyl methacrylate)	[8]
	Na^+-5 (w = 0.7 %), KTpClPB (x_i = 60 %), oNPOE (w = 66.1 %), PVC (w = 33.0 %)	Li^+, –1.7; K^+, –1.1; Cs^+, –2.3; Mg^{2+}, –2.3; Ca^{2+}, –2.8	SSM	0.1	0.1	64.0	–	c_{dl} = 6.3 × 10^{-6} M; t_{resp} = 40.0 s	[3]
Na^+-6	**Na^+-6** (w = 0.7 %), KTpClPB (x_i = 78 %), oNPOE (w = 66.1 %), PVC (w = 33.0 %)	Li^+, –0.7; K^+, –0.1; Cs^+, –1.6 Mg^{2+}, –1.9; Ca^{2+}, –1.0	SSM FIM	0.1 –	0.1 0.1	53.3	–	c_{dl} = 7.9 × 10^{-6} M; t_{resp} = 60.0 s	[3]
Na^+-7	**Na^+-7** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 5.6–1.8 %), PVC (w = 24.3–20.3 %)	K^+, –2.25; H^+, –3.18	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
	Na^+-7 (w = 0.7 %), KTpClPB (x_i = 54 %), oNPOE (w = 66.1 %), PVC (w = 33.0 %)	Li^+, –2.5; K^+, –2.2; Cs^+, –1.8 Mg^{2+}, >–6.0; Ca^{2+}, –5.7	SSM FIM	0.1 –	0.1 0.1	60.0	–	c_{dl} = 2.3 × 10^{-6} M; t_{resp} = 60.0 s	[3]
	Na^+-7 (w = 1.3 %), KTpClPB (x_i = 44 %), oNPOE (w = 65.0 %), PVC (w = 33.0 %)	Li^+, –2.78; K^+, –2.47; Cs^+, –1.51; NH_4^+, –2.74; H^+, –1.88; Mg^{2+}, –3.12; Ca^{2+}, –3.74	SSM	0.1	0.1	58.1 ± 0.8	–	20 ± 0.1 °C; pH = 7.4; minielectrode	[9]
	Na^+-7 (w = 0.7 %), KTpClPB (x_i = 45 %), oNPOE (w = 66.2 %), PVC (w = 32.9 %)	Li^+, –2.86; K^+, –2.59; H^+, –1.98	FIM	–	0.1	59.6 ± 0.17	10^{-4}–10^{-1}	t_{90} < 10 s; 21 ± 1 °C; 5.5 < pH < 9.5	[10]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-8	**Na^+-8** (w = 3.0 %), TEHP (w = 67.0 %), PVC (w = 30.0 %)	Li^+, –2.24; K^+, –2.66; Rb^+, –3.31; Cs^+, –3.84; NH_4^+, –2.45; Mg^{2+}, –4.65; Ca^{2+}, –4.30; Sr^{2+}, –3.86; Ba^{2+}, –4.56;	FIM	–	0.15	59.2 ± 0.1		25 °C; c_{dl} = 5.5 × 10^{-5} M	[11]
		H^+, +0.66	FIM	–	0.01				
Na^+-9	**Na^+-9** (w = 0.66 %), KTpClPB (x_i = 58 %), DBS (w = 65.84 %), PVC (w = 33.33 %)	Li^+, –2.38; K^+, –1.83; Rb^+, –2.09; Cs^+, –1.80; NH_4^+, –0.85; H^+, –1.91; Be^{2+}, –2.70; Mg^{2+}, –2.86; Ca^{2+}, –2.86; Sr^{2+}, –1.73; Ba^{2+}, –1.90	SSM	0.1	0.1	46.6	–	c_{dl} = $10^{-4.5}$ M; 25 °C	[12]
	Na^+-9 (w = 0.66 %), KTpClPB (x_i = 58 %), oNPOE (w = 65.84 %), PVC (w = 33.33 %)	Li^+, –3.75; K^+, –2.54; Rb^+, –2.59; Cs^+, –3.40; H^+, –2.80; NH_4^+, –2.76; Be^{2+}, –3.21; Mg^{2+}, –4.29; Ca^{2+}, –4.27; Sr^{2+}, –3.10; Ba^{2+}, –4.08	SSM	0.1	0.1	53.6	–	c_{dl} = $10^{-4.6}$ M; 25 °C; t_{resp} < 2 s; τ > 100 d	[12,14]
		Li^+, –2.7; K^+, –2.2; Rb^+, –2.4; Cs^+, –2.0; H^+, –2.3; NH_4^+, –2.0; Be^{2+}, –3.7; Mg^{2+}, –3.5; Ca^{2+}, –3.5; Sr^{2+}, –3.2; Ba^{2+}, –3.1	FIM	–	0.01	–	–		
Na^+-10	**Na^+-10** (w = 9.7 %), NaTFPB (x_i = 6.9 %), DOP (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –3.2; K^+, –2.4; Rb^+, –3.0; Cs^+, –2.9; H^+, –3.3;	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C; r.o.o.g.	[13]
		NH_4^+, –4.1; Ca^{2+}, –3.7; Mg^{2+}, –4.3; Sr^{2+}, –3.9; Ba^{2+}, –4.2	FIM	–	0.5				
	Na^+-10 (w = 9.7 %), sodium dipicrylamide (x_i = 14 %), DOP (w = 65.5 %), PVC (w = 24.3 %)	K^+, –1.94	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C	[13]
	Na^+-10 (w = 9.7 %), KTpClPB (x_i = 12 %), DOP (w = 65.5 %), PVC (w = 24.3 %)	K^+, –2.29	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C	[13]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-10 (w = 9.7 %), NaTFPB (x_i = 6.9 %), dipentyl phthalate (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –3.1; K^+, –2.4; Rb^+, –2.6; Cs^+, –2.6; H^+, –3.2	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C; r.o.o.g.	[13]
		NH_4^+, –3.5; Ca^{2+}, –3.7; Mg^{2+}, –4.4; Sr^{2+}, –3.8; Ba^{2+}, –4.0	FIM	–	0.5				
	Na^+-10 (w = 9.7 %), NaTFPB (x_i = 6.9 %), BEHS (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –3.2; K^+, –2.2; Rb^+, –3.1; Cs^+, –2.9; H^+, –3.1	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C; r.o.o.g.	[13]
		NH_4^+, –3.7; Ca^{2+}, –3.9; Mg^{2+}, –3.6; Sr^{2+}, –4.0; Ba^{2+}, –4.2	FIM	–	0.5				
	Na^+-10 (w = 9.7 %), NaTFPB (x_i = 6.9 %), oNPOE (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –2.9; K^+, –1.7; Rb^+, –2.9; Cs^+, –2.8; H^+, –3.1	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C; r.o.o.g.	[13]
		NH_4^+, –3.7; Ca^{2+}, –3.6; Mg^{2+}, –3.4; Sr^{2+}, –3.7; Ba^{2+}, –3.9	FIM	–	0.5				
	Na^+-10 (w = 9.7 %), NaTFPB (x_i = 6.9 %), FNDPE (w = 65.5 %), PVC (w = 24.3 %)	Li^+, –2.7; K^+, –1.8; Rb^+, –2.5; Cs^+, –2.8; H^+, –2.7;	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C; r.o.o.g.	[13]
		NH_4^+, –3.5; Mg^{2+}, –4.0; Ca^{2+}, –3.7		–	0.5				
Na^+-11	**Na^+-11** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 62 %), PVC (w = 33.33 %)	Li^+, –2.5; K^+, –1.5; Rb^+, –1.4; Cs^+, –1.2; NH_4^+, –2.4; H^+, –1.2; Be^{2+}, –2.6; Mg^{2+}, –3.3; Ca^{2+}, –3.0; Sr^{2+}, –2.8; Ba^{2+}, –3.3	SSM	–	–	55.6	–	c_{dl} = $10^{-3.8}$ M; 25 °C; τ = 7 d; t_{resp} < 2 s	[14]
Na^+-12	**Na^+12** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 58 %), PVC (w = 33.33 %)	Li^+, –2.7; K^+, –2.3; Rb^+, –3.7; Cs^+, –3.9; NH_4^+, –3.5; H^+, –3.1; Be^{2+}, –3.9; Mg^{2+}, –4.2; Ca^{2+}, –4.3; Sr^{2+}, –3.3; Ba^{2+}, –4.4	SSM	–	–	59.0	–	c_{dl} = $10^{-3.9}$ M; 25 °C; τ = 3 d; t_{resp} < 2 s	[14]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-12 (w = 2.3 %), KTpClPB (x_i = 50–60 %), BEHS or BBPA ($w \approx$ 65 %), PVC ($w \approx$ 32 %)	Li^+, –2.50 ± 0.11; Rb^+, –3.05 ± 0.05; Cs^+, –3.30 ± 0.02; Mg^{2+}, –3.61 ± 0.03; Ca^{2+}, –3.54 ± 0.08; K^+, –1.85 ± 0.10	FIM	–	0.1	N	–	ISFET; interlayer: poly (12-hydroxyethyl methacrylate)	[8]
			FIM	–	0.01				
Na^+-13	**Na^+-13** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 57 %), PVC (w = 33.33 %)	K^+, –0.4; Rb^+, –1.0; Cs^+, –0.5; H^+, –0.5; Mg^{2+}, –0.6; Ca^{2+}, –0.4; Sr^{2+}, –0.6; Ba^{2+}, –1.1	SSM	–	–	46.1	$10^{-4.4}$ –$10^{-1.9}$	25 °C; $c_{dl} = 10^{-4.4}$ M; τ = 30 d; t_{resp} < 2 s	[14]
Na^+-14	**Na^+14** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 61 %), PVC (w = 33.33 %)	Li^+, –0.6; K^+, –0.8; Rb^+, –1.1; Cs^+, –1.5; NH_4^+, –0.2; H^+, –0.3; Be^{2+}, –0.8; Mg^{2+}, –1.4; Ca^{2+}, –0.4; Sr^{2+}, –0.5; Ba^{2+}, –0.9	SSM	–	–	43.6	–	c_{dl} = $10^{-3.5}$ M; 25 °C; τ = 60 d; t_{resp} < 2 s	[14]
Na^+-15	**Na^+-15** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 6.3–2.1 %), PVC (w = 24.3–20.3 %)	K^+, –1.70; H^+, –3.40	FIM	–	0.05	–	–	25.0 ± 0.1 °C;	[2]
	Na^+15 (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 57 %), PVC (w = 33.33 %)	Li^+, –2.1; K^+, –1.4 Rb^+, –0.2; Cs^+, –2.9; NH_4^+, –2.7; H^+, –2.3; Be^{2+}, –2.8; Mg^{2+}, –5.4; Ca^{2+}, –3.4; Sr^{2+}, –5.9; Ba^{2+}, –3.0	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]
Na^+-16	**Na^+16** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 56 %), PVC (w = 33.33 %)	Li^+, –3.1; K^+, –1.3; Rb^+, –3.4; Cs^+, –3.1; NH_4^+, –2.9; H^+, –4.1; Be^{2+}, –4.9; Mg^{2+}, –5.3; Ca^{2+}, –4.9; Sr^{2+}, –4.7; Ba^{2+}, –4.6	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]
Na^+-17	**Na^+-17** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (w = 0.17 %), PVC (w = 33.33 %)	Li^+, –2.4; K^+, –0.9; Rb^+, –1.4; Cs^+, –1.2; NH_4^+, –1.8; H^+, –2.2; Be^{2+}, –3.1; Mg^{2+}, –2.8; Ca^{2+}, –3.0; Sr^{2+}, –2.5; Ba^{2+}, –4.6	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-18	**Na^+-18** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 69 %), PVC (w = 33.33 %)	Li^+, –2.8; K^+, –1.5; Pb^+, –2.4; Cs^+, –2.3; NH_4^+, –3.1; H^+, –2.7; Be^{2+}, –3.3; Mg^{2+}, –3.2; Ca^{2+}, –3.1; Sr^{2+}, –2.5; Ba^{2+}, –3.1	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]
Na^+-19	**Na^+-19** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 53 %), PVC (w = 33.33 %)	Li^+, –0.8; K^+, +0.7; Rb^+, +1.0; Cs^+, +0.9; NH_4^+, –0.5; H^+, –0.5; Be^{2+}, –1.3; Mg^{2+}, –1.4; Ca^{2+}, –1.8; Sr^{2+}, –1.4; Ba^{2+}, –1.2	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]
Na^+-20	**Na^+-20** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 51 %), PVC (w = 33.33 %)	Li^+, –1.8; K^+, +0.5; Rb^+, –1.8; Cs^+, –1.7; NH_4^+, –1.8; H^+, –3.0; Be^{2+}, –2.9; Mg^{2+}, –3.5; Ca^{2+}, –3.4; Sr^{2+}, –3.4; Ba^{2+}, –3.4	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]
Na^+-21	**Na^+-21** (w = 0.66 %), oNPOE (w = 65.84 %), KTpClPB (x_i = 53 %), PVC (w = 33.33 %)	Li^+, –1.3; K^+, +1.2; Rb^+, +1.5; Cs^+, +2.1; NH_4^+, +0.4; H^+, –0.3; Be^{2+}, –1.6; Mg^{2+}, –1.5; Ca^{2+}, –1.5; Sr^{2+}, –1.8; Ba^{2+}, –0.8	SSM	–	–	–	–	25 °C; t_{resp} < 2 s	[14]
Na^+-22	**Na^+-22** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 5.9–2.0 %), PVC (w = 24.3–20.3 %)	Li^+, –3.40; K^+, –2.51; H^+, –3.75;	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
		NH_4^+, –4.26; Mg^{2+}, –4.62; Ca^{2+}, –4.10	FIM	–	0.5				
Na^+-23	**Na^+-23** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 6.3–2.1 %), PVC (w = 24.3–20.3 %)	Li^+, –3.36; K^+, –2.49; H^+, –3.55;	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
		NH_4^+, –4.20; Mg^{2+}, –4.69; Ca^{2+}, –4.06	FIM	–	0.5				
Na^+-24	**Na^+-24** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 6.9–2.3 %), PVC (w = 24.3–20.3 %)	Li^+, –3.49; K^+, –2.57; H^+, –4.00;	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
		NH_4^+, –4.27; Mg^{2+}, –4.96; Ca^{2+}, –4.14	FIM	–	0.5				

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-24 (w = 9.7–24.4 %), oNPOE (w = 65.5–54.9 %), NaTFPB (x_i = 6.9–2.3 %), PVC (w = 24.3–20.3 %)	Li^+, –3.40; K^+, –2.38; H^+, –3.18; NH_4^+, –4.40; Mg^{2+}, –4.35; Ca^{2+}, –3.78	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5				
	Na^+-24 (w = 9.7–24.4 %), FNDPE (w = 65.5–54.9 %), NaTFPB (x_i = 6.9–2.3 %), PVC (w = 24.3–20.3 %)	Li^+, –3.02; K^+, –2.07; H^+, –3.64; NH_4^+, –4.06; Mg^{2+}, –4.57; Ca^{2+}, –4.11	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5	–	–		
Na^+-25	**Na^+-25** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 6.1–2.0 %), PVC (w = 24.3–20.3 %)	Li^+, –3.30; K^+, –1.92; H^+, –3.49; NH_4^+, –3.93; Mg^{2+}, –4.76; Ca^{2+}, –4.09	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5				
	Na^+-25 (w = 9.7–24.4 %), oNPOE (w = 65.5–54.9 %), NaTFPB (x_i = 6.1–2.0 %), PVC (w = 24.3–20.3 %)	Li^+, –3.08; K^+, –1.85; H^+, –2.94; NH_4^+, –3.36; Mg^{2+}, –4.10; Ca^{2+}, –3.67	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5				
	Na^+-25 (w = 9.7–24.4 %), FNDPE (w = 65.5–54.9 %), NaTFPB (x_i = 6.1–2.0 %), PVC (w = 24.3–20.3 %)	Li^+, –2.79; K^+, –1.76; H^+, –2.03; NH_4^+, –3.06; Mg^{2+}, –3.49; Ca^{2+}, –3.43	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5				
Na^+-26	**Na^+-26** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 6.3–2.1 %), PVC (w = 24.3–20.3 %)	Li^+, –3.15; K^+, –2.20; H^+, –2.58; NH_4^+, –3.63; Mg^{2+}, –3.82; Ca^{2+}, –3.24	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5				
Na^+-27	**Na^+-27** (w = 9.7–24.4 %), DOP (w = 65.5–54.9 %), NaTFPB (x_i = 6.3–2.1 %), PVC (w = 24.3–20.3 %)	Li^+, –3.29; K^+, –1.67; H^+, –2.76; Ca^{2+}, –3.67	FIM	–	0.05	–	–	25.0 ± 0.1 °C	[2]
			FIM	–	0.5				
Na^+-28	**Na^+-28** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 21 %), PVC (w = 32.1 %)	Li^+, –1.8; K^+, –3.15; Rb^+, –2.2; Cs^+, –1.1; NH_4^+, –3.85; H^+, –4.2; Mg^{2+}, –3.65; Ca^{2+}, –4.2; Sr^{2+}, –4.1; Ba^{2+}, –4.8	–	–	–	> 57	–	25 °C; c_{dl} = 1.0 × 10^{-4} M; r.o.o.g.	[15]
Na^+-29	**Na^+-29** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 26 %),	Li^+, –1.75; K^+, –3.2; Rb^+, –2.35; Cs^+, –1.5; NH_4^+, –3.8; H^+, –4.5;	–	–	–	> 57	–	25 °C; c_{dl} = 1.0 × 10^{-4} M;	[15]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 32.1 %)	Mg^{2+}, –3.7; Ca^{2+}, –4.2 Sr^{2+}, –4.05; Ba^{2+}, –4.7						r.o.o.g.	
Na^+-30	**Na^+-30** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 30 %), PVC (w = 32.1 %)	Li^+, –1.8; K^+, –3.5; Rb^+, –3.6; Cs^+, –2.8; NH_4^+, –3.9; H^+, –4.7; Mg^{2+}, –4.5; Ca^{2+}, –4.1; Sr^{2+}, –4.1; Ba^{2+}, –4.7	–	–	–	> 57	–	25 °C; c_{dl} = 1.0 × 10^{-4} M; r.o.o.g.	[15]
	Na^+-30 (w = 3.2 %), FNDPE (w = 64.1 %), KTpClPB (x_i = 30 %), PVC (w = 32.1 %)	Li^+, –1.8; K^+, –3.6; Rb^+, –3.8; Cs^+, –3.1; NH_4^+, –3.9; H^+, –5.0; Mg^{2+}, –4.5; Ca^{2+}, –4.1; Sr^{2+}, –4.0; Ba^{2+}, –4.8	–	–	–	> 57	–	25 °C; c_{dl} = 1.0 × 10^{-4} M; r.o.o.g.	[15]
Na^+-31	**Na^+-31** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 22 %), PVC (w = 32.1 %)	Li^+, –2.0; K^+, –3.5; Rb^+, –3.6; Cs^+, –2.6; NH_4^+, –3.9; H^+, –4.0; Mg^{2+}, –4.3; Ca^{2+}, –4.1 Sr^{2+}, –4.1; Ba^{2+}, –4.6	–	–	–	> 57	–	25 °C; c_{dl} = 1.0 × 10^{-4} M; r.o.o.g.	[15]
Na^+-32	**Na^+-32** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 13 %), PVC (w = 32.0 %)	Rb^+, +0.06; Cs^+, –0.48; NH_4^+, –0.94; Mg^{2+}, –3.36; Ca^{2+}, –2.49; Sr^{2+}, –2.22; Ba^{2+}, –2.62	FIM	–	0.02 or 0.01		–	24–25 °C	[16]
				–	0.10 or 0.50				
				–	1.0				
				–	0.5				
	Na^+-32 (w = 3.2 %), KTpClPB (x_i = 13 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –2.48 ± 0.03; K^+, +0.42 ± 0.04	FIM	–	0.1 or 0.5	59	–	24–25 °C	[17]
				–	0.05 or 0.01				
Na^+-33	**Na^+-33** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 15 %), PVC (w = 32.0 %)	Rb^+, –0.29; Cs^+, –0.88; NH_4^+, –1.48; Mg^{2+}, –3.53; Ca^{2+}, –2.88; Sr^{2+}, –2.50; Ba^{2+}, –2.59	FIM	–	0.02 or 0.01		–	24–25 °C	[16]
				–	0.10 or 0.50				
				–	1.0				
				–	0.5				
	Na^+-33 (w = 3.2 %), KTpClPB (x_i = 15 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.08 ± 0.07; K^+, +0.07 ± 0.03	FIM	–	0.1 or 0.5	59	–	24–25 °C	[17]
				–	0.05 or 0.01				
Na^+-34	**Na^+-34** (w = 3.2 %), oNPOE (w = 64.1 %),	Li^+, –3.23; K^+, –0.46;	FIM	–	0.10 or 0.05		–	24–25 °C	[16]
				–	0.01 or 0.05				

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i = 16 %), PVC (w = 32.0 %)	Rb^+, –0.81; Cs^+, –1.49; NH_4^+, –1.93; Mg^{2+}, –3.67; Ca^{2+}, –3.20; Sr^{2+}, –2.62; Ba^{2+}, –3.08		–	0.02 or 0.10				
				–	0.10 or 0.50				
				–	1.0				
				–	0.50				
Na^+-35	**Na^+-35** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 17 %), PVC (w = 32.0 %)	Rb^+, –0.88; Cs^+, –1.46; NH_4^+, –1.97; Mg^{2+}, –3.81; Ca^{2+}, –3.40; Sr^{2+}, –2.63; Ba^{2+}, –2.56	FIM	–	0.02 or 0.10		–	24–25 °C	[16]
				–	0.10 or 0.50				
				–	1.0				
				–	0.50				
	Na^+-35 (w = 3.2 %), KTpClPB (x_i = 17 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.87 ± 0.04; K^+, –0.05 ± 0.04	FIM	–	0.1 or 0.5	59	–	24–25 °C	[17]
				–	0.05 or 0.01				
Na^+-36	**Na^+-36** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 18 %), PVC (w = 32.0 %)	Rb^+, –1.42; Cs^+, –2.05; NH_4^+, –2.11; Mg^{2+}, –3.76; Ca^{2+}, –2.90; Sr^{2+}, –2.31; Ba^{2+}, –1.40	FIM	–	0.02 or 0.10		–	24–25 °C	[16]
				–	0.10 or 0.50				
				–	1.0				
				–	0.50				
	Na^+-36 (w = 3.2 %), KTpClPB (x_i = 19 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.02 ± 0.06; K^+, –0.79 ± 0.03	FIM	–	0.1 or 0.5	59	–	24–25 °C	[17]
				–	0.05 or 0.01				
Na^+-37	**Na^+-37** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 22 %), PVC (w = 32.0 %)	Rb^+, –1.48; Cs^+, –2.18; NH_4^+, –2.13; Mg^{2+}, –3.88; Ca^{2+}, –3.19; Sr^{2+}, –2.41; Ba^{2+}, –1.56	FIM	–	0.02 or 0.10		–	24–25 °C	[16]
				–	0.10 or 0.50				
				–	1.0				
				–	0.50				
	Na^+- 37 (w = 3.2 %), KTpClPB (x_i = 22 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.14 ± 0.02; K^+, –0.98 ± 0.013	FIM	–	0.01	–	–	24–25 °C	[18]
				–	0.05				
Na^+-38	**Na^+-38** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 16 %), PVC (w = 32.0 %)	Rb^+, –0.35; Cs^+, –1.08; NH_4^+, –1.68; Mg^{2+}, –3.73; Ca^{2+}, –3.25; Sr^{2+}, –2.53; Ba^{2+}, –3.09	FIM	–	0.02 or 0.10		–	24–25 °C	[16]
				–	0.10 or 0.50				
				–	1.0				
				–	0.50				

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-38 (w = 3.2 %), KTpClPB (x_i = 16 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –2.99 ± 0.02; K^+, –0.34 ± 0.03	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-39	**Na^+-39** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 18 %), PVC (w = 32.0 %)	Li^+, –3.49; K^+, +1.34 Rb^+, –1.96; Cs^+, –2.53; NH_4^+, –3.03; Mg^{2+}, –3.81; Ca^{2+}, –3.78; Sr^{2+}, –2.62; Ba^{2+}, –3.63	FIM	– – – –	0.01 or 0.05 0.02 or 0.10 0.10 or 0.50 1.0 0.50		–	24–25 °C	[16]
Na^+-40	**Na^+-40** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 19 %), PVC (w = 32.0 %)	Rb^+, –2.16; Cs^+, –2.61; NH_4^+, –3.20; Mg^{2+}, –3.80; Ca^{2+}, –3.84; Sr^{2+}, –2.70; Ba^{2+}, –3.18	FIM	– – – –	0.02 or 0.10 0.10 or 0.50 1.0 0.50		–	24–25 °C	[16]
	Na^+-40 (w = 3.2 %), KTpClPB (x_i = 18 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.74; K^+, –1.36	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-41	**Na^+-41** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 20 %), PVC (w = 32.0 %)	Rb^+, –2.62; Cs^+, –3.07; NH_4^+, –3.02; Mg^{2+}, –3.83; Ca^{2+}, –3.55; Sr^{2+}, –2.66; Ba^{2+}, –2.76	FIM	– – – –	0.02 or 0.10 0.10 or 0.50 1.0 0.50		–	24–25 °C	[16]
Na^+-42	**Na^+-42** (w = 3.2 %), oNPOE (w = 64.1 %), KTpClPB (x_i = 23 %), PVC (w = 32.0 %)	Rb^+, –2.77; Cs^+, –3.18; NH_4^+, –3.12; Mg^{2+}, –3.85; Ca^{2+}, –3.63; Sr^{2+}, –2.71; Ba^{2+}, –2.68	FIM	– – – –	0.02 or 0.10 0.10 or 0.50 1.0 0.50		–	24–25 °C	[16]
	Na^+-42 (w = 3.2 %), KTpClPB (x_i = 24 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	K^+, –2.13 ± 0.01* Li^+, –2.91 ± 0.04;* Rb^+, –2.9; Cs^+, –3.3; H^+, –2.7; Mg^{2+}, –4.0; NH_4^+, –3.2; Ca^{2+}, –3.8; Sr^{2+}, –2.8; Ba^{2+}, –2.8	FIM	– – – –	0.05 0.01 1.0 0.5	–	–	24–25 °C; r.o.o.g.; * numerical data	[18]
	Na^+-42 (w = 3.2 %), KTpClPB (x_i = 24 %), DBE (w = 64.1 %),	K^+, –1.9; Li^+, –3.0; Rb^+, –2.7; Cs^+, –3.2; H^+, –2.7;	FIM	– –	0.05 0.01	–	–	24–25 °C; r.o.o.g.	[18]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 32.0 %)	Mg^{2+}, –3.7; NH_4^+, –3.0; Ca^{2+}, –3.9; Sr^{2+}, –2.7; Ba^{2+}, –3.3		– –	1.0 0.5				
	Na^+-42 (w = 3.2 %), KTpClPB (x_i = 24 %), DOS (w = 64.1 %), PVC (w = 32.0 %)	K^+, –1.90 Li^+, –3.1; Rb^+, –2.7; Cs^+, –3.2; H^+, –2.9; Mg^{2+}, –3.9; NH_4^+, –3.1; Ca^{2+}, –3.9; Sr^{2+}, –2.9; Ba^{2+}, –3.2	FIM	– – – –	0.05 0.01 1.0 0.5	–	–	24–25 °C; r.o.o.g.	[18]
	Na^+-42 (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –2.84 ± 0.01; K^+, –1.98 ± 0.02	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-43	**Na^+-43** (w = 0.9 %), BBPA (w = 67.4 %), PVC (w = 31.7 %)	K^+, –1.43	SSM	0.01	0.01	53.0	–	25 ± 0.5 °C; $c_{dl} = 4.0 \times 10^{-6}$ M; FIA	[20]
	Na^+-43 (w = 0.9 %), BEHS (w = 67.4 %), PVC (w = 31.7 %)	K^+, –0.81	SSM	0.01	0.01	52.0	–	25 ± 0.5 °C; $c_{dl} = 1.8 \times 10^{-6}$ M; FIA	[20]
	Na^+-43 (w = 0.9 %), DOS (w = 67.4 %), PVC (w = 31.7 %)	Li^+, –2.93; K^+, –1.38; Mg^{2+}, –3.96; Ca^{2+}, –4.06	SSM	0.01	0.01	60.0	–	25 ± 0.5 °C; $c_{dl} = 1.3 \times 10^{-6}$ M; FIA	[20]
	Na^+-43 (w = 0.9 %), oNPOE (w = 67.4 %), PVC (w = 31.7 %)	Li^+, –2.40; K^+, –1.74; Mg^{2+}, –3.94; Ca^{2+}, –3.88	SSM	0.01	0.01	60.8	–	25 ± 0.5 °C; $c_{dl} = 6.3 \times 10^{-6}$ M; FIA	[20]
	Na^+-43 (w = 0.9 %), oNPOE (w = 67.2 %), KTpClPB (x_i = 50 %), PVC (w = 31.7 %)	Li^+, –1.80; K^+, –1.85; Mg^{2+}, –3.15; Ca^{2+}, –3.68	SSM	0.01	0.01	61.0	–	25 ± 0.5 °C; $c_{dl} = 6.0 \times 10^{-6}$ M; FIA	[20]
	Na^+-43 (membrane composition not reported)	Li^+, –3.7; K^+, –1.9; NH_4^+, –3.0; Ca^{2+}, –4.2 $N(CH_3)_4^+$, –2.3; $N(C_4H_{11})_4^+$, +2.1; $N(CH_3)_3(C_{18}H_{37})^+$, +3.9	SSM	–	0.1	55–57	5×10^{-5}–1.0	25 °C; t_{90} = 10 s; τ > 120 d	[21]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-43, DOA, PVC (weight ratio not reported)	Li^+, –3.8; K^+, –1.7; Rb^+, –2.0; Cs^+, –2.2; NH_4^+, –2.7; Ca^{2+}, –4.3; Sr^{2+}, –4.5; Mg^{2+}, –4.2; Ba^{2+}, –4.1	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB (x_i = 5 %), DOA, PVC (weight ratio not reported)	Li^+, –3.6; K^+, –1.8; Rb^+, –2.1; Cs^+, –2.4; NH_4^+, –2.9; Ca^{2+}, –3.2; Sr^{2+}, –4.4; Mg^{2+}, –3.4; Ba^{2+}, –3.7	SSM	–	0.05	55	5×10^{-5}–1	r.o.o.g.	[22]
	Na^+-43, NaTFPB (x_i = 15 %), DOA, PVC (weight ratio not reported)	Li^+, –4.0; K^+, –1.8; Rb^+, –2.0; Cs^+, –2.3; NH_4^+, –2.8; Ca^{2+}, –4.0; Sr^{2+}, –4.2; Mg^{2+}, –4.2; Ba^{2+}, –3.4	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB (x_i = 20 %), DOA, PVC (weight ratio not reported)	Li^+, –3.5; K^+, –1.7; Rb^+, –2.0; Cs^+, –2.3; NH_4^+, –2.8; Ca^{2+}, –4.0; Sr^{2+}, –4.0; Mg^{2+}, –4.3; Ba^{2+}, –3.3	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB (x_i = 30 %), DOA, PVC (weight ratio not reported)	Li^+, –3.4; K^+, –1.7; Rb^+, –1.9; Cs^+, –2.2; NH_4^+, –2.7; Ca^{2+}, –3.8; Sr^{2+}, –3.7; Mg^{2+}, –4.1; Ba^{2+}, –3.1	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB (x_i = 45 %), DOA, PVC (weight ratio not reported)	Li^+, –3.2; K^+, –1.4; Rb^+, –1.7; Cs^+, –1.9; NH_4^+, –2.3; Ca^{2+}, –3.5; Sr^{2+}, –3.4; Mg^{2+}, –3.8; Ba^{2+}, –2.7	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB (x_i = 75 %), DOA, PVC (weight ratio not reported)	Li^+, –2.2; K^+, –0.6; Rb^+, –0.8; Cs^+, –1.0; NH_4^+, –1.5; Ca^{2+}, –2.4; Sr^{2+}, –2.3; Mg^{2+}, –2.9; Ba^{2+}, –1.4	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-43, NaTFPB (x_i = 94 %), DOA, PVC (weight ratio not reported)	Li^+, –0.5; K^+, +0.6; Rb^+, +0.5; Cs^+, +0.5; NH_4^+, +0.1; Ca^{2+}, –1.0; Sr^{2+}, –0.8; Mg^{2+}, –1.5; Ba^{2+}, +0.3	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB, DOS, PVC (weight ratio not reported)	Li^+, –3.5; K^+, –1.7; Rb^+, –1.9; Cs^+, –2.1; NH_4^+, –2.6; Ca^{2+}, –4.2; Sr^{2+}, –4.4; Mg^{2+}, –4.0; Ba^{2+}, –4.1	SSM	–	0.05	56	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB, DBS, PVC (weight ratio not reported)	Li^+, –3.5; K^+, –1.8; Rb^+, –1.9; Cs^+, –2.1; NH_4^+, –2.7; Ca^{2+}, –4.2; Sr^{2+}, –4.5; Mg^{2+}, –4.2; Ba^{2+}, –4.2	SSM	–	0.05	56	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB, DPP, PVC (weight ratio not reported)	Li^+, –3.6; K^+, –2.0; Rb^+, –2.2; Cs^+, –2.5; NH_4^+, –3.1; Ca^{2+}, –4.9; Sr^{2+}, –5.2; Mg^{2+}, –4.8; Ba^{2+}, –4.7	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB, TEHP, PVC (weight ratio not reported)	Li^+, –1.5; K^+, –1.9; Rb^+, –1.8; Cs^+, –2.1; NH_4^+, –1.7; Ca^{2+}, –2.4; Sr^{2+}, –3.1; Mg^{2+}, –3.3; Ba^{2+}, –2.8	SSM	–	0.05	55	5×10^{-5}–1.0	r.o.o.g.	[22]
	Na^+-43, NaTFPB, oNPOE, PVC (weight ratio not reported)	Li^+, –2.6; K^+, –1.9; Rb^+, –2.1; Cs^+, –2.2; NH_4^+, –2.2; Ca^{2+}, –3.7; Sr^{2+}, –3.1; Mg^{2+}, –3.0; Ba^{2+}, –2.9	SSM	–	0.05	46	5×10^{-4}–1.0	r.o.o.g.	[22]
		Li^+, –3.6;* K^+, –2.1;* Rb^+, –2.4*; Cs^+, –3.2;* NH_4^+, –3.2;* Ca^{2+}, –3.7;* Sr^{2+}, –4.1;* Mg^{2+}, –3.9;* Ba^{2+}, –3.8*	SSM	–	0.05	46*	5×10^{-4}–1.0*	* after 3.5 d in 4 M NaCl; r.o.o.g.	
	Na^+-43 (w = 2.8 %),	Li^+, –3.4; K^+, –1.90;	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	NaTFPB (x_i = 15 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Rb^+, –2.3; Cs^+, –2.6; H^+, –3.4; NH_4^+, –3.3; Ca^{2+}, –3.3; Mg^{2+}, –4.4	FIM	–	0.5				
Na⁺-44	**Na⁺-44** (w = 10 %), silicone rubber (w = 90 %)	K^+, –2.5; H^+, –3.15; Li^+, –3.1; Mg^{2+}, –3.5; Ca^{2+}, –3.9; NH_4^+, –4.15	FIM	– – –	0.1 0.5 0.8	N	–	ISFET; t_{90} = 1 s; r.o.o.g.	[6]
	Na⁺-44 (w = 10 %), silicone rubber (w = 90 %)	K^+, –2.4; H^+, –3.6; Li^+, –2.8; Mg^{2+}, –3.5; Ca^{2+}, –3.9; NH_4^+, –4.2	FIM	– – –	0.1 0.5 1.0	N	3×10^{-5}– 6×10^{-1}	r.o.o.g	[24]
	Na⁺-44 (w = 6.3 %), DOS (w = 62.5 %), PVC (w = 31.2 %)	K^+, –2.37; H^+, –3.06; Li^+, –3.5; Mg^{2+}, –3.87; Ca^{2+}, –4.25; NH_4^+, –4.06	FIM	– – –	0.1 0.5 1.0	N	–	r.o.o.g.	[24]
Na⁺-45	**Na⁺-45** (w = 10 %), silicone rubber (w = 90 %)	K^+, –2.0; H^+, –0.95; Li^+, –2.9; Mg^{2+}, –3.4; Ca^{2+}, –3.7; NH_4^+, –2.7	FIM	– – –	0.1 0.5 0.8	N	–	ISFET; t_{90} = 1 s; r.o.o.g.	[6]
Na⁺-46	**Na⁺-46** (w = 1.0 %), KTFPB (x_i = 49.8 %), oNPOE (w = 65.6 %), PVC (w = 32.8 %)	Li^+, – 0.2; K^+, –0.7; Rb^+, –1.4; Cs^+, –1.3; NH_4^+, –1.7; H^+, –2.4; Mg^{2+}, –3.5; Ca^{2+}, –2.9; Sr^{2+}, –2.7; Ba^{2+}, –1.9	SSM	0.1	0.1	53.6 ± 0.2	–	22 ± 1 °C; r.o.o.g.	[25]
	Na⁺-46 (w = 1.0 %), KTFPB (x_i = 10.1 %), oNPOE (w = 65.1 %), PVC (w = 32.6 %)	Li^+, –0.6; K^+, –1.2; Rb^+, –2.0; Cs^+, –2.3; NH_4^+, –2.3; H^+, –2.95; Mg^{2+}, –3.9; Ca^{2+}, –3.3; Sr^{2+}, –3.1; Ba^{2+}, –1.4	SSM	0.1	0.1	59.6 ± 0.9	–	22 ± 1 °C; r.o.o.g	[25]
	Na⁺-46 (w = 1.1 %), oNPOE (w = 65.9 %), PVC (w = 33.0 %)	Li^+, –0.7; K^+, –1.1; Rb^+, –1.6; Cs^+, –1.8; NH_4^+, –0.85; H^+, +2.20; Mg^{2+}, –1.9; Ca^{2+}, –2.1; Sr^{2+}, –1.7; Ba^{2+}, –1.0	SSM	0.1	0.1	28.5 ± 2.0	–	22 ± 1 °C; r.o.o.g.	[25]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$lgK_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-46 (w = 3 %), KTpClPB (x_i = 45 %), DBE (w = 70 %), PVC (w = 26 %)	Li^+, –1.2; K^+, –1.2; Rb^+, –2.0; Cs^+, –2.4; Mg^{2+}, –2.8; Ca^{2+}, –2.7; Sr^{2+}, –2.5; Ba^{2+}, –0.8	SSM	0.1	0.1	–	–	pH = 6.00; r.o.o.g.	[26]
		Li^+, +0.1; K^+, –0.1; Rb^+, –0.7; Cs^+, –1.0; Mg^{2+}, –2.8; Ca^{2+}, –1.1; Sr^{2+}, –0.2; Ba^{2+}, +1.0	SSM	0.1	0.1	–	–	pH = 8.00; r.o.o.g.	[26]
Na^+-47	**Na^+-47** (w = 3.2 %), KTpClPB (x_i = 0.05 %), DOS (w = 63.2 %), PVC (w = 31.6 %)	K^+, –4.9 ± 0.1; Mg^{2+}, –8.0 ± 0.1; Ca^{2+}, –7.7 ± 0.1	–	–	–	61.3 ± 1.5	–	21.5 ± 0.5 °C; conditioned in 0.01 M KCl; *conditioned in 0.01 M NaCl	[27]
		K^+, –3.5 ± 0.1;* Mg^{2+}, –4.5 ± 0.1;* Ca^{2+}, –4.2 ± 0.1*	–	–	–	59.5 ± 0.1*	–		
Na^+-48	**Na^+-48** (w = 2.2 %), KTpClPB (x_i = 20 %), aromatic epoxyacrylate (w = 45.3 %), copolymerizable benzophenone photoinitiator (w = 5.6 %), bis(2-ethylhexyl) phtalate (w = 23.9 %), 1,6-hexanediyl diacrylate (w = 22.6 %)	Li^+, –1.9; K^+, –0.4; NH_4^+, –1.5; Mg^{2+}, –2.9; Ca^{2+}, –1.7; Sr^{2+}, –2.2; Ba^{2+}, –0.4	FIM	–	–	58.3 ± 0.8	10^{-4}–10^{-1}	photopolymerised membranes; $c_{dl} = 2 \times 10^{-5}$ M; $t_{90} < 5$ s; r.o.o.g.	[28] FIA;
	Na^+-48 (membrane composition not reported)	Li^+, –1.8; K^+, –0.4; NH_4^+, –0.9; Ca^{2+}, –3.0 $N(CH_3)_4^+$, –1.6; $N(C_4H_{11})_4^+$, +3.1; $N(CH_3)_3(C_{18}H_{37})^+$, +4.7	SSM	–	0.1	54–56	5×10^{-4}–1.0	25 °C; t_{90} = 10 s; τ > 120 d	[21]
Na^+-49	**Na^+-49** (w = 4.2 %), NaTPB (x_i = 25 %), oNPOE (w = 63.3 %), PVC (w = 31.6 %)	Li^+, –1.3; K^+, –2.1; Rb^+, –1.8; Cs^+, –1.7; NH_4^+, –2.6; H^+, –2.8; Mg^{2+}, –3.9; Ca^{2+}, –2.4; Sr^{2+}, –3.6; Ba^{2+}, –3.6; Al^{3+}, –2.4; Cd^{2+}, –3.1; Cu^{2+}, –2.9; Co^{2+}, –3.2; Ni^{2+}, –3.1; Zn^{2+}, –3.3; Fe^{3+}, –3.3	SSM	–	–	58 ± 0.3	10^{-5}–10^{-1}	c_{dl} = 7×10^{-6} M; 2.0 < pH < 10.0; r.o.o.g.	[29]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-50	**Na^+-50** (w = 4.2 %), NaTPB (x_i = 27 %), oNPOE (w = 63.3 %), PVC (w = 31.6 %)	Li^+, –2.0; K^+, –0.7; Rb^+; –1.3; Cs^+, –0.9 NH_4^+, –2.2; H^+, –2.7; Mg^{2+}, –3.0; Ca^{2+}, –2.5; Sr^{2+}, –2.9; Ba^{2+}, –2.4; Al^{3+}, –1.5; Cd^{2+}; –3.2; Cu^{2+}, –3.2; Co^{2+}, –3.4; Zn^{2+}, –2.9; Mo^{2+}, –3.3; Fe^{3+}, –2.6	SSM	–	–	58 ± 0.3		c_{dl} = 7×10^{-6} M; r.o.o.g.; 2.0 < pH < 10.0	[29]
Na^+-51	**Na^+-51** (w = 4.2 %), NaTPB (x_i = 33 %), oNPOE (w = 63.2 %), PVC (w = 31.6 %)	Li^+, –2.5; K^+, –0.8; Rb^+; +1.1; Cs^+, +0.4; NH_4^+, –0.1; Mg^{2+}, –2.8; Ca^{2+}, –2.0; Sr^{2+}, –2.5; Ba^{2+}, –1.9; Al^{3+}, –2.6; Cd^{2+}, –2.7; Cu^{2+}, –2.8; Co^{2+}, –3.1; Ni^{2+}, –1.3; Zn^{2+}, –3.3; Mo^{2+}, –3.0; Fe^{3+}, –3.2	SSM	–	–	58 ± 0.3	–	c_{dl} = 7×10^{-6} M; 2.0 < pH < 10.0; r.o.o.g.	[29]
Na^+-52	**Na^+-52** (w = 9.0 %), KTpClPB (x_i = 1.5 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, +0.8 Li^+, –1.5; Rb^+; +0.6; Cs^+, +1.8; H^+, –2.0; NH_4^+, –0.3; Mg^{2+}, –3.2; Ca^{2+}, –2.8	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]
Na^+-53	**Na^+-53** (w = 9.0 %), KTpClPB (x_i = 1.8 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, –0.95 Li^+, –2.4; Rb^+; –1.2; Cs^+, –1.0; H^+, –3.1; NH_4^+, –2.1; Mg^{2+}, –4.1; Ca^{2+}, –3.4	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]
Na^+-54	**Na^+-54** (w = 9.0 %), KTpClPB (x_i = 2.2 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, –1.0; Rb^+; –0.9; Li^+, –2.0; Cs^+, –1.0; H^+, –3.8; NH_4^+, –1.9; Mg^{2+}, –3.9; Ca^{2+}, –3.7	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]
Na^+-55	**Na^+-55** (w = 9.0 %), KTpClPB (x_i = 2.9 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, –0.92; Rb^+; –1.3; Li^+, –2.6; Cs^+, –0.95; H^+, –3.7; NH_4^+, –2.1; Mg^{2+}, –3.9; Ca^{2+}, –3.4	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-56	**Na^+-56** (w = 9.0 %), KTpClPB (x_i = 1.8 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, –0.73; Rb^+; –1.1; Li^+, –2.5; Cs^+, –0.8; H^+, –3.1; NH_4^+, –2.1; Mg^{2+}, –3.9; Ca^{2+}, –3.5	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]
Na^+-57	**Na^+-57** (w = 9.0 %), KTpClPB (x_i = 2.2 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, –0.90; Rb^+, –1.2; Li^+, –2.4; Cs^+, –0.9; H^+, –3.05; NH_4^+, –2.05; Mg^{2+}, –3.8; Ca^{2+}, –3.3	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]
Na^+-58	**Na^+-58** (w = 9.0 %), KTpClPB (x_i = 2.6 %), oNPOE (w = 60.5 %), PVC (w = 30.2 %)	K^+, –0.95; Rb^+, –0.8; Li^+, –1.85; Cs^+, –0.8; H^+, –3.5; NH_4^+, –1.75; Mg^{2+}, –3.9; Ca^{2+}, –3.6	FIM SSM	– 0.01	0.01 0.01	– –	– –	25 ± 1 °C; r.o.o.g.	[30]
Na^+-59	**Na^+-59** (w = 3 %), KTpClPB (x_i = 46 %), DBE (w = 70 %), PVC (w = 26 %)	Li^+, –0.6; K^+, –0.8; Rb^+, –1.0; Cs^+, –1.8; Mg^{2+}, –3.6; Ca^{2+}, –3.5; Sr^{2+}, –3.3; Ba^{2+}, –3.1	SSM	0.1	0.1	–	–	r.o.o.g.	[26]
Na^+-60	**Na^+-60** (w = 3 %), KTpClPB (x_i = 47 %), DBE (w = 70 %), PVC (w = 26 %)	Li^+, –0.5; K^+, –1.1; Rb^+, –1.8; Cs^+, –2.6; Mg^{2+}, –3.8; Ca^{2+}, –3.5; Sr^{2+}, –3.2; Ba^{2+}, –2.8	SSM	0.1	0.1	–	–	r.o.o.g.	[26]
Na^+-61	**Na^+-61** (w = 3 %), KTpClPB (x_i = 49 %), DBE (w = 70 %), PVC (w = 26 %)	Li^+, –0.4; K^+, –1.1; Rb^+, –1.8; Cs^+, –2.6; Mg^{2+}, –4.3; Ca^{2+}, –4.1; Sr^{2+}, –3.9; Ba^{2+}, –3.6	SSM	0.1	0.1	–	–	r.o.o.g.	[26]
Na^+-62	**Na^+-62** (w = 3 %), KTpClPB (x_i = 51 %), DBE (w = 70 %), PVC (w = 26 %)	Li^+, –0.7; K^+, –0.7; Rb^+, –1.3; Cs^+, –2.1; Mg^{2+}, –4.3; Ca^{2+}, –4.0; Sr^{2+}, –3.8; Ba^{2+}, –3.5	SSM	0.1	0.1	–	–	r.o.o.g.	[26]
Na^+-63	**Na^+-63** (w = 3 %), KTpClPB (x_i = 56 %), DBE (w = 70 %), PVC (w = 26 %)	Li^+, –0.6; K^+, –01.2 Rb^+, –1.7; Cs^+, –2.5; Mg^{2+}, –4.6; Ca^{2+}, –3.6; Sr^{2+}, –3.6; Ba^{2+}, –3.0	SSM	0.1	0.1	59	–	r.o.o.g.	[26]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-63 (w = 3 %), KTpClPB (x_i = 56 %), BEHS (w = 70 %), PVC (w = 26 %)	Li^+, –0.6; K^+, –0.6; Rb^+, –1.1; Cs^+, –2.8; Mg^{2+}, –4.8; Ca^{2+}, –4.2; Sr^{2+}, –4.1; Ba^{2+}, –3.8	SSM	0.1	0.1	59	–	r.o.o.g.	[26]
	Na^+-63 (w = 3 %), KTpClPB (x_i = 56 %), diisodecyl phosphate (w = 70 %), PVC (w = 26 %)	Li^+, –0.7; K^+, –0.7; Rb^+ –1.2; Cs^+, –2.7; Mg^{2+}, –4.1; Ca^{2+}, –3.6; Sr^{2+}, –3.2; Ba^{2+}, –2.8	SSM	0.1	0.1	59	–	r.o.o.g.	[26]
	Na^+-63 (w = 3 %), KTpClPB (x_i = 56 %), oNPOE (w = 70 %), PVC (w = 26 %)	Li^+, –0.7; K^+, –0.7; Rb^+, –1.4; Cs^+, –2.9; Mg^{2+}, –4.3; Ca^{2+}, –4.0; Sr^{2+}, –3.5; Ba^{2+}, –3.0	SSM	0.1	0.1	59	–	r.o.o.g.	[26]
	Na^+-63 (w = 3 %), KTpClPB (x_i = 56 %), oNPPE (w = 70 %), PVC (w = 26 %)	Li^+, –0.7; K^+, –0.8; Rb^+; –1.3; Cs^+, –2.5; Mg^{2+}, –3.8; Ca^{2+}, –3.2; Sr^{2+}, –3.1; Ba^{2+}, –2.8	SSM	0.1	0.1	59	–	r.o.o.g.	[26]
Na^+-64	**Na^+-64** (w = 10 %), KTpClPB (x_i = 16 %), DBE (w = 60 %), PVC (w = 25 %)	Li^+, –2.3; K^+, –0.9; Rb^+, –1.1; Cs^+, –1.4; Mg^{2+}, –3.4; Ca^{2+}, –3.2; Sr^{2+}, –3.2; Ba^{2+}, –2.4	SSM	0.1	0.1	–	–	r.o.o.g.	[31]
Na^+-65	**Na^+-65** (w = 10 %), KTpClPB (x_i = 27 %), DBE (w = 60 %), PVC (w = 25 %)	Li^+, –2.5; K^+, –1.1; Rb^+, –1.3; Cs^+, –1.7; Mg^{2+}, –3.5; Ca^{2+}, –3.2; Sr^{2+}, –3.0; Ba^{2+}, –3.1	SSM	0.1	0.1	–	–	r.o.o.g.	[31]
Na^+-66	**Na^+-66** (w = 10 %), KTpClPB (x_i = 22 %), DBE (w = 60 %), PVC (w = 25 %)	Li^+, –1.7; K^+, –2.65 Rb^+; –3.1; Cs^+, –2.4; Mg^{2+}, –3.3; Ca^{2+}, –3.0; Sr^{2+}, –2.7; Ba^{2+}, –1.1	SSM	0.1	0.1	54–56	2×10^{-5}–1	r.o.o.g.	[31]
Na^+-67	**Na^+-67** (w = 10 %), KTpClPB (x_i = 23 %), DBE (w = 60 %), PVC (w = 25 %)	Li^+, –1.8; K^+, –2.75; Rb^+; –3.2; Cs^+, –2.6; Mg^{2+}, –3.7; Ca^{2+}, –3.02; Sr^{2+}, –3.09; Ba^{2+}, –1.3	SSM	0.1	0.1	54–56	2×10^{-5}–1	r.o.o.g.	[31]
Na^+-68	**Na^+-68** (w = 10 %), KTpClPB (x_i = 25 %), DBE (w = 60 %), PVC (w = 25 %)	Li^+, –1.8; K^+, +0.2; Rb^+, +0.5; Cs^+, –1.1; Mg^{2+}, –3.3; Ca^{2+}, –3.0; Sr^{2+}, –2.8; Ba^{2+}, –1.4	SSM	0.1	0.1	–	–	r.o.o.g.	[31]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na$^+$-69	**Na$^+$-69** (w = 10 %), KTpClPB (x_i = 28 %), DBE (w = 60 %), PVC (w = 25 %)	Li^+, –1.8; K^+, +0.6; Rb^+, +0.9; Cs^+, –0.8; Mg^{2+}, –3.1; Ca^{2+}, –3.0; Sr^{2+}, –2.7; Ba^{2+}, –1.4	SSM	0.1	0.1	–	–	r.o.o.g.	[31]
Na$^+$-70	**Na$^+$-70** (w = 1.3 %), KTpClPB (x_i = 50 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	K^+, –2.63; Mg^{2+}, –3.0; Ca^{2+}, –0.1	FIM	–	0.1	60.5	–	c_{dl} = 10^{-6} M; 37 °C	[32]
Na$^+$-71	**Na$^+$-71** (w = 1.3 %), KTpClPB (x_i = 37 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	K^+, –0.1; Mg^{2+}, –3.0; Ca^{2+}, –3.1	FIM	–	0.1	50	–	c_{dl} = $10^{-3.5}$ M; 37 °C	[32]
Na$^+$-72	**Na$^+$-72** (w = 1.3 %), KTpClPB (x_i = 52 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	K^+, –1.5; Mg^{2+}, 0.0; Ca^{2+}, 0.0	FIM	–	0.1	N	–	c_{dl} = $10^{-4.3}$ M; 37 °C	[32]
Na$^+$-73	**Na$^+$-73** (w = 1.3 %), KTpClPB (x_i = 39 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	K^+, –0.2; Ca^{2+}, –0.8	FIM	1.0	0.1	N	–	c_{dl} = $10^{-4.3}$ M; 37 °C	[32]
Na$^+$-74	**Na$^+$-74** (w = 3.2 %), KTpClPB (x_i = 19 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.31 ± 0.06; K^+, –0.89 ± 0.05	FIM	– –	0.01 0.05	–	–	24–25 °C	[18]
Na$^+$-75	**Na$^+$-75** (w = 3.2 %), KTpClPB (x_i = 21 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.21 ± 0.02; K^+, –1.90 ± 0.01	FIM	– –	0.01 0.05	–	–	24–25 °C	[18]
Na$^+$-76	**Na$^+$-76** (w = 3.2 %), KTpClPB (x_i = 23 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.02 ± 0.03; K^+, –2.03 ± 0.04	FIM	– –	0.01 0.05	–	–	24–25 °C; r.o.o.g.	[18]
Na$^+$-77	**Na$^+$-77** (w = 3.2 %), KTpClPB (x_i = 26 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –2.85 ± 0.01; K^+, –1.92 ± 0.05	FIM	– –	0.01 0.05	–	–	24–25 °C	[18]
Na$^+$-78	**Na$^+$-78** (w = 3.2 %), KTpClPB (x_i = 21 %),	Li^+, –2.89 ± 0.03; K^+, –2.12 ± 0.04	FIM	– –	0.01 0.05	–	–	24–25 °C	[18]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 64.1 %), PVC (w = 32.0 %)								
Na^+-79	**Na^+-79** (w = 3.2 %), KTpClPB (x_i = 21 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.01 ± 0.01; K^+, –2.11 ± 0.03	FIM	– –	0.01 0.05	–	–	24–25 °C	[18]
Na^+-80	**Na^+-80** (w = 2.8 %), NaTFPB (x_i = 17 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.4; K^+, –1.91; Rb^+, –2.0; Cs^+, –2.4; H^+, –3.6	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.3; Ca^{2+}, –3.8; Mg^{2+}, –4.4	FIM	–	0.5				
Na^+-81	**Na^+-81** (w = 2.8 %), NaTFPB (x_i = 19 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.3; K^+, –1.95; Rb^+, –2.3; Cs^+, –2.7; H^+, –4.1	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.4; Ca^{2+}, –3.9; Mg^{2+}, –4.7	FIM	–	0.5				
Na^+-82	**Na^+-82** (w = 2.8 %), NaTFPB (x_i = 17 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.3; K^+, –1.97; Rb^+, –2.3; Cs^+, –2.6; H^+, –3.8	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.3; Ca^{2+}, –3.8; Mg^{2+}, –4.2	FIM	–	0.5				
Na^+-83	**Na^+-83** (w = 2.8 %), NaTFPB (x_i = 15 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.5; K^+, –2.05; Rb^+, –2.4; Cs^+, –2.8; H^+, –4.4	FIM	–	0.05	59	10^{-5}–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.6; Ca^{2+}, –3.9; Mg^{2+}, –4.0	FIM	–	0.5				
Na^+-84	**Na^+-84** (w = 2.8 %), NaTFPB (x_i = 17 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.3; K^+, –1.93; Rb^+, –2.3; Cs^+, –2.6; H^+, –3.7	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.3; Ca^{2+}, –3.8; Mg^{2+}, –4.5	FIM	–	0.5				
Na^+-85	**Na^+-85** (w = 2.8 %), NaTFPB (x_i = 18 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.2; K^+, –1.92; Rb^+, –2.3; Cs^+, –2.7; H^+, –3.5	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.3; Ca^{2+}, –3.8; Mg^{2+}, –4.3	FIM	–	0.5				

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-86	**Na^+-86** (w = 2.8 %), NaTFPB (x_i = 15 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.4; K^+, –1.97; Rb^+, –2.3; Cs^+, –2.6; H^+, –3.6	FIM	–	0.05	58	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.3; Ca^{2+}, –3.9; Mg^{2+}, –4.3	FIM	–	0.5				
Na^+-87	**Na^+-87** (w = 2.8 %), NaTFPB (x_i = 15 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.4; K^+, –1.93; Rb^+, –2.3; Cs^+, –2.6; H^+, –3.7	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.4; Ca^{2+}, –3.9; Mg^{2+}, –4.4	FIM	–	0.5				
Na^+-88	**Na^+-88** (w = 2.8 %), NaTFPB (x_i = 14 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.1; K^+, –1.5; Rb^+, –1.7; Cs^+, –1.8; H^+, –3.8	FIM	–	0.05	59	10^{-5}–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –2.6; Ca^{2+}, –3.3; Mg^{2+}, –4	FIM	–	0.5				
Na^+-89	**Na^+-89** (w = 2.8 %), NaTFPB (x_i = 14 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –3.6; K^+, –1.7; Rb^+, –2.0; Cs^+, –2.3; H^+, –3.9	FIM	–	0.05	59	10^{-4}–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –3.3; Ca^{2+}, –3.7; Mg^{2+}, –4	FIM	–	0.5				
Na^+-90	**Na^+-90** (w = 2.8 %), NaTFPB (x_i = 15 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –2.9; K^+, –1.2; Rb^+, –1.1; Cs^+, –1.4; H^+, –2.6	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –1.4; Ca^{2+}, –2.6; Mg^{2+}, –4	FIM	–	0.5				
Na^+-91	**Na^+-91** (w = 2.8 %), NaTFPB (x_i = 15 %), oNPOE (w = 69.1 %), PVC (w = 27.6 %)	Li^+, –2.1; K^+, –1.5; Rb^+, –1.5; Cs^+, –1.3; H^+, –3.9	FIM	–	0.05	59	$10^{-4.5}$–10^{-1}	25.0 ± 0.1 °C	[23]
		NH_4^+, –2.2; Ca^{2+}, –2.2; Mg^{2+}, –4	FIM	–	0.5				
Na^+-92	**Na^+-92** (w = 2.3 %), KTpClPB (x_i = 50–60 %), BEHS or BBPA ($w \approx$ 65 %), PVC ($w \approx$ 32 %)	Li^+, –1.30 ± 0.02; K^+, –1.48 ± 0.21; Rb^+, –1.75 ± 0.05; Cs^+, –1.98 ± 0.04; Mg^{2+}, –3.34 ± 0.16; Ca^{2+}, –1.38 ± 0.16*	FIM	–	0.01	N	$10^{-4.5}$–10^{-1}	ISFET; interlayer: poly (2-hydroxyethyl methacrylate) * Measurements were made with a membrane matrix composed of PVC and BBPA.	[8]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Na^+-92 (w = 2.5 %), NaTFB (x_i = 39 %), fluorosilicone rubber (w = 96.9 %)	Li^+, –1.3; K^+, –1.8; Ca^{2+}, –3.0; Mg^{2+}, –3.4	FIM	–	0.01	47.85 ± 3.74	–	$c_{dl} = 2.5 \times 10^{-5}$ M	[33]
				–	0.1				
	Na^+-92 (membrane composition not reported)	Li^+, –1.1; K^+, –1.6 NH_4^+, –1.7; Ca^{2+}, –2.3 $N(CH_3)_4^+$, –2.1; $N(C_4H_{11})_4^+$, +2.9; $N(CH_3)_3(C_{18}H_{37})^+$, +4.7	SSM	–	0.1	55–57	5×10^{-5}–1.0	25 °C; t_{90} = 10 s; τ > 120 d	[21]
Na^+-93	**Na^+-93** (w = 2.5 %), KTpClPB (x_i = 21 %), fluorosilicone rubber (w = 96.9 %)	Li^+, –1.3; K^+, –1.8; Ca^{2+}, –3.0; Mg^{2+}, –3.4	FIM	–	0.01	55.1 ± 0.2	–	$c_{dl} = 1.0 \times 10^{-4}$ M	[33]
				–	0.1				
Na^+-94	**Na^+-94** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.5; K^+, +0.44 Rb^+, +0.8; Cs^+, –0.1; NH_4^+, –0.1; Ca^{2+}, –3.0; Mg^{2+}, –2.6; Sr^{2+}, –3.1; Ba^{2+}, –2.6	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
Na^+-95	**Na^+-95** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –0.4; K^+, +0.4; Rb^+, +0.4; Cs^+, –0.6; NH_4^+, +0.4; Ca^{2+}, –1.2; Mg^{2+}, –1.9; Sr^{2+}, –1.2; Ba^{2+}, –1.4	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
Na^+-96	**Na^+-96** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –1.9; K^+, –1.56; Rb^+, –2.0; Cs^+, –2.5; Ca^{2+}, –3.6; Mg^{2+}, –4.9; Sr^{2+}, –4.2; Ba^{2+}, –3.9	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
Na^+-97	**Na^+-97** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.5; K^+, –2.2; Rb^+, –2.9; Cs^+, –3.2; NH_4^+, –2.8; Ca^{2+}, –3.6; Mg^{2+}, –4.2; Sr^{2+}, –4.1; Ba^{2+}, –4.2	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
Na^+-98	**Na^+-98** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.6; K^+, –2.1; Rb^+, –2.8; Cs^+, –3.0; NH_4^+, –2.7; Ca^{2+}, –3.7; Mg^{2+}, –4.0; Sr^{2+}, –4.1; Ba^{2+}, –4.0	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Na^+-99	**Na^+-99** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.3; K^+, –2.2; Rb^+, –2.9; Cs^+, –3.3; NH_4^+, –2.8; Ca^{2+}, –4.2; Mg^{2+}, –4.7; Sr^{2+}, –4.2; Ba^{2+}, –4.3	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
Na^+-100	**Na^+-100** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –3.0; K^+, –2.4; Rb^+, –3.2; Cs^+, –3.5; NH_4^+, –3.0; Ca^{2+}, –3.7; Mg^{2+}, –3.7; Sr^{2+}, –4.2; Ba^{2+}, –4.2	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
	Na^+-100 (w = 3.0 %), KTpClPB (x_i = 10 %), DBE (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.7; K^+, –2.5; Rb^+, –3.1; Cs^+, –3.5; NH_4^+, –2.7; Ca^{2+}, –4.1; Mg^{2+}, –5.2; Sr^{2+}, –4.2; Ba^{2+}, –4.2	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
	Na^+-100 (w = 3.0 %), KTpClPB (x_i = 10 %), oNPOE (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.6; K^+, –2.2; Rb^+, –2.9; Cs^+, –3.6; NH_4^+, –2.7; Ca^{2+}, –3.9; Mg^{2+}, –5.4; Sr^{2+}, –4.1; Ba^{2+}, –4.4	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
	Na^+-100 (w = 3.0 %), KTpClPB (x_i = 10 %), TEHP (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –3.1; K^+, –3.1; Rb^+, –3.6; Cs^+, –4.0; NH_4^+, –3.3; Ca^{2+}, –4.0; Mg^{2+}, –4.2; Sr^{2+}, –3.9; Ba^{2+}, –4.3	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
	Na^+-100 (w = 3.0 %), KTpClPB (x_i = 10 %), DBE (w = 66.5 %), TEHP (w = 1.4 %), PVC (w = 29.1 %)	Li^+, –2.8; K^+, –2.9; Rb^+, –3.5; Cs^+, –3.8; NH_4^+, –3.2; Ca^{2+}, –4.0; Mg^{2+}, –4.0; Sr^{2+}, –3.7; Ba^{2+}, –4.0	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
	Na^+-100 (w = 3.0 %), KTpClPB (x_i = 10 %), oNPOE (w = 66.5 %), TEHP (w = 1.4 %), PVC (w = 29.1 %)	Li^+, –2.8; K^+, –2.5; Rb^+, –3.2; Cs^+, –3.6; NH_4^+, –2.9; Ca^{2+}, –4.2; Mg^{2+}, –4.1; Sr^{2+}, –4.0; Ba^{2+}, –4.3	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
	Na^+-100 (w = 3.0 %), KTpClPB (x_i = 10 %),	Li^+, –2.9; K^+, –2.7; Rb^+, –3.5; Cs^+, –4.1;	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	BBPA (w = 66.5 %), TEHP (w = 1.4 %), PVC (w = 29.1 %)	NH_4^+, –3.3; Ca^{2+}, –4.1; Mg^{2+}, –5.0; Sr^{2+}, –4.3; Ba^{2+}, –4.4							
Na^+-101	**Na^+-101** (w = 3.0 %), KTpClPB (x_i = 10 %), BBPA (w = 67.9 %), PVC (w = 29.1 %)	Li^+, –2.5; K^+, –2.3; Rb^+, –3.1; Cs^+, –3.6; NH_4^+, –2.8; Ca^{2+}, –3.5; Mg^{2+}, –4.0; Sr^{2+}, –3.9; Ba^{2+}, –3.7	FIM	–	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[34]
Na^+-102	**Na^+-102** (w = 3.2 %), KTpClPB (x_i = 15 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –2.31 ± 0.05; K^+, +0.68 ± 0.02	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-103	**Na^+-103** (w = 3.2 %), KTpClPB (x_i = 16 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.46 ± 0.01; K^+, –0.65 ± 0.03	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-104	**Na^+-104** (w = 3.2 %), KTpClPB (x_i = 17 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.52 ± 0.05; K^+, –1.74 ± 0.03	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-105	**Na^+-105** (w = 3.2 %), KTpClPB (x_i = 19 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.73 ± 0.03; K^+, –1.49 ± 0.02	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-106	**Na^+-106** (w = 3.2 %), KTpClPB (x_i = 17 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –2.84 ± 0.01; K^+, –1.98 ± 0.02	FIM	– –	0.1 or 0.5 0.05 or 0.01	59	–	24–25 °C	[17]
Na^+-107	**Na^+-107** (w = 3.2 %), KTpClPB (x_i = 19 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.73; K^+, –1.49	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-108	**Na^+-108** (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.78; K^+, –1.54	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-109	**Na^+-109** (w = 3.2 %), KTpClPB (x_i = 22 %),	Li^+, –3.75; K^+, –1.55	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 64.1 %), PVC (w = 32.0 %)								
Na^+-110	**Na^+-110** (w = 3.2 %), KTpClPB (x_i = 23 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.75;	FIM	–	0.5	59	–	24–25 °C	[19]
		K^+, –1.59;		–	0.05				
		Rb^+, –2.18; Cs^+, –2.65;		–	0.1				
		NH_4^+, –3.27; Ca^{2+}, –3.75; Sr^{2+}, –2.65; Ba^{2+}, –3.18;		–	0.5				
		Mg^{2+}, –3.83		–	1.0				
Na^+-111	**Na^+-111** (w = 3.2 %), KTpClPB (x_i = 19 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.67;	FIM	–	0.5	59	–	24–25 °C	[19]
		K^+, –1.73;		–	0.05				
		Rb^+, –2.35; Cs^+, –2.75;		–	0.1				
		NH_4^+, –3.30; Ca^{2+}, –3.69; Sr^{2+}, –2.72; Ba^{2+}, –3.12;		–	0.5				
		Mg^{2+}, –3.81		–	1.0				
Na^+-112	**Na^+-112** (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.68;	FIM	–	0.5	59	–	24–25 °C	[19]
		K^+, –1.70;		–	0.05				
		Rb^+, –2.35; Cs^+, –2.69;		–	0.1				
		NH_4^+, –3.32; Ca^{2+}, –3.80; Sr^{2+}, –2.66; Ba^{2+}, –3.12;		–	0.5				
		Mg^{2+}, –3.86		–	1.0				
Na^+-113	**Na^+-113** (w = 3.2 %), KTpClPB (x_i = 30 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	K^+, –1.26	FIM	–	0.05	59	–	24–25 °C	[19]
Na^+-114	**Na^+-114** (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.83;	FIM	–	0.5	59	–	24–25 °C	[19]
		K^+, –1.39;		–	0.05				
		Rb^+, –1.98; Cs^+, –2.35;		–	0.1				
		NH_4^+, –2.57; Ca^{2+}, –3.78; Sr^{2+}, –2.65; Ba^{2+}, –3.12;		–	0.5				
		Mg^{2+}, –3.79		–	1.0				
Na^+-115	**Na^+-115** (w = 3.2 %), KTpClPB (x_i = 21 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.85;	FIM	–	0.5	59	–	24–25 °C	[19]
		K^+, –1.25;		–	0.05				
		Rb^+, –1.79; Cs^+, –2.37;		–	0.1				
		NH_4^+, –2.99; Ca^{2+}, –3.79; Sr^{2+}, –2.72; Ba^{2+}, –3.11;		–	0.5				
		Mg^{2+}, –3.74		–	1.0				
Na^+-116	**Na^+-116** (w = 3.2 %), KTpClPB (x_i = 22 %),	Li^+, –3.90;	FIM	–	0.5	59	–	24–25 °C	[19]
		K^+, –0.94;		–	0.05				

Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Rb^+, –1.53; Cs^+, –1.92; NH_4^+, –2.61; Ca^{2+}, –3.80; Sr^{2+}, –2.71; Ba^{2+}, –2.84; Mg^{2+}, –3.75		– – –	0.1 0.5 1.0				
Na^+-117	**Na^+-117** (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.83; K^+, –0.48	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-118	**Na^+-118** (w = 3.2 %), KTpClPB (x_i = 22 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.84; K^+, –0.46	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-119	**Na^+-119** (w = 3.2 %), KTpClPB (x_i = 18 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.78; K^+, –0.42	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-120	**Na^+-120** (w = 3.2 %), KTpClPB (x_i = 19 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.80; K^+, –0.51	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-121	**Na^+-121** (w = 3.2 %), KTpClPB (x_i = 21 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.73; K^+, –1.54	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-122	**Na^+-122** (w = 3.2 %), KTpClPB (x_i = 24 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.73; K^+, –1.48	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-123	**Na^+-123** (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.76; K^+, –1.51	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-124	**Na^+-124** (w = 3.2 %), KTpClPB (x_i = 20 %), oNPOE (w = 64.1 %), PVC (w = 32.0 %)	Li^+, –3.63; K^+, –1.53	FIM	– –	0.5 0.05	59	–	24–25 °C	[19]
Na^+-125	**Na^+-125** (w = 2.8 %), oNPOE (w = 64.4 %), PVC (w = 27.8 %)	Li^+, –2.89; K^+, –1.72; Rb^+, –1.92; Cs^+, –2.11	FIM	–	0.05	–	–	25 °C; pH = 11	[35]

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Table 3: Na^+–Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Na^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Li^+, –2.59; K^+, –2.89; Rb^+, –2.45; Cs^+, –2.82	FIM	–	0.05	–	–	25 °C; pH = 12	
		Li^+, –2.85; K^+, –2.05; Rb^+, –2.82; Cs^+, –3.09	FIM	–	0.05	–	–	25 °C; pH = 13	
	Na^+-125 (*w* = 2.8 %), oNPPE (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –2.7; K^+, –1.8; Rb^+, –2.6; Cs^+, –2.5	FIM	–	0.05	–	–	25 °C; pH = 13; r.o.o.g.	[35]
	Na^+-125 (*w* = 2.8 %), FNDPE (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –2.7; K^+, –1.9; Rb^+, –2.3; Cs^+, –3.0	FIM	–	0.05	–	–	25 °C; pH = 13; r.o.o.g.	[35]
	Na^+-125 (*w* = 2.8 %), DPP (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –2.8; K^+, –1.9; Rb^+, –2.5; Cs^+, –2.2	FIM	–	0.05	–	–	25 °C; pH = 13; r.o.o.g.	[35]
	Na^+-125 (*w* = 2.8 %), DOS (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –2.8; K^+, –1.7; Rb^+, –2.5; Cs^+, –3.1	FIM	–	0.05	–	–	25 °C; pH = 13; r.o.o.g.	[35]
	Na^+-125 (*w* = 2.8 %), TEHP (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –1.9; K^+, –1.7; Rb^+, –2.4; Cs^+, –2.5	FIM	–	0.05	–	–	25 °C; pH = 13	[35]
Na^+-126	**Na^+-126** (*w* = 2.8 %), oNPOE (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –1.9; K^+, –1.1; Rb^+, –1.3; Cs^+, –1.3	FIM	–	0.05	–	–	25 °C; pH = 13; r.o.o.g.	[35]
Na^+-127	**Na^+-127** (*w* = 2.8 %), oNPOE (*w* = 64.4 %), PVC (*w* = 27.8 %)	Li^+, –1.0; K^+, –0.1; Rb^+, –0.5; Cs^+, –0.9	FIM	–	0.05	–	–	25 °C; pH = 13; r.o.o.g.	[35]

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Table 3: Na^+–Selective Electrodes (*Continued*)

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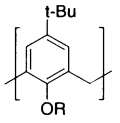
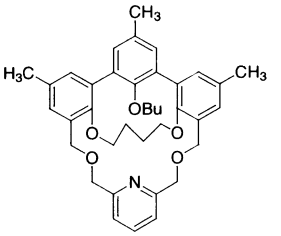
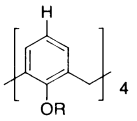


Na^+-1 (M_r = 1442.17): R=$CH_2CO_2C_{10}H_{21}$
Na^+-2 (M_r = 1326.01): R=$CH_2CON(C_4H_9)_2$
Na^+-3 (M_r = 993.30): R=CH_2CO_2Et
Na^+-4 (M_r = 873.19): R=CH_2COCH_3
Na^+-5 (M_r = 1041.52): R=$CH_2COC(CH_3)_3$
Na^+-6 (M_r = 1353.98):
R=CH_2CO(adamantyl)
Na^+-7 (M_r = 937.19): R=$CH_2CO_2CH_3$
Na^+-16 (M_r = 1091.41)
R=(3×)-CH_2CO_2Et
(1×)-$CH_2CO_2CH_2CH_2CH_2OCOC(CH_3)=CH_2$
Na^+-18 (M_r = 1385.71):
R=-$CH_2CO_2CH_2CH_2CH_2OCOC(CH_3)=CH_2$

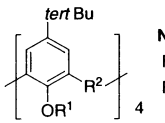
Na^+-9 (M_r = 1113.41):
R=$CH_2CO_2CH_2CH_2OCH_3$
Na^+-11 (M_r = 1185.48): R=$CH_2CO_2C_6H_5$
Na^+-12 (M_r = 1121.48): R=$CH_2COC_6H_5$
Na^+-13 (M_r = 1101.58): R=CH_2CONEt_2
Na^+-14 (M_r = 1165.82): R=CH_2CSNEt_2
Na^+-15 (M_r = 1105.52): R=$CH_2CO_2C(CH_3)_3$
Na^+-17 : A polymer of (Na^+-16)
Na^+-20 (M_r = 979.27):
R=(3×)-CH_2CO_2Et
(1×)-$CH_2CO_2CH_3$



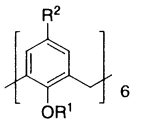
Na^+-8 (M_r = 593.77)



Na^+-10 (M_r = 985.58): R=n-$C_{10}H_{21}$



Na^+-19 (M_r = 1025.30):
R^1=-CH_2CO_2Et
R^2=(2×)-CH_2-
(2×)-CH_2O-



Na^+-21 (M_r = 1309.53):
R^1=-CH_2CO_2Et
R^2=-CH=CH_2

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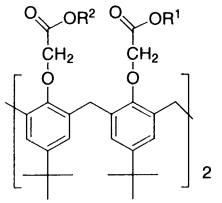
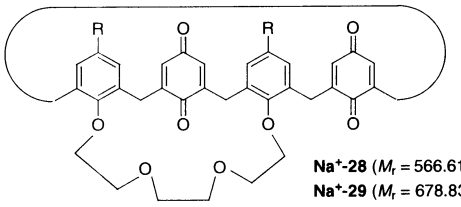
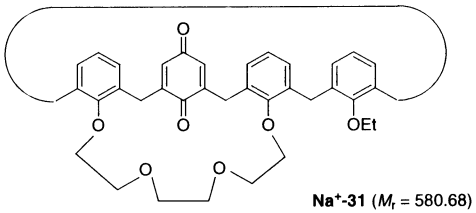
Table 3: Na^+–Selective Electrodes (*Continued*)



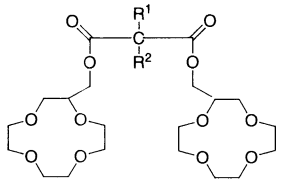
Na^+-22 (M_r = 1049.41): R^1=R^2= C_3H_7
Na^+-23 (M_r = 1105.52): R^1=R^2= n-C_4H_9
Na^+-24 (M_r = 1217.73): R^1= C_2H_5 , R^2= $C_{10}H_{21}$
Na^+-25 (M_r = 1075.45): R^1= C_2H_5; bridged type: [R^2-R^2] = -$(CH_2)_{10}$-
Na^+-26 (M_r = 1103.50): R^1= C_2H_5 ; bridged type: [R^2-R^2] = -$(CH_2)_{12}$-
Na^+-27 (M_r = 1095.39): R_1= C_2H_5; bridged type: [R^2-R^2] = -$(CH_2)_2$-$(OCH_2CH_2)_3$-



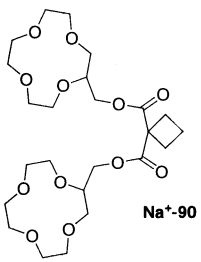
Na^+-28 (M_r = 566.61): R=H
Na^+-29 (M_r = 678.83): R=*tert* Butyl
Na^+-30 (M_r = 791.05): R=*tert* Octyl



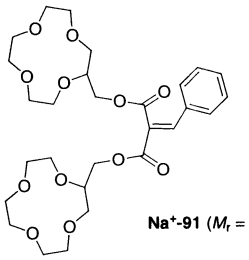
Na^+-31 (M_r = 580.68)



Na^+-43 (M_r = 534.87): R^1=CH_3 , R^2=$C_{12}H_{25}$
Na^+-80 (M_r = 647.09): R^1=$C_{18}H_{37}$, R^2=C_3H_7
Na^+-81 (M_r = 689.17): R^1= R^2=$C_{12}H_{25}$
Na^+-82 (M_r = 610.97): R^1=$C_{12}H_{25}$, R^2=$CH_2C_6H_5$
Na^+-83 (M_r = 532.77): R^1=R^2=$CH_2C_6H_5$



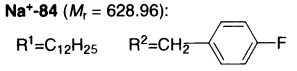
Na^+-90 (M_r = 520.57)



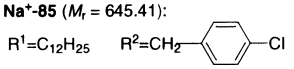
Na^+-91 (M_r = 568.62)

Table 3: Na^+–Selective Electrodes (*Continued*)

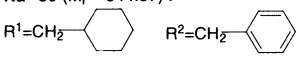
Na⁺-84 (M_r = 628.96):



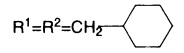
Na⁺-85 (M_r = 645.41):



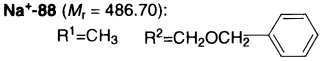
Na⁺-86 (M_r = 544.87) :



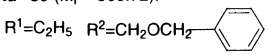
Na⁺-87 (M_r = 542.85) :

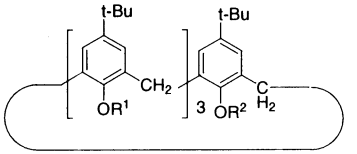


Na⁺-88 (M_r = 486.70):

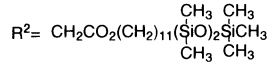


Na⁺-89 (M_r = 500.72):

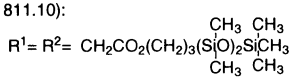




Na⁺-44 (M_r = 1309.96): $R^1=CH_2CO_2C_2H_5$

$R^2=$ 

Na⁺-45 (M_r = 1811.10):

$R^1=R^2=$ 

Na⁺-32 (M_r = 330.38): R^1=H, R^2=H

Na⁺-33 (M_r = 360.41): R^1=H, $R^2=OCH_3$

Na⁺-34 (M_r = 404.46): R^1=H, $R^2=OC_2H_4OCH_3$

Na⁺-35 (M_r = 432.47): R^1=H, $R^2=OCH_2CO_2C_2H_5$

Na⁺-36 (M_r = 459.54): R^1=H, $R^2=OCH_2CON(C_2H_5)_2$

Na⁺-37 (M_r = 543.70): R^1=H, $R^2=OCH_2CON(C_5H_{11})_2$

Na⁺-38 (M_r = 374.44): $R^1=CH_3$, $R^2=OCH_3$

Na⁺-39 (M_r = 418.49): $R^1=CH_3$, $R^2=OC_2H_4OCH_3$

Na⁺-40 (M_r = 446.50): $R^1=CH_3$ $R^2=OCH_2CO_2C_2H_5$

Na⁺-41 (M_r = 473.57): $R^1=CH_3$, $R^2=OCH_2CON(C_2H_5)_2$

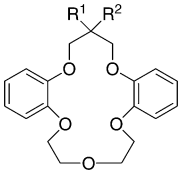
Na⁺-42 (M_r = 557.73): $R^1=CH_3$ $R^2=OCH_2CON(C_5H_{11})_2$

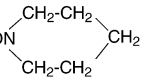
Na⁺-74 (M_r = 473.57): R^1=H, $R^2=OCH_2CONH(C_5H_{11})$

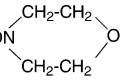
Na⁺-75 (M_r = 515.65): $R^1=C_3H_7$, $R^2=OCH_2CONH(C_5H_{11})$

Na⁺-76 (M_r = 561.67): $R^1=C_3H_7$, $R^2=OCH_2CON(CH_2CH_2OCH_3)_2$

Na⁺-77 (M_r = 613.75): $R^1=C_3H_7$, $R^2=OCH_2CON(CH_2CH_2OCH_2CH_2CH_3)_2$



Na⁺-78 (M_r = 513.63): $R^1=C_3H_7$, $R^2=OCH_2CON$ 

Na⁺-79 (M_r = 515.61): $R^1=C_3H_7$, $R^2=OCH_2CON$ 

Na⁺-102 (M_r = 372.46): R^1= H , $R^2=C_3H_7$

Na⁺-103 (M_r = 404.42): R^1= H , $R^2=OCH_2CO_2H$

Na⁺-104 (M_r = 446.50): $R^1=C_3H_7$, $R^2=OCH_2CO_2H$

Na⁺-105 (M_r = 474.56): $R^1=C_3H_7$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-106 (M_r = 501.63): $R^1=C_3H_7$, $R^2=OCH_2CON(C_2H_5)_2$

Na⁺-107 (M_r = 460.52): $R^1=C_2H_5$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-108 (M_r = 488.58): $R^1=C_4H_9$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-109 (M_r = 544.69): $R^1=C_8H_{17}$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-110 (M_r = 572.74): $R^1=C_{10}H_{21}$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-111 (M_r = 474.56): $R^1=(CH_3)_2CH$-,$R^2=OCH_2CO_2C_2H_5$

Na⁺-112 (M_r = 502.61) : $R^1=(CH_3)_3CCH_2$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-113 (M_r = 750.51): $R^1=C_6F_{13}$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-114 (M_r = 508.57): $R^1=C_6H_5$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-115 (M_r = 486.57): $R^1=(CH_3)_2C=CH$-, $R^2=OCH_2CO_2C_2H_5$

Na⁺-116 (M_r = 526.65): $R^1=C_6H_{13}CC$, $R^2=OCH_2CO_2C_2H_5$

Na⁺-117 (M_r = 488.58): R^1= H, $R^2=OCH_2CO_2C_6H_{13}$

Na⁺-118 (M_r = 544.69): R^1= H, $R^2=OCH_2CO_2C_{10}H_{21}$

Na⁺-119 (M_r = 446.50): R^1= H, $R^2=OCH_2CO_2CH(CH_3)_2$

Na⁺-120 (M_r = 460.52): R^1= H, $R^2=OCH_2CO_2C(CH_3)_3$

Na⁺-121 (M_r = 488.58): $R^1=C_3H_7$, $R^2=OCH_2CO_2C_6H_{13}$

Na⁺-122 (M_r = 586.77): $R^1=C_3H_7$, $R^2=OCH_2CO_2C_{10}H_{21}$

Na⁺-123 (M_r = 488.58): $R^1=C_3H_7$, $R^2=OCH_2CO_2CH(CH_3)_2$

Na⁺-124 (M_r = 502.61): $R^1=C_3H_7$ $R^2=OCH_2CO_2C(CH_3)_3$

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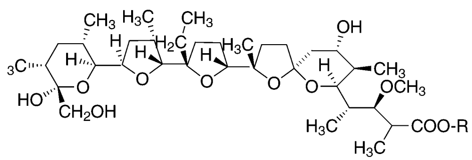
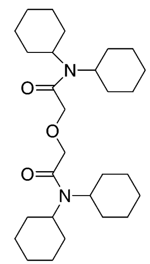
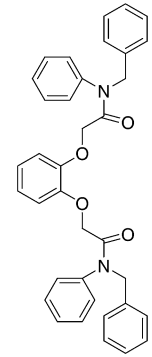
Table 3: Na^+–Selective Electrodes (*Continued*)



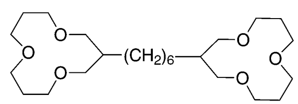
Na^+-46 (M_r = 670.88): R=H
Na^+-59 (M_r = 684.91): R=CH_3
Na^+-60 (M_r = 698.94) : R=C_2H_5
Na^+-61 (M_r = 726.99): R=C_4H_9
Na^+-62 (M_r = 761.01): R=$CH_2C_6H_5$
Na^+-63 (M_r = 839.21) : R=$C_{12}H_{25}$



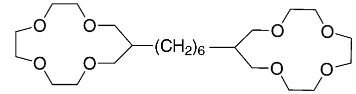
Na^+-47 (M_r = 460.07)



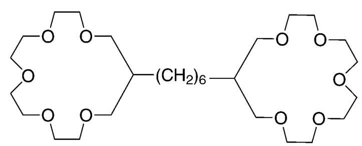
Na^+-48 (ETH 157, M_r = 556.67)



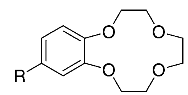
Na^+-49 (M_r = 430.63)



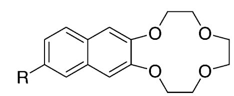
Na^+-50 (M_r = 462.62)



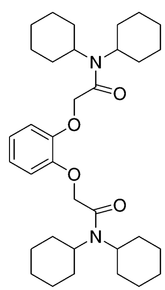
Na^+-51 (M_r = 550.73)



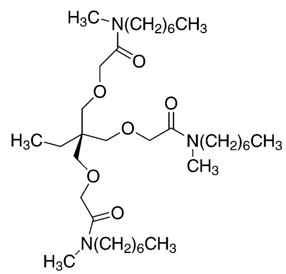
Na^+-52 (M_r = 224.25): R=H
Na^+-53 (M_r = 280.36): R=$C(CH_3)_3$
Na^+-54 (M_r = 336.47): R=$C(CH_3)_2C_5H_{11}$
Na^+-55 (M_r = 434.66) : R=$C(CH_3)_2C_{12}H_{25}$



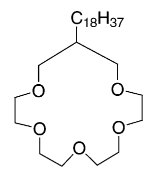
Na^+-56 (M_r = 274.31): R=H
Na^+-57 (M_r = 330.42) : R=$C(CH_3)_3$
Na^+-58 (M_r = 386.53): R=$C(CH_3)_2C_5H_{11}$



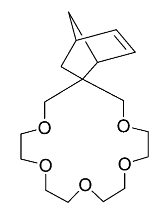
Na^+-92 (ETH 2120, M_r = 552.80)



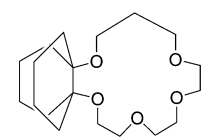
Na^+-93 (ETH 227, M_r = 641.97)



Na^+-94 (M_r = 486.78)

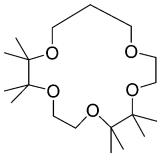


Na^+-95 (M_r = 312.41)

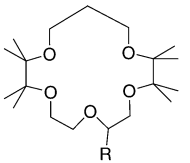


Na^+-96 (M_r = 342.47)

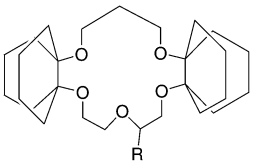
Table 3: Na^+–Selective Electrodes (*Continued*)



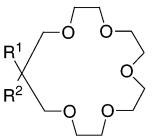
Na^+-97 (M_r = 346.51)



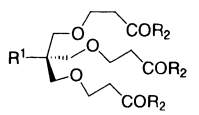
Na^+-98 (M_r = 346.51): R = H
Na^+-99 (M_r = 542.89): R = $C_{14}H_{29}$



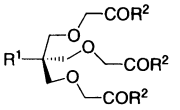
Na^+-100 (M_r = 450.66): R = H
Na^+-101 (M_r = 634.02): R = $C_{14}H_{29}$



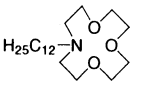
Na^+-64 (M_r = 262.34): R^1=R^2=CH_3
Na^+-65 (M_r = 452.72): R^1=CH_3, R^2=$CH_2O(CH_2)_{11}CH_3$
Na^+-66 (M_r = 368.47): R^1=CH_3, R^2=$CH_2OCH_2C_6H_5$
Na^+-67 (M_r = 382.50): R^1=C_2H_5, R^2=$CH_2OCH_2C_6H_5$
Na^+-68 (M_r = 410.55): R^1=$(CH_2)_2CH_3$, R^2=$CH_2OCH_2C_6H_5$
Na^+-69 (M_r = 466.66): R^1=$(CH_2)_7CH_3$, R^2=$CH_2OCH_2C_6H_5$



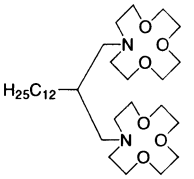
Na^+-72 (M_r = 672.05): R^1=C_2H_5, R^2=NBu_2
Na^+-73 (M_r = 506.68): R^1=C_2H_5, R^2=OBu



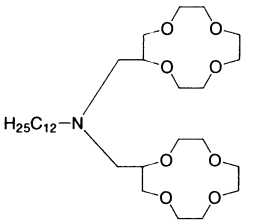
Na^+-70 (M_r = 641.98): R^1=C_2H_5, R^2=NBu_2
Na^+-71 (M_r = 476.61): R^1=C_2H_5, R^2=OBu



Na^+-127 (M_r = 343.55)



Na^+-125 (M_r = 558.84)



Na^+-126 (M_r = 561.80)

Table 4: K^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K^+-1	**K^+-1** (w = 2.0 %), KTpClPB (x_i = 55 %), BBPA (w = 65.5 %), PVC (w = 33.0 %)	Li^+, –4.0; Na^+, –4.0; NH_4^+, –1.9; Ca^{2+}, –5.9; Mg^{2+}, –6.2	SSM	–	–	57.4	–	Pt CWE; Pt was coated with poly(vinyl ferrocene); $c_{dl} = 5 \times 10^{-7}$ M	[1]
	K^+-1	Li^+, –5.2; Na^+, –4.3; NH_4^+, –2.0; Ba^{2+}, –4.7; Ca^{2+}, –4.7	FIM	–	0.1; NH_4^+, 0.01	59.0	–	Orion 93–19 K^+–ISE; 2 < pH < 12	[2]
	K^+-1 (w = 3 %), silicone rubber (w = 97 %)	Na^+, <–3.7	FIM	–	0.10	56	–	ISFET	[11,14]
	K^+-1 (w = 3 %), silicone rubber ($w \approx$ 97 %), KTpClPB (x_i = 67 %)	Na^+, <–3.7	FIM	–	0.10	56	–	ISFET	[11,14]
	K^+-1 (w = 3 %), silicone ruber (w = 88.2 %), crosslinking agent (w = 8.8 %)	Na^+ <–3.7	FIM	–	0.10	56	–	ISFET	[11,14]
	K^+-1 (w = 3 %), silicone ruber ($w \approx$ 88 %), crosslinking agent ($w \approx$ 8.8 %), KTpClPB (x_i = 67 %)	Na^+ <–3.7	FIM	–	0.10	55	–	ISFET	[11,14]
	K^+-1 (w = 1.0 %), BBPA (w = 66.0 %), PVC (w = 33.0 %)	Li^+, –4.3; Na^+, –4.0; Rb^+, 0.0; Cs^+, –0.4; NH_4^+, –2.0; H^+ –4.2; Mg^{2+}, –4.8; Ca^{2+}, –4.6; Sr^{2+} –4.4; Ba^{2+}, –4.5	–	–	–	59.8 ± 0.1	10^{-4}–10^{-1}	22 °C	[12]
	K^+-1 (w = 1.3 %), DOS (w = 68.3 %), PVC (w = 30.4 %)	Li^+, –4.7; Na^+, –3.7; Rb^+, +0.4; Cs^+, –0.4; NH_4^+, –1.9; H^+, –4.1; Mg^{2+}, –4.6; Ca^{2+}, –4.8; Sr^{2+}, –4.9; Ba^{2+}, –5.4	–	–	–	59.2 ± 0.1	10^{-4}–10^{-1}	22 °C	[12]
	K^+-1 (w = 2.5 %), silicone rubber (w = 83.0 %), cross–linking agent (w = 14.5 %)	Li^+, –4.3; Na^+, –4.0; Rb^+, +0.6; Cs^+, –0.2; NH_4^+, –1.8; H^+, –4.4; Mg^{2+}, –4.3; Ca^{2+}, –4.2; Sr^{2+}, –4.2; Ba^{2+}, –3.8	–	–	–	59.5 ± 0.2	10^{-4}–10^{-1}	22 °C; minielectrode	[12]

Table 4: K^+-Selective Electrodes *(Continued)*

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K^+-1 (w = 1.0 %), BEHS (w = 66.0 %), PVC (w = 33.0 %)	Li^+, –4.15; Na^+, –4.77; Rb^+, +0.47; Cs^+, –0.39; NH_4^+, –1.84; H^+, –3.31; Mg^{2+}, –5.22; Ca^{2+}, –5.40; Sr^{2+}, –5.30; Ba^{2+}. –5.15	FIM	–	0.15; H^+, 0.1	–	–	25 °C	[13]
	K^+-1 (w = 1.0 %), bis(2-ethylhexyl) adipate (w = 66.0 %), PVC (w = 33.0 %)	Li^+, –4.11; Na^+, –4.60; Rb^+, +0.453; Cs^+. –0.409; NH_4^+, –1.85; H^+, –2.46; Mg^{2+}, –5.10; Ca^{2+}, –5.15 ; Sr^{2+}, –5.15; Ba^{2+}. –4.05	FIM	–	0.15; H^+, 0.1	–	–	25 °C	[13]
	K^+-1 (w = 3.0 %), adipic acid polyester (w = 67.0 %), PVC (w = 30.0 %)	Li^+, –2.91; Na^+, –3.08; Rb^+, +0.927; Cs^+. —2.63; NH_4^+, –1.63; H^+, –1.71; Mg^{2+}, –4.24; Ca^{2+}, –5.17; Sr^{2+}, –4.14; Ba^{2+}. –4.16	FIM	–	0.15; H^+, 0.1	–	–	25 °C	[13]
	K^+-1 (w = 3.0 %), BEHS (w = 67.0 %), PVC (w = 30.0 %)	Li^+, –4.96; Na^+, –4.68; Rb^+, +0.480; Cs^+. –0.332; NH_4^+, –1.80; H^+, –4.67; Mg^{2+}, –6.56; Ca^{2+}, –5.52; Sr^{2+}, –6.12; Ba^{2+}, –6.46	FIM	–	0.15; H^+, 0.1	–	–	25 °C	[13]
	K^+-1 (w = 2.4 %), BEHS (w = 66.4 %), PVC (w = 30.0 %), KTpClPB (x_i = 88 %)	Li^+, –1.38; Na^+, –0.991; Rb^+, +0.217; Cs^+, +0.534; NH_4^+ –0.656; H^+, –2.42; Mg^{2+}, –3.88; Ca^{2+}. –2.41; Sr^{2+}, –3.61; Ba^{2+}, –3.54	FIM	–	0.15; H^+, 0.1	–	–	25 °C	[13]
	K^+-1 (w = 3.0 %), BEHS (w = 66.7 %), PVC (w = 30.0 %), KTpClPB (x_i = 22 %)	Li^+, –4.56; Na^+, –4.32; Rb^+, +0.461; Cs^+, –0.357; NH_4^+, –1.78; H^+, –3.79; Mg^{2+}, –5.36; Ca^{2+}. –5.14; Sr^{2+}, –5.30; Ba^{2+}, –5.35	FIM	–	0.15; H^+, 0.1	–	–	25 °C	[13]
	K^+-1 (1 mg), oNPOE (100 μL), KTpClPB (x_i = 94 %), cellulose triacetate (109 mg)	Na^+, –2.96 ± 0.2	FIM	–	0.10	52 ± 3	10^{-4}–10^{-2}	25 °C; c_{dl} = (4.1 ± 1.0) × 10^{-5} M	[20]

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Table 4: K^+-Selective Electrodes *(Continued)*

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K^+-1 (1 mg), oNPOE (100 μL), KTpClPB (x_i = 94 %), cellulose triacetate (109 mg)	Na^+, −3.16 ± 0.1	FIM	–	0.10	50 ± 1	10^{-4}–10^{-2}	25 °C; $c_{dl} = (5.6 \pm 0.2) \times 10^{-5}$ M; Electrodes were coated with heparin.	[20]
	K^+-1 (1 mg), oNPOE (100 μL), KTpClPB (x_i = 94 %), cellulose triacetate (109 mg), carbonyl hydrolysed in 1M NaOH (324 mg)	Na^+, −3.08 ± 0.1	FIM	–	0.10	51 ± 1	10^{-4}–10^{-2}	25 °C; $c_{dl} = (6.3 \pm 0.4) \times 10^{-5}$ M; Electrodes were coated with heparin.	[20]
	K^+-1 (w = 2.7 %), fluorosilicone rubber (w = 96.6 %), KTpClPB (x_i = 50 %)	Li^+, −4.3; Na^+, −3.8; Ca^{2+}, −4.1	FIM	–	0.1	57.33 ± 1.43	9.9×10^{-5} -10^{-1}	room temp.; $c_{dl} = 10^{-6}$ M; ISFET	[21]
	K^+-1 (w = 2.5 %), silicone rubber (w = 83.0 %), crosslinking agent (w = 14.5 %)	Li^+, −4.3; Na^+, −4.0; Rb^+, +0.6; Cs^+, −0.2; NH_4^+, −1.8; H^+, −4.4; Mg^{2+}, −4.3; Ca^{2+}, −4.2; Sr^{2+}, −4.2; Ba^{2+}, −3.8	SSM	0.1	0.1	59.5 ± 0.2	9×10^{-5}–10^{-1}	20 °C	[23]
	K^+-1 (w = 1.5 %), KTpClPB or NaTFPB (x_i = 50 %), decyl methacrylate (w = 22 %), TDDMACl (w = 4.9 %), 1,6-hexanediyl dimethacrylate (w = 29 %), benzophenone (w = 1 %), benzoyl peroxide (w = 2 %), DOS (w = 39 %)	Na^+, −3.88 ± 0.03; Rb^+, +0.48 ± 0.05; NH_4^+, −1.85 ± 0.04	SSM	0.01	0.01	57.1 ± 0.9	–	22 °C; t_{resp} < 10 s; $c_{dl} = 10^{-5.95 \pm 0.02}$ M	[24]
	K^+-1 (w = 0.9 %), oNPOE (w = 67.3 %), PVC (w = 31.8 %)	Li^+, −2.88; Na^+, −3.02; Mg^{2+}, −3.96; Ca^{2+}, −3.80	SSM	0.01	0.01	59.6	–	25 ± 0.5 °C; $c_{dl} = 8.0 \times 10^{-6}$ M	[25]
	K^+-1 (w = 1.5 %), DOS (w = 8.0 %), aliphatic polyurethane (w = 90.1 %), KTpClPB (x_i = 60 %)	Na^+, −3.8; Ca^{2+}, −4.6	FIM	–	Na^+, 0.150; Ca^{2+}, 0.100	56.8 ± 0.2	–	22.0 ± 1.0 °C; $c_{dl} = 10^{-4.7}$ M	[26]
	K^+-1 (w = 1.5 %), DOS (w = 8.0 %), aliphatic polyurethane (w = 90.1 %), KTpClPB (x_i = 60 %)	Na^+, −3.8; Ca^{2+}, −4.5	FIM	–	Na^+, 0.150; Ca^{2+}, 0.100	54.6 ± 0.6	–	22.0 ± 1.0 °C; $c_{dl} = 10^{-4.7}$ M; t_{resp} < 10 s; Electrodes were coated with photo cured poly (ethylene oxide)	[26]

Table 4: K^+-Selective Electrodes *(Continued)*

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K^+-1 (w = 1.5 %), DOS (w = 8.0 %), KTpClPB (x_i = 60 %), aliphatic polyurethane (w = 80.1 %), block copolymer of poly(ethylene oxide) and poly(propylene oxide) (w = 10.0 %)	Na^+, –3.5; Ca^{2+}, –4.2	FIM	–	Na^+, 0.150 Ca^{2+}, 0.100	53.2 ± 0.6	–	22.0 ± 1.0 °C; $c_{dl} = 10^{-4.4}$ M	[26]
	K^+-1 (w = 1 %), DOA (w = 66 %), PVC (w = 33 %)	Na^+, –4.28	SSM	–	–	57.2	10^{-5}–10^{-1}	c_{dl} = 5.8 × 10^{-7} M	[27]
	K^+-1 (w = 1 %), DOA (w = 59 %), PVC (w = 20 %), PVC/poly(vinyl acetate)/ poly(vinyl alcohol) copolymer (16:1:3 by weight; w = 20 %)	Na^+, –4.22	SSM	–	–	57.3	–	c_{dl} = 5.2 × 10^{-7} M	[27]
	K^+-1 (w = 1 %), DOA (w = 66 %), aliphatic polyurethane (w = 26.4 %), PVC/poly(vinyl acetate)/ poly(vinyl alcohol) copolymer (16:1:3 by weight;w = 6.6 %)	Na^+, –4.21	SSM	–	–	57.2	–	c_{dl} = 5.9 × 10^{-7} M	[27]
	K^+-1 (w = 1 %), polydimethyl siloxane silanol terminated (w = 78 %), (cyanopropyl) methyl/dimethyl siloxane copolymer (10–12:88–90; w = 21 %), KTpClPB (x_i = 76 %)	Na^+, –4.16	SSM	–	–	56.5	–	c_{dl} = 1.0 × 10^{-6} M	[27]
	K^+-1, DOS, PVC-COOH, KTpClPB (weight ratio not reported)	Li^+, –4.4; Na^+, –3.6; NH_4^+, –1.8; Ca^{2+}, –4.6	FIM	–	–	58.3 ± 0.2 57.7 ± 0.2[†]	10^{-5}–10^{-1}	22.5 ± 0.5 °C; $c_{dl} = 4.0 \times 10^{-6}$ M; 6 < pH < 9; τ > 30 d	[31]
	K^+-1 (membrane composition not reported)	Na^+, <–6; NH_4^+, –0.845; Ca^{2+}, –2.27	–	–	–	–	–		[32]
	K^+-1 (w = 1 %), fluorosilicone rubber (w = 98.7 %), KTpClPB (x_i = 67 %)	Li^+, –3.7; Na^+, –4.2; NH_4^+, –1.9; Mg^{2+}, –4.7; Ca^{2+}, –4.7	SSM	0.01	0.01	55.7	–	ISFET; 25 °C; $c_{dl} = 1 \times 10^{-6}$ M	[33]

[†] in 0.14 M Na^+.
[††] after storage over 3 months.

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K⁺-1 (w = 1.3 %), fluorosilicone rubber (w = 98.3 %), KTFPB (x_i = 36 %)	Li^+, –4.1, –3.5††; Na^+, –4.5, –3.2††; NH_4^+, –2.4, –1.8††; Mg^{2+}, –5.1, –3.5††; Ca^{2+}, –4.9, –4.5††	SSM	0.01	0.01	57.6 56.6††	–	ISFET; 25 °C; $c_{dl} = 1 \times 10^{-7}$ M, 5×10^{-7} M††;	[33]
	K⁺-1 (w = 1.4 %), silicone rubber (w = 98.6 %)	Na^+, –3.7; Ca^{2+}, -3.7	FIM	–	0.1	55.0	–	22 ± 2 °C	[34]
	K⁺-1 (w = 1.0 %), KTpClPB (x_i = 45 %), silicone rubber (w = 98.8 %)	Na^+, –3.6; Ca^{2+}, –3.7	FIM	–	0.1	56.0	–	22 ± 2 °C	[34]
	K⁺-1 (w = 1.1 %), DOS (w = 5.0 %), KTpClPB (x_i = 41 %), silicone rubber (w = 93.7 %)	Na^+, –3.6; Ca^{2+}, -3.7	FIM	–	0.1	57.0	–	22 ± 2 °C	[34]
	K⁺-1 (w = 1.2 %), KTFPB (x_i = 44 %), silicone rubber (w = 98.5 %)	Na^+, –3.8; Ca^{2+}, -3.9	FIM	–	0.1	57.4	–	22 ± 2 °C	[34]
	K⁺-1 (w = 1.0 %), DOS (w = 6.0 %), KTFPB (x_i = 71 %), silicone rubber (w = 92.6 %)	Na^+, –3.9; Ca^{2+}, –4.0	FIM	–	0.1	57.7	–	22 ± 2 °C	[34]
	K⁺-1 (w = 1.1 %), KTpClPB (x_i = 41 %), silicone rubber (w = 98.7 %)	Na^+, –3.7; Ca^{2+}, –3.6	FIM	–	0.1	56.5	–	22 ± 2 °C; solid-state sensor	[34]
	K⁺-1 (w = 1.0 %), KTFPB (x_i = 35 %), silicone rubber (w = 98.8 %)	Na^+, –3.8; Ca^{2+}, –4.0	FIM	–	0.1	58.6	–	22 ± 2 °C; solid–state sensor	[34]
	K⁺-1 (w = 1.0 %), DOS (w = 4.5 %), silicone rubber (w = 94.3 %), KTFPB (x_i = 35 %)	Na^+, –3.7; Ca^{2+}, –3.9	FIM	–	0.1	58.2	–	22 ± 2 °C; solid–state sensor	[34]
K⁺-2	**K⁺-2** (w = 3 %), DBS (w = 70 %), PVC (w = 27 %)	Li^+, –2.2; Na^+, –1.9; Rb^+, –0.4; Cs^+, –1.3; Mg^{2+}, –3.8; Ca^{2+}, –3.7; Sr^{2+}, –3.1; Ba^{2+}, –0.2	SSM	0.1	0.1	56	$10^{-4.3}$ $-10^{-1.5}$	25.0 ± 0.1 °C; r.o.o.g.; $t_{resp} < 30$ s	[17]
K⁺-3	**K⁺-3** (w = 5 %), PVC (w = 32 %), oNPOE (w = 63 %)	Na^+, –2.7; Rb^+, –0.40; Cs^+, –0.52; NH_4^+, –1.5	FIM	–	0.1, 0.01	53	$10^{-3.5}$ $-10^{-1.5}$	25.0 ± 0.1 °C	[4]

† in 0.14 M Na^+.
†† after storage over 3 months.

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K⁺-4	**K⁺-4** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.90; NH_4^+, –1.92; Mg^{2+}, –4.35; Ca^{2+}, –3.50 Na^+, –2.65	SSM FIM	0.1 –	0.1 –	55.9	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
	K⁺-4 (w = 0.9 %), PVC (w = 31.8 %), BBPA (w = 67.3 %)	Na^+, –3.16	SSM	0.01	0.01	52.0	–	25 ± 0.5 °C; $c_{dl} = 7.6 \times 10^{-6}$ M	[25]
	K⁺-4 (w = 0.9 %),PVC (w = 31.8 %), DOA (w = 67.3 %)	Li^+, –3.23; Na^+, –2.72: Mg^{2+}, –4.18; Ca^{2+}, –4.21	SSM	0.01	0.01	60.0	–	25 ± 0.5 °C; $c_{dl} = 7.5 \times 10^{-6}$ M	[25]
	K⁺-4 (w = 0.9 %), PVC (w = 31.8 %), DOS (w = 67.3 %)	Li^+, –3.25; Na^+, –2.53: Mg^{2+}, –4.08; Ca^{2+}, –4.20	SSM	0.01	0.01	60.5	–	25 ± 0.5 °C; $c_{dl} = 2.5 \times 10^{-6}$ M	[25]
	K⁺-4 (w = 0.9 %), PVC (w = 31.8 %), oNPOE (w = 67.3 %)	Li^+, –3.28; Na^+, –2.58: Mg^{2+}, –4.04; Ca^{2+}, –4.00	SSM	0.01	0.01	61.0	–	25 ± 0.5 °C; $c_{dl} = 3.2 \times 10^{-6}$ M	[25]
	K⁺-4 (w = 0.9 %), PVC ($w \approx$ 32 %), bis(2-ethylhexyl) adipate ($w \approx$ 67 %), KTpClPB (x_i = 50 %)	Na^+, –2.67	SSM	0.01	0.01	45.5	–	25 ± 0.5 °C; $c_{dl} = 5.5 \times 10^{-6}$ M	[25]
	K⁺-4 (w = 0.9 %), DOS (w = 67.0 %), PVC (w = 31.6 %). KTpClPB (x_i = 50 %)	Li^+, –3.16; Na^+, –3.05: Mg^{2+}, –4.09; Ca^{2+}, –3.94	SSM	0.01	0.01	57.5	–	25 ± 0.5 °C; $c_{dl} = 3.5 \times 10^{-6}$ M	[25]
	K⁺-4 (w = 0.9 %), PVC (w = 31.6 %), oNPOE (w = 67.0 %), KTpClPB (x_i = 50 %)	Li^+, –3.14; Na^+, –3.08: Mg^{2+}, –3.92; Ca^{2+}, –3.88	SSM	0.01	0.01	59.2	–	25 ± 0.5 °C; $c_{dl} = 7.5 \times 10^{-6}$ M	[25]
K⁺-5	**K⁺-5** (w = 3.8 %), oNPOE (w = 64.2 %), PVC (w = 32.0 %)	Na^+, –3.7; Rb^+, –0.70; Cs^+, –2.0; NH_4^+,–1.4	FIM	–	NH_4^+, 0.01; Rb^+, Cs^+, 0.001; Na^+, 1	–	10^{-4}–10^{-1}	25.0 ± 0.1 °C; t_{resp} < 10 s	[3,4]
K⁺-6	**K⁺-6** (w = 0.3–0.4 %), DBP ($w \approx$ 81 %), PVC ($w \approx$ 19 %)	Li^+, –5.0; Na^+, –4.0; Cs^+, –2.0; NH_4^+, –2.1; Mg^{2+}, –4.0; Ca^{2+}, –2.9; Sr^{2+}, –2.9; Ba^{2+}, –5.0; Zn^{2+}, –5.0; Cu^{2+}, –2.5	SSM	–	–	52 ± 1	10^{-4}–1	t_{resp} = 30–60 s; $c_{dl} = 2.0 \times 10^{-5}$ M	[5]
K⁺-7	**K⁺-7** (w = 0.4–0.5 %), DOP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –5.0; Na^+, –4.0; Cs^+, –5.0; NH_4^+, –1.9; Mg^{2+}, –5.0; Ca^{2+}, –5.0; Sr^{2+}, –5.0; Ba^{2+}, –5.0; Zn^{2+}, –5.0	SSM or FIM	–	–	30 ± 1	10^{-5}–10^{-1}	$c_{dl} = 3.2 \times 10^{-6}$ M	[6]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K^+-8	**K^+-8** (w = 1 %), BEHS (w = 66 %), PVC (w = 33 %)	H^+, –3.22; Li^+, –3.40; Na^+, –3.04; NH_4^+, –1.97: Mg^{2+}, –2.64; Ca^{2+}, –4.12	SSM	0.1	0.1	58.48	–	r.o.o.g.: t_{resp} = 43.6 ms,† 38.4 ms††	[7]
	K^+-8 (w = 1 %), BEHS (w = 66 %), PVC–COOH (w = 33 %)	H^+, –3.20; Li^+, –3.54; NH_4^+, –2.16; Mg^{2+}, –2.76; Ca^{2+}, –4.32	SSM	0.1	0.1	58.89	–	r.o.o.g.: t_{resp} = 35.0 ms,† 52.9 ms††	[7]
	K^+-8 (w = 1 %), BEHS (w = 66 %), PVC (w = 33 %), KTpClPB (x_i = 75 %)	H^+, –3.52; Li^+, –3.56; Na^+, –3.16; NH_4^+, –2.18: Mg^{2+}, –2.76; Ca^{2+}, –4.38	SSM	0.1	0.1	59.36	–	r.o.o.g.: t_{resp} = 31.1ms,† 28.1ms††	[7]
	K^+-8 (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.4; Na^+, –3.0; Cs^+, –2.2; NH_4^+, –2.0; Mg^{2+}, –3.8; Ca^{2+}, –4.0	SSM	0.1	0.1	53.8 51.2	10^{-4}–10^{-1} 10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.8}$ M; FIA	[15]
	K^+-8 (w = 2 %), BBPA (w = 65 %), PVC (w = 33 %)	Li^+, –3.6; Na^+, –3.2; Cs^+, –2.4; NH_4^+, –2.1; Mg^{2+}, –4.4; Ca^{2+}, –4.4	SSM	0.1	0.1	57.5 56.9	10^{-4}–10^{-1} 10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-5.7}$ M; FIA	[15]
	K^+-8 (w = 2 %), oNPOE ($w \approx$ 65 %), PVC (w = 33 %), KTpClPB (x_i = 70 %)	Li^+, –3.8; Na^+, –3.2; Cs^+, –2.5; NH_4^+, –2.1; Mg^{2+}, –5.0; Ca^{2+}, –4.5	SSM	0.1	0.1	57.9 56.0	10^{-4}–10^{-1} 10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-5.3}$ M; FIA	[15]
	K^+-8 (w = 2 %), BBPA ($w \approx$ 65 %), PVC (w = 33 %), KTpClPB (x_i = 70 %)	Li^+, –3.8; Na^+, –3.3; Cs^+, –2.3; NH_4^+, –2.1; Mg^{2+}, –4.3; Ca^{2+}, –4.5	SSM	0.1	0.1	58.1 55.6	10^{-4}–10^{-1} 10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-5.8}$ M; FIA	[15]
	K^+-8 (w = 1 %), DOS (w = 66 %). PVC (w = 32.6 %), NaTPB (x_i = 110 %)	Li^+, –3.8; Cs^+, –2.4; NH_4^+, –2.1; Ca^{2+}, –4.2 Na^+, –3.2	SSM FIM	0.1 –	0.1 –	58.1	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
	K^+-8 (w = 1 %), PVC (w = 32.6 %), dinonyl adipate (w = 66 %), NaTPB (x_i = 110 %)	NH_4^+, –2.2 Na^+, –3.2	SSM FIM	0.1 –	0.1 –	58.1 ± 0.1	10^{-4}–10^{-1}	20 ± 2 °C	[19]
	K^+-8 (w = 1.4 %), fluorosilicone rubber (w = 98.2 %), KTpClPB (x_i = 40 %)	Li^+, –3.4; Na^+, –3.1; NH_4^+, –1.9; Mg^{2+}, –4.2; Ca^{2+}, –4.2	SSM	10^{-2}	10^{-2}	56.8	–	ISFET; 25 °C; $c_{dl} = 1 \times 10^{-6}$ M	[33]

† unconditioned membrane
†† membranes conditioned in 10^{-3} M KCl

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K^+-8 (w = 1.5 %), fluorosilicone rubber (w = 97.8 %), KTpClPB (x_i = 73 %)	Li^+, –3.8; Na^+, –3.5; NH_4^+, –2.2; Mg^{2+}, –4.6; Ca^{2+}, –4.7	SSM	10^{-2}	10^{-2}	56.5	–	ISFET; 25 °C; $c_{dl} = 1 \times 10^{-6}$ M	[33]
K^+-9	**K^+-9** (w = 3 %), silicone rubber (w = 88.2 %), cross–linking agent (w = 8.8 %)	Na^+, ≦–3.3	FIM	–	0.10	55	–	ISFET	[11]
	K^+-9 (w = 3 %), silicone rubber (w = 97 %)	Na^+, ≦–3.3	FIM	–	0.1	55	–	ISFET	[14]
K^+-10	**K^+-10** (w = 3 %), silicone rubber (w = 88.2 %), cross–linking agent (w = 8.8 %)	Na^+, ≦–3.1	FIM	–	0.10	56	–	ISFET	[12]
	K^+-10 (w = 3 %), silicone rubber (w = 97 %)	Na^+, ≦–3.1	FIM	–	0.1	56	–	ISFET; poly(hydroxyethyl methacrylate) was covalently attached to SiO_2 gate.	[14]
K^+-11	**K^+-11** (w = 3.2–3.8 %), oNPOE ($w \approx$ 64 %), PVC ($w \approx$ 32 %)	Na^+, –3.4; Rb^+, –0.52; Cs^+, –0.70; NH_4^+, –1.5	FIM	–	0.1, 0.01	55	10^{-4}–10^{-1}	25.0 ± 0.1 °C	[4]
K^+-12	**K^+-12** (w = 0.4–0.5 %), DOP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –5.00; Cs^+, –1.30; NH_4^+, –3.00; Mg^{2+}, –3.40; Ca^{2+}, –5.00; Sr^{2+}, –5.00; Ba^{2+}, –5.00; Zn^{2+}, –4.70	SSM	–	–	46 ± 1	–		[6]
		Na^+, –2.30	FIM	–	–		–		
K^+-13	**K^+-13** (w = 0.4–0.5 %), DOP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –4.00; Cs^+, –4.00; NH_4^+, –4.00; Mg^{2+}, –2.30; Ca^{2+}, –5.00; Sr^{2+}, –5.00; Ba^{2+}, –5.00; Zn^{2+}, –5.00	SSM	–	–	38 ± 1			[6]
		Na^+, –3.60	FIM	–	–				
K^+-14	**K^+-14** (w = 0.4–0.5 %), DOP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –5.00; Cs^+, –5.00; NH_4^+, –2.20; Mg^{2+}, –5.00; Ca^{2+}, –5.00; Sr^{2+}, –5.00; Ba^{2+}, –5.00; Zn^{2+}, –5.00	SSM	–	–	55 ± 1	10^{-1}–10^{-5}	–	[6]
		Na^+, –3.70	FIM	–	–				
K^+-15	**K^+-15** (w = 0.4–0.5 %), DOP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –5.00; Cs^+, –4.40; NH_4^+, –1.70; Mg^{2+}, –5.00; Ca^{2+}, –5.00; Sr^{2+}, –4.30;	SSM	–	–	38 ± 1	$10^{-1.5}$–$10^{-5.3}$		[6]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ba^{2+}, –5.00; Zn^{2+}, –5.00 Na^+, –2.70;	FIM	–	–				
K⁺-16	**K⁺-16** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –0.20; Na^+, –1.40; Rb^+, –0.20; Cs^+, –1.20; NH_4^+, –0.70; Mg^{2+}, –1.40; Ca^{2+}, –1.80; Sr^{2+}, –1.00; Ba^{2+}, –1.60	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-17	**K⁺-17** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.1; Na^+, –2.7; Rb^+, –0.4; Cs^+, –2.7; NH_4^+, –1.6; Mg^{2+}, –4.1; Ca^{2+}, –3.4; Sr^{2+}, –3.0; Ba^{2+}, –3.2	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-18	**K⁺-18** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.2; Na^+, –2.9; Rb^+, –0.4; Cs^+, –2.5; NH_4^+, –1.8; Mg^{2+}, –4.2; Ca^{2+}, –3.7; Sr^{2+}, –3.2; Ba^{2+}, –3.4	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-19	**K⁺-19** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.0; Na^+, –2.5; Rb^+, –0.8; Cs^+, –2.3; NH_4^+, –1.6; Mg^{2+}, –3.5; Ca^{2+}, –3.4; Sr^{2+}, –3.0; Ba^{2+}, –3.4	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-20	**K⁺-20** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.3; Na^+, –2.95; Rb^+, –0.7; Cs^+, –2.4; NH_4^+, –1.7; Mg^{2+}, –4.1; Ca^{2+}, –3.8; Sr^{2+}, –3.1; Ba^{2+}, –3.9	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-21	**K⁺-21** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.3; Na^+, –2.9; Rb^+, –0.5; Cs^+, –2.9; NH_4^+, –1.7; Mg^{2+}, –4.3; Ca^{2+}, –3.6; Sr^{2+}, –3.2; Ba^{2+}, –3.5	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-22	**K⁺-22** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.2; Na^+, –2.9; Rb^+, –0.7; Cs^+, –2.5; NH_4^+, –1.8; Mg^{2+}, –4.1;	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ca^{2+}, –3.7; Sr^{2+}, –3.1; Ba^{2+}, –3.8							
K⁺-23	**K⁺-23** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, +0.3; Na^+, –1.1; Rb^+, –0.2; Cs^+, –1.0; NH_4^+, –0.6; Mg^{2+}, –0.9; Ca^{2+}, –1.8; Sr^{2+}, –0.6; Ba^{2+}, –1.5	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-24	**K⁺-24** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –2.9; Na^+, –2.7; Rb^+, –1.0; Cs^+, –2.4; NH_4^+, –1.7; Mg^{2+}, –3.9; Ca^{2+}, –3.6; Sr^{2+}, –3.1; Ba^{2+}, –3.3	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-25	**K⁺-25** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –2.4; Na^+, –2.5; Rb^+, –1.1; Cs^+, –2.2; NH_4^+, –1.4; Mg^{2+}, –3.4; Ca^{2+}, –3.2; Sr^{2+}, –2.7; Ba^{2+}, –2.9	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-26	**K⁺-26** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –0.5; Na^+, –1.6; Rb^+, –0.2; Cs^+, –1.4; NH_4^+, –1.0; Mg^{2+}, –1.2; Ca^{2+}, –2.5; Sr^{2+}, –1.9; Ba^{2+}, –1.8	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-27	**K⁺-27** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –2.9; Na^+, –2.6; Rb^+, –0.5; Cs^+, –2.2; NH_4^+, –1.6; Mg^{2+}, –4.0; Ca^{2+}, –3.5; Sr^{2+}, –3.3; Ba^{2+}, –3.3	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-28	**K⁺-28** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.4; Na^+, –2.9; Rb^+, –0.8; Cs^+, –2.7; NH_4^+, –1.7; Mg^{2+}, –4.3; Ca^{2+}, –3.4; Sr^{2+}, –3.4; Ba^{2+}, –3.3	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K⁺-29	**K⁺-29** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –1.3; Na^+, –1.9; Rb^+, –0.9; Cs^+, –2.0; NH_4^+, –1.3; Mg^{2+}, –2.6;	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ca^{2+}, –2.7; Sr^{2+}, –2.1; Ba^{2+}, –2.4							
K^+-30	**K^+-30** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.4; Na^+, –3.0; Rb^+, –0.9; Cs^+, –2.7; NH_4^+, –1.9; Mg^{2+}, –4.3; Ca^{2+}, –3.8; Sr^{2+}, –3.2; Ba^{2+}, –3.4	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
	K^+-30 (w = 2 %), oNPOE (w = 64 %), PVC (POLANVIL S–70) (w = 34 %)	Li^+, –3.4; Na^+, –3.0; Rb^+, –0.9; Cs^+, –2.7; NH_4^+, –1.9; Mg^{2+}, –4.3; Ca^{2+}, –3.8; Sr^{2+}, –3.2; Ba^{2+}, –3.4	SSM	0.1	0.1	56	$10^{-4.4}$ -10^{-1}	25.0 ± 0.1 °C	[8]
	K^+-30 (w = 2 %), oNPOE (w = 64 %), PVC (HOSTALIT PVC) (w = 34 %)	Li^+, –3.5; Na^+, –3.3; Rb^+, –0.9; Cs^+, –2.8; NH_4^+, –2.0; Mg^{2+}, –4.3; Ca^{2+}, –3.7; Sr^{2+}, –3.1; Ba^{2+}, –3.3	SSM	0.1	0.1	58	$10^{-5.1}$–10^{-1}	25.0 ± 0.1 °C; $c_{dl} = 10^{-4.8}$ M	[8]
		Na^+, –3.5	FIM	–	–	–	–		
K^+-31	**K^+-31** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –2.2; Na^+, –2.5; Rb^+, –0.6; Cs^+, –1.7; NH_4^+, –1.6; Mg^{2+}, –3.0; Ca^{2+}, –2.9; Sr^{2+}, –2.4; Ba^{2+}, –2.6	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K^+-32	**K^+-32** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.0; Na^+, –2.6; Rb^+, –0.3; Cs^+, –2.6; NH_4^+, –1.5; Mg^{2+}, –4.3; Ca^{2+}, –3.7; Sr^{2+}, –3.2; Ba^{2+}, –3.3	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K^+-33	**K^+-33** (w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –3.2; Na^+, –2.8; Rb^+, –0.9; Cs^+, –2.5; NH_4^+, –1.7; Mg^{2+}, –4.3; Ca^{2+}, –3.7; Sr^{2+}, –3.2; Ba^{2+}, –3.2	SSM	0.1	0.1	–	–	25.0 ± 0.1 °C	[8]
K^+-34	**K^+-34** (w = 0.3–0.5 %), DBP (w = 77–80 %),	Li^+, –5.0; Na^+, –2.6; Cs^+, –1.0; NH_4^+ –2.3;	SSM	–	–	44 ± 1	10^{-4}–1	t_{resp} = 30–60 s;	[5]

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 20–23 %)	Mg^{2+}, –3.7; Ca^{2+}, –3.0; Sr^{2+}, –2.6; Ba^{2+}, –5.0; Cu^{2+}, –1.0; Zn^{2+}, –2.7						5.5 < pH < 10.5; $c_{dl} = 5.6 \times 10^{-5}$ M	
K⁺-35	**K⁺-35** (w = 0.3–0.5 %), DOP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –5.0; Na^+, –3.3; Cs^+, –1.6; NH_4^+, –1.5; Mg^{2+}, –2.6; Ca^{2+}, –3.0; Sr^{2+}, –1.6; Ba^{2+}, –5.0; Cu^{2+}, –0.70; Zn^{2+}, –5.0	SSM	–	–	43 ± 1	10^{-4}–1	t_{resp} = 30–60 s; 5.5 < pH < 10.5; $c_{dl} = 7.9 \times 10^{-5}$ M	[5]
K⁺-36	**K⁺-36** (w = 0.3–0.5 %), DBP (w = 77–80 %), PVC (w = 20–23 %)	Li^+, –5.0; Na^+, –3.1; Cs^+, –1.6; NH_4^+, –1.7; Mg^{2+}, –3.4; Ca^{2+}, –4.0; Sr^{2+}, –2.4; Cu^{2+}, –1.5; Zn^{2+}, –2.4	SSM	–	–	47 ± 1	10^{-4}–1	t_{resp} = 30–60 s; 5 < pH < 10.5; $c_{dl} = 5.0 \times 10^{-5}$ M	[5]
K⁺-37	**K⁺-37** (w = 1.64 %), diethyl phthalate (w = 65.04 %), PVC (w = 32.52 %), NaTPB (x_i = 50 %)	Li^+, –1.13; Na^+, –1.63; Mg^{2+}, –2.26; Ca^{2+}, –2.72	FIM	–	–	53.5	10^{-4}–10^{-1}	25 ± 1 °C; $c_{dl} = 10^{-4.45}$ M	[9]
K⁺-38	**K⁺-38** (w = 1.64 %), diethyl phthalate (w = 65.04 %), PVC (w = 32.52 %), NaTPB (x_i = 50 %)	Li^+, –1.77; Na^+, –1.96; Cs^+, –2.10; NH_4^+, –1.47; Mg^{2+}, –2.96; Ca^{2+}, –2.85; Sr^{2+}, –2.64; Ba^{2+}, –2.69; Mn^{2+}, –2.80; Co^{2+}, –2.88; Ni^{2+}, –2.92; Cu^{2+}, –2.82; Cd^{2+}, –1.45; Al^{3+}, –2.39	FIM	–	–	58.0	10^{-4}–10^{-1}	25 ± 1 °C; $c_{dl} = 10^{-4.60}$ M; t_{90} = 2 min; τ = 45 d; 5.5 < pH < 7.5	[9]
	K⁺-38 (w = 1.64 %), PVC (w = 32.52 %), DBP (w = 65.04 %), NaTPB (x_i = 50 %)	Li^+, –1.27; Na^+, –1.79; Mg^{2+}, –2.28; Ca^{2+}, –2.72	FIM	–	–	–	–		[9]
	K⁺-38 (w = 1.64 %), PVC (w = 32.52 %), NaTPB (x_i = 50 %), acetophenone (w = 65.04 %)	Li^+, –0.29; Na^+, –0.12; Mg^{2+}, –0.63; Ca^{2+}, –0.43;	FIM	–	–	–	–		[9]
	K⁺-38 (w = 1.64 %), oNPOE (w = 65.04 %), PVC (w = 32.52 %), NaTPB (x_i = 50 %)	Li^+, –0.52; Na^+, –0.46; Mg^{2+}, –0.85; Ca^{2+}, –0.64	FIM	–	–	–	–		[9]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K^+-38 (w = 1.64 %), PVC (w = 32.52 %), nitrobenzene (w = 65.04 %), NaTPB (x_i = 50 %)	Li^+, –0.53; Na^+, –0.15; Mg^{2+}, –0.52; Ca^{2+}, –0.43	FIM	–	–	–	–		[9]
K^+-39	**K^+-39** (w = 1.64 %), diethyl phthalate (w = 65.04 %), PVC (w = 32.52 %), NaTPB (x_i = 50 %)	Li^+, –1.00; Na^+, –1.67; Mg^{2+}, –2.13; Ca^{2+}, –2.27	FIM	–	–	53.0	10^{-4}–10^{-1}	25 ± 1 °C; $c_{dl} = 10^{-4.3}$ M	[9]
K^+-40	**K^+-40** (w = 1.64 %), diethyl phthalate (w = 65.04 %), PVC (w = 32.52 %), NaTPB (x_i = 50 %)	Li^+, –1.11; Na^+, –1.60; Mg^{2+}, –2.00; Ca^{2+}, –2.05	FIM	–	–	51.5	10^{-4}–10^{-1}	25 ± 1 °C; $c_{dl} = 10^{-4.26}$ M	[9]
K^+-41	**K^+-41** (w = 2.7 %), DBP (w = 64 %), PVC (w = 32 %), KTpClPB (x_i = 60 %)	Li^+, –1.95; Na^+, –2.35; Rb^+, –2.20; Cs^+, –2.25; NH_4^+, –2.05; Mg^{2+}, –2.90; Ca^{2+}, –3.05; Sr^{2+}, –3.20; Ba^{2+}, –3.30; Mn^{2+}, –2.55; Co^{2+}, –2.70; Ni^{2+}, –3.00; Cu^{2+}, –2.75; Cd^{2+}, –2.45; Al^{3+}, –3.45	SSM	–	–	–	10^{-5}–10^{-1}	25 ± 1 °C; r.o.o.g.; $\tau > 60$ d; $t_{resp} < 20$ s	[10]
K^+-42	**K^+-42** (w = 2.7 %), DBP (w = 64 %), PVC (w = 32 %), KTpClPB (x_i = 81 %)	Li^+, –1.81; Na^+, –2.25; Rb^+, –2.10; Cs^+, –2.20; NH_4^+, –1.91; Mg^{2+}, –2.80; Ca^{2+}, –3.00; Sr^{2+}, –3.11 Ba^{2+}, –3.20; Mn^{2+}, –2.45; Co^{2+}, –2.60; Ni^{2+}, –2.90; Cu^{2+}, –2.70; Cd^{2+}, –2.32; Al^{3+}, –3.57	SSM	–	–	–	10^{-5}–10^{-1}	25 ± 1 °C; r.o.o.g.; $\tau > 60$ d; $t_{resp} < 20$ s	[10]
K^+-43	**K^+-43** (w = 2.7 %), DBP (w = 64 %), PVC (w = 32 %), KTpClPB (x_i = 68 %)	Li^+, –2.05; Na^+, –2.40; Rb^+, –2.32; Cs^+, –2.33; NH_4^+, –2.17; Mg^{2+}, –3.00; Ca^{2+}, –3.15; Sr^{2+}, –3.40; Ba^{2+}, –3.50; Mn^{2+}, –2.70; Co^{2+}, –2.84; Ni^{2+}, –3.10; Cu^{2+}, –2.85; Cd^{2+}, –2.60; Al^{3+}, –3.59	SSM	–	–	–	10^{-5}–10^{-1}	25 ± 1 °C; r.o.o.g.; $\tau > 60$ d; $3 < pH < 11$; $t_{resp} < 20$ s; $c_{dl} = 4 \times 10^{-6}$ M	[10]

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K⁺-44	**K⁺-44** (w = 2.7 %), DBP (w = 64 %), PVC (w = 32 %), KTpClPB (x_i = 73 %)	Li^+, –2.10; Na^+, –2.50; Rb^+, –2.32; Cs^+, –2.40; NH_4^+, –2.19; Mg^{2+}, –3.10; Ca^{2+}, –3.19; Sr^{2+}, –3.50; Ba^{2+}, –3.58; Mn^{2+}, –2.80; Co^{2+}, –3.00; Ni^{2+}, –3.11; Cu^{2+}, –2.90; Cd^{2+}, –2.70; Al^{3+}, –3.59	SSM	–	–	60	10^{-5}–10^{-1}	25 ± 1 °C; r.o.o.g.; τ > 60 d; $c_{dl} = 4 \times 10^{-6}$ M; t_{resp} < 20 s	[10]
K⁺-45	**K⁺-45** (w = 10 %), DOP (w = 65 %), PVC (w = 25 %)	Li^+, –1.5; Na^+, –0.4; Cs^+, –0.2; Ca^{2+}, –3.8; Sr^{2+}, –2.2; Ba^{2+}, –2.9; Pb^{2+}, –1.7	FIM	–	10^{-3}	56.6	>$10^{-4.7}$	Cu CWE	[16]
K⁺-46	**K⁺-46** (w = 10 %), DOP (w = 65 %), PVC (w = 25 %)	Li^+, –0.5; Na^+, –0.4; Cs^+, –0.2; Ca^{2+}, –1.8; Sr^{2+}, –1.0; Ba^{2+}, –1.3; Pb^{2+}, –1.3	FIM	–	10^{-3}	56.1	>$10^{-4.7}$	Cu CWE	[16]
K⁺-47	**K⁺-47** (w = 3 %), DBS (w = 70 %), PVC (w = 27 %)	Li^+, –2.4; Na^+, –1.8; Rb^+, –0.3; Cs^+, –0.8; Mg^{2+}, –3.9; Ca^{2+}, –3.8; Sr^{2+}, –3.8; Ba^{2+}, –3.6	SSM	0.1	0.1	59	10^{-5}–10^{-1}	25 ± 0.5 °C; r.o.o.g.; t_{resp} < 30 s	[17]
K⁺-48	**K⁺-48** (w = 3 %), DBS (w = 70 %), PVC (w = 27 %)	Li^+, –1.7; Na^+, –1.5; Rb^+, –0.1; Cs^+, –1.0; Mg^{2+}, –4.6; Ca^{2+}, –4.4; Sr^{2+}, –4.4; Ba^{2+}, –4.1	SSM	0.1	0.1	58	10^{-5}–10^{-1}	25 ± 0.5 °C; r.o.o.g.; t_{resp} < 30 s	[17]
K⁺-49	**K⁺-49** (w = 3 %), DBS (w = 70 %), PVC (w = 27 %)	Li^+, –1.7; Na^+, –0.5; Rb, –0.4; Cs^+, –0.8; Mg^{2+}, –3.2; Ca^{2+}, –3.0; Sr^{2+}, –2.4; Ba^{2+}, –1.6	SSM	0.1	0.1	58	10^{-5}–10^{-1}	25 ± 0.5 °C; r.o.o.g.; t_{resp} < 30 s	[17]
K⁺-50	**K⁺-50** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 22 %)	Li^+, –2.0; Na^+, –0.9; Cs^+, –1.0; NH_4^+, –0.5; Mg^{2+}, –2.8; Ca^{2+}, –1.5; Sr^{2+}, –1.8; Ba^{2+}, –0.2; Mn^{2+}, –2.0; Co^{2+}, –2.2; Ni^{2+}, –1.5; Cu^{2+}, –0.2; Zn^{2+}, –2.6; Cd^{2+}, –1.8;	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Pb^{2+}, –0.1; Ag^+, +2.8; Hg^{2+}, +0.1							
K⁺-51	**K⁺-51** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 23 %)	Li^+, –1.1; Na^+, –0.4; Cs^+, –0.4; NH_4^+, –0.8; Mg^{2+}, –2.5; Ca^{2+}, –0.2; Sr^{2+}, –0.0; Ba^{2+}, +0.2; Mn^{2+}, –1.3; Co^{2+}, –1.6; Ni^{2+}, –1.3; Cu^{2+}, +0.8; Zn^{2+}, –2.0; Cd^{2+}, +1.0; Pb^{2+}, +1.1; Ag^+, +4.3; Hg^{2+}, +4.5	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-52	**K⁺-52** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 24 %)	Li^+, –1.8; Na^+, –1.1; Cs^+, +0.3; NH_4^+, –0.4; Mg^{2+}, –2.9; Ca^{2+}, –1.6; Sr^{2+}, –2.2; Ba^{2+}, –2.2; Mn^{2+}, –2.7; Co^{2+}, –2.6; Ni^{2+}, –1.3; Cu^{2+}, –0.9; Zn^{2+}, –2.9; Cd^{2+}, –0.1; Pb^{2+}, –0.7; Ag^+, +1.1; Hg^{2+}, +2.7	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-53	**K⁺-53** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 30 %)	Li^+, –1.7; Na^+, –2.1; Cs^+, –0.2; NH_4^+, –0.4; Mg^{2+}, –1.6; Ca^{2+}, –2.6; Sr^{2+}, –2.2; Ba^{2+}, –1.0; Ni^{2+}, –1.7; Cu^{2+}, –3.3	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-54	**K⁺-54** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 35 %)	Li^+, –2.0; Na^+, –1.4; Cs^+, +0.3; NH_4^+, –0.5; Mg^{2+}, –1.5; Ca^{2+}, –2.4; Sr^{2+}, –2.5; Ba^{2+}, –0.3; Ni^{2+}, –1.6; Cu^{2+}, –3.7	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-55	**K⁺-55** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 44 %)	Li^+, –2.2; Na^+, –1.4; Cs^+, –0.3; NH_4^+, –0.5; Mg^{2+}, –2.9; Ca^{2+}, –1.7; Sr^{2+}, –1.0; Ba^{2+}, +0.5; Mn^{2+}, –1.7; Co^{2+}, –2.7; Ni^{2+}, –2.0; Cu^{2+}, –0.8;	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Zn^{2+}, –1.8; Cd^{2+}, +0.6; Pb^{2+}, +1.1; Ag^+, +0.3; Hg^{2+}, +4.8							
K⁺-56	**K⁺-56** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 50 %)	Li^+, –1.9; Na^+, –1.0; Cs^+, +0.6; NH_4^+, –0.4; Mg^{2+}, –2.8; Ca^{2+}, –0.8; Sr^{2+}, –1.3; Ba^{2+}, +0.9; Mn^{2+}, –0.6; Co^{2+}, –2.1; Ni^{2+}, –1.7; Cu^{2+}, 0.0; Zn^{2+}, –0.8; Cd^{2+}, +0.6; Pb^{2+}, +1.1; Ag^+, +2.1; Hg^{2+}, +4.1	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-57	**K⁺-57** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 44 %)	Li^+, –1.9; Na^+, –1.3; Cs^+, +0.9; NH_4^+, –0.1; Mg^{2+}, –2.6; Ca^{2+}, –1.7; Sr^{2+}, –1.5; Ba^{2+}, –1.3; Mn^{2+}, –2.6; Co^{2+}, –2.2; Ni^{2+}, –1.9; Cu^{2+}, –0.8; Zn^{2+}, –2.8; Cd^{2+}, –0.8; Pb^{2+}, –0.4; Ag^+, +4.6; Hg^{2+}, +4.6	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-58	**K⁺-58** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 17 %)	Li^+, –3.8; Na, –0.5; Cs^+, +1.3; NH_4^+, –0.4; Mg^{2+}, –2.9; Ca^{2+}, –3.5; Sr^{2+}, –2.8; Ba^{2+}, –2.3; Ni^{2+}, –1.1; Cu^{2+}, –1.2	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-59	**K⁺-59** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 16 %)	Li^+, –2.2; Na^+, –0.4; Cs^+, +0.4; NH_4^+, –0.3; Mg^{2+}, –3.5; Ca^{2+}, –1.1; Sr^{2+}, –0.7; Ba^{2+}, +0.2; Ni^{2+}, –3.1; Cu^{2+}, –1.2	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K⁺-60	**K⁺-60** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 19 %)	Li^+, –1.7; Na^+, –0.9; Cs^+, +1.4; NH_4^+, +0.2; Mg^{2+}, –1.6; Ca^{2+}, –1.4; Sr^{2+}, –0.6; Ba^{2+}, +0.7; Ni^{2+}, –1.5; Cu^{2+}, –1.6	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K^+-61	**K^+-61** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 24 %)	Li^+, –1.6; Na^+, –0.9; Cs^+, +0.3; NH_4^+, –0.2; Mg^{2+}, –0.3; Ca^{2+}, –1.8; Sr^{2+}, –1.4; Ba^{2+}, –0.4; Ni^{2+}, –1.9; Cu^{2+}, –1.9	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K^+-62	**K^+-62** (w = 2 %), oNPOE (w = 63.5 %), PVC (w = 34 %), KTpClPB (x_i = 21 %)	Li^+, –2.2; Na^+, –0.8; Cs^+, +0.2; NH_4^+, –0.1; Mg^{2+}, –0.9; Ca^{2+}, –1.1; Sr^{2+}, –1.0; Ba^{2+}, –0.4; Ni^{2+}, –2.4; Cu^{2+}, –1.2	MSM	10^{-3}	0.1	51–56	10^{-4}–10^{-1}	r.o.o.g.	[18]
K^+-63	**K^+-63** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –4.0; NH_4^+, –1.8; Mg^{2+}, –4.4; Ca^{2+}, –3.6	SSM	0.1	0.1	56.1	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –3.0	FIM	–	0.14				
K^+-64	**K^+-64** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.8; NH_4^+, –1.4; Mg^{2+}, –3.5; Ca^{2+}, –3.2	SSM	0.1	0.1	41.8	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –1.8	FIM	–	0.14				
K^+-65	**K^+-65** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.8; NH_4^+, –1.7; Mg^{2+}, –3.9; Ca^{2+}, –4.0	SSM	0.1	0.1	54.8	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –2.5	FIM	–	0.14				
K^+-66	**K^+-66** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Cs^+, –2.3; NH_4^+, –2.1; Mg^{2+}, –2.8; Ca^{2+}, –4.3	SSM	0.1	0.1	55.4	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –3.1	FIM	–	0.14				
K^+-67	**K^+-67** (w = 1 %), DOS (w = 66 %), PVC (w = 32.6 %), NaTPB (w = 0.4 %)	Li^+, –3.5; Cs^+, –2.1; NH_4^+, –1.9; Ca^{2+}, –4.5	SSM	0.1	0.1	56.0	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –2.8	FIM	–	0.14				
	K^+-67 (w = 1 %), PVC (w = 32.6 %), dinonyl adipate (w = 66 %), NaTPB (w = 0.4 %)	NH_4^+, –1.9	SSM	0.1	0.1	56.0 ± 0.7	10^{-4}–10^{-1}	20 ± 2 °C	[19]
		Na^+, –2.9	FIM	–	0.14				
K^+-68	**K^+-68** (w = 1 %), dinonyl adipate (w = 66 %), PVC (w = 32.6 %), NaTPB (x_i = 55 %)	NH_4^+, –2.2	SSM	0.1	0.1	57.6 ± 0.3	10^{-4}–10^{-1}	20 ± 2 °C	[19]
		Na^+, –3.2	FIM	–	0.14				
K^+-69	**K^+-69** (w = 1 %), PVC (w = 32.6 %), dinonyl adipate (w = 66 %), NaTPB (x_i = 120 %)	NH_4^+, –2.2	SSM	0.1	0.1	57.9 ± 0.5	10^{-4}–10^{-1}	20 ± 2 °C	[19]
		Na^+, –3.3	FIM	–	0.14				

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K⁺-70	**K⁺-70** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.6; NH_4^+, –1.8; Mg^{2+}, –3.3; Ca^{2+}, –3.6	SSM	0.1	0.1	49.9	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –2.7	FIM	–	0.14				
K⁺-71	**K⁺-71** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	NH_4^+, –1.4; Mg^{2+}, –3.1; Ca^{2+}, –2.7	SSM	0.1	0.1	42.3	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –2.2	FIM	–	0.14				
K⁺-72	**K⁺-72** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	NH_4^+, –1.5; Mg^{2+}, –3.4; Ca^{2+}, –3.3	SSM	0.1	0.1	40.4	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –2.2	FIM	–	0.14				
K⁺-73	**K⁺-73** (w = 1 %), DOS (w = 66 %), PVC (w = 32.6 %), NaTPB (x_i = 130 %)	Li^+, –3.5; Cs^+, –2.1; NH_4^+, –1.9; Ca^{2+}, –4.6	SSM	0.1	0.1	58.0 ± 3	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –3.7	FIM	–	0.14				
K⁺-74	**K⁺-74** (w = 1 %), DOS (w = 66 %), PVC (w = 32.6 %), NaTPB (x_i = 100 %)	Li^+, –3.2; Cs^+, –1.7; NH_4^+, –1.8; Ca^{2+}, –3.7	SSM	0.1	0.1	55.2 ± 0.8	10^{-4}–10^{-1}	20 ± 2 °C; r.o.o.g.	[19]
		Na^+, –2.3	FIM	–	0.14				
K⁺-75	**K⁺-75** (w = 1.4 %), oNPOE (w = 65.2 %), KTpClPB (x_i = 50 %), PVC (w = 32.8 %)	Li^+, –0.28; Na^+, –0.55; Rb^+, +0.20; Cs^+, +0.88; Mg^{2+}, –1.2; Ca^{2+}, +0.15; Sr^{2+}, +0.45	SSM	0.1	0.1	–	–	FIA; Ag CWE	[22]
		Li^+, –0.35; Na^+, –0.62; Rb^+, +0.15; Cs^+, +0.92; Mg^{2+}, –1.2; Ca^{2+}, +0.20; Sr^{2+}, +0.60	SSM ($E_A = E_B$)	–	0.1				
	K⁺-75 (w = 1.4 %), oNPPE (w = 65.2 %), KTpClPB (x_i = 50 %), PVC (w = 32.8 %)	Li^+, –1.4; Na^+, –1.7; Rb^+ , +0.20; Cs^+, +0.82; Mg^{2+}, –2.8; Ca^{2+}, +0.46; Sr^{2+}, +1.2	SSM	0.1	0.1	–	–	FIA; Ag CWE	[22]
		Li^+, –1.4; Na^+, –1.7; Rb^+, +0.20; Cs^+, +0.72; Mg^{2+}, –2.5; Ca^{2+}, +0.46; Sr^{2+}, +0.97	SSM ($E_A = E_B$)		0.1				

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	K^+-75 (w = 1.5 %), oNPOE (w = 65 %), PVC (w = 33 %), KTpClPB (x_i = 21 %)	Li^+, –2.3; Na^+, –2.1; Mg^{2+}, –2.6; Ca^{2+}, –2.6; Sr^{2+}, –1.9	SSM ($E_A = E_B$)	0.1	–	–	–	Ag CWE; 0.14 M NaCl background;	[28]
		Na^+, –2.5	FIM	–	0.140			FIA	
K^+-76	**K^+-76** (w = 1.5 %), oNPOE (w = 65 %), PVC (w = 33 %),	Li^+, –2.2; Na^+, –2.1; Mg^{2+}, –2.2; Ca^{2+}, –1.9; Sr^{2+}, –0.82	SSM ($E_A = E_B$)	–	0.1	–	–	Ag CWE; 0.14 M NaCl background;	[28]
	KTpClPB (x_i = 27 %)	Na^+, –2.5	FIM	–	0.140			FIA	
K^+-77	**K^+-77** (w = 1.5 %), oNPOE (w = 65 %), PVC (w = 33 %),	Li^+, –2.0; Na^+, –1.9; Mg^{2+}, –1.9; Ca^{2+}, –1.2; Sr^{2+}, –0.42	SSM ($E_A = E_B$)	–	0.1	–	–	Ag CWE; 0.14 M NaCl background;	[28]
	KTpClPB (x_i = 24 %)	Na^+, –2.5	FIM	–	0.140			FIA	
K^+-78	**K^+-78** (w = 1.5 %), oNPOE (w = 65 %), PVC (w = 33 %),	Li^+, –1.9; Na^+, –1.7; Mg^{2+}, –1.7; Ca^{2+}, –1.1; Sr^{2+}, –0.41	SSM ($E_A = E_B$)	–	0.1	–	–	Ag CWE; 0.14 M NaCl background;	[28]
	KTpClPB (x_i = 27 %)	Na^+, –2.0	FIM	–	0.140			FIA	
K^+-79	**K^+-79** (w = 1.5 %), oNPOE (w = 65 %), PVC (w = 33 %),	Li^+,+0.1; Na^+, –0.49; Mg^{2+}, –1.0; Ca^{2+}, –0.52; Sr^{2+}, +0.41	SSM ($E_A = E_B$)	–	0.1	–	–	Ag CWE; 0.14 M NaCl background;	[28]
	KTpClPB (x_i = 34 %)	Na^+, –1.0	FIM	–	0.140			FIA	
K^+-80	**K^+-80** (w = 1.5 %), oNPOE (w = 65 %), PVC (w = 33 %),	Li^+, –1.0; Na^+,–0.89; Mg^{2+}, –1.4; Ca^{2+}, –1.0; Sr^{2+}, +0.079	SSM ($E_A = E_B$)	–	0.1	–	–	Ag CWE; 0.14 M NaCl background;	[28]
	KTpClPB (x_i = 31 %)	Na^+, –1.3	FIM	–	0.140			FIA	
K^+-81	**K^+-81** ($w \approx$ 1 %), DOS (w = 61–66 %), PVC (w = 33–38 %)	Na^+, –1.90	FIM	–	0.1	57.7	–		[29]
	K^+-81 ($w \approx$ 1 %), KTPB (x_i < 100 %), DOS (w = 61–66 %), PVC (w = 33–38 %)	Na^+, –2.15	FIM	–	0.1	54.3	–		[29]
K^+-82	**K^+-82** ($w \approx$ 1 %), PVC (w = 33–38 %), DOS (w = 61–66 %)	Na^+, –2.66	FIM	–	0.1	50.0	–		[29]
	K^+-82 ($w \approx$ 1 %), KTPB (x_i < 100 %),	Na^+, –3.05	FIM	–	0.1	53.5	–		[29]

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	DOS (w = 61–66 %), PVC (w = 33–38 %)								
K$^+$-83	**K$^+$-83** ($w \approx 1$ %), PVC (w = 33–38 %), DOS (w = 61–66 %)	Na^+, –2.32	FIM	–	0.1	54.2	–		[29]
	K$^+$-83 ($w \approx 1$ %), DOS (w = 61–66 %), KTPB (x_i < 100 %), PVC (w = 33–38 %)	Na^+, –2.19	FIM	–	0.1	50.0	–		[29]
	K$^+$-83 ($w \approx 1$ %), PVC (w = 33–38 %), DOS (w = 61–66 %), KTpClPB (x_i < 100 %)	Na^+, –1.76	FIM	–	0.1	52.5	–		[29]
K$^+$-84	**K$^+$-84** ($w \approx 1$ %), PVC (w = 33–38 %), KTpClPB or KTPB (x_i < 100 %), DOS (w = 61–66 %)	Na^+, –2.25	FIM	–	0.1	53.6	–		[29]
K$^+$-85	**K$^+$-85** ($w \approx 1$ %), PVC (w = 33–38 %), DOS (w = 61–66 %), KTpClPB or KTPB (x_i < 100 %)	Na^+, –2.25	FIM	–	0.1	48.7	–		[29]
K$^+$-86	**K$^+$-87** ($w \approx 1$ %), DOS (w = 61–66 %), PVC (w = 33–38 %), KTpClPB (x_i = 100 %)	Na^+, –2.16	FIM	–	0.1	52.8	–		[29]
K$^+$-87	**K$^+$-87** ($w \approx 1$ %), DOS (w = 61–66 %), PVC (w = 33–38 %)	Na^+, –1.23	FIM	–	0.1	51.5	–		[29]
K$^+$-88	**K$^+$-88** ($w \approx 1$ %), DOS (w = 61–66 %), PVC (w = 33–38 %)	Na^+, –1.40	FIM	–	0.1	52.5	–		[29]
K$^+$-89	**K$^+$-89** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.9; Na^+, –3.5; Rb^+, –0.7; Cs^+, –2.2; NH_4^+, –1.8; Mg^{2+}, –4.0; Ca^{2+}, –3.6	MSM	–	–	–	–	r.o.o.g.	[30]
K$^+$-90	**K$^+$-90** (w = 6.7 %), oNPOE (w = 63 %),	Li^+, –2.4; Na^+, –2.5; Rb^+, +1.2; Cs^+, +0.8;	MSM	–	–	–	–	r.o.o.g.	[30]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 30.3 %)	NH_4^+, –1.0; Mg^{2+}, –3.6; Ca^{2+}, –3.2							
K^+-91	**K^+-91** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –3.0; Na^+, –3.5; Rb^+, –0.9; Cs^+, –2.1; NH_4^+, –1.9; Mg^{2+}, –3.6; Ca^{2+}, –3.5	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-92	**K^+-92** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.4; Na^+, -2.5; Rb^+, +1.3; Cs^+, +1.5; NH_4^+, –1.0; Mg^{2+}, –3.8; Ca^{2+}, –3.5	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-93	**K^+-93** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.5; Na^+, –2.2; Rb^+, +1.0; Cs^+, +2.3; NH_4^+, –1.0; Mg^{2+}, –3.4; Ca^{2+}, –3.3	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-94	**K^+-94** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –3.0; Na^+, –3.6; Rb^+, –1.0; Cs^+, –1.9; NH_4^+, –2.0; Mg^{2+}, –3.8; Ca^{2+}, –3.8	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-95	**K^+-95** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.7; Na^+, –3.6; Rb^+, –0.9; Cs^+, –2.2; NH_4^+, –1.8; Mg^{2+}, –3.9; Ca^{2+}, –3.6	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-96	**K^+-96** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.8; Na^+, –3.7; Rb^+, –1.0; Cs^+, –2.2; NH_4^+, –1.8; Mg^{2+}, –3.9; Ca^{2+}, –3.6	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-97	**K^+-97** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.4; Na^+, –2.5; Rb^+, +1.3; Cs^+, +0.9; NH_4^+, –1.0; Mg^{2+}, –3.8; Ca^{2+}, –3.5	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-98	**K^+-98** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.8; Na^+, –3.5; Rb^+, –0.8; Cs^+, –2.2; NH_4^+, –1.8; Mg^{2+}, –3.8; Ca^{2+}, –3.6	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-99	**K^+-99** (w = 6.7 %),	Li^+, –2.5; Na^+, –2.5;	MSM	–	–	–	–	r.o.o.g.	[30]

Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 63 %), PVC (w = 30.3 %)	Rb^+, +1.2; Cs^+, +1.4; NH_4^+, –1.1; Mg^{2+}, –3.5; Ca^{2+}, –3.1							
K^+-100	**K^+-100** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.2; Na^+, –3.5; Rb^+, –0.8; Cs^+, –2.0; NH_4^+, –1.9; Mg^{2+}, –3.3; Ca^{2+}, –3.2	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-101	**K^+-101** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.4; Na^+, –2.7; Rb^+, –0.8; Cs^+, –1.4; NH_4^+, –1.7; Mg^{2+}, –3.5; Ca^{2+}, –2.7	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-102	**K^+-102** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.2; Na^+, –2.6; Rb^+, +0.8; Cs^+, +0.8; NH_4^+, –1.2; Mg^{2+}, –4.0; Ca^{2+}, –4.1	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-103	**K^+-103** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.3; Na^+, –3.0; Rb^+, –1.2; Cs^+, –1.7; NH_4^+, –1.9; Mg^{2+}, –3.4; Ca^{2+}, –2.7	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-104	**K^+-104** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.4; Na^+, –2.2; Rb^+, +0.5; Cs^+, +1.1; NH_4^+, –1.4; Mg^{2+}, –4.0; Ca^{2+}, –3.8	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-105	**K^+-105** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.6; Na^+, –3.1; Rb^+, –1.1; Cs^+, –2.0; NH_4^+, –1.9; Mg^{2+}, –3.6; Ca^{2+}, –2.7	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-106	**K^+-106** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.2; Na^+, –3.3; Rb^+, –0.9; Cs^+, –2.2; NH_4^+, –2.0; Mg^{2+}, –3.3; Ca^{2+}, –3.4	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-107	**K^+-107** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.1; Na^+, –2.6; Rb^+, +1.0; Cs^+, +0.5; NH_4^+, –1.3; Mg^{2+}, –3.6; Ca^{2+}, –3.0	MSM	–	–	–	–	r.o.o.g.	[30]

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Table 4: K^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{K^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
K^+-108	**K^+-108** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.2; Na^+, –2.1; Rb^+, +0.8; Cs^+, +1.3; NH_4^+, –1.3; Mg^{2+}, –3.7; Ca^{2+}, –3.3	MSM	–	–	–	–	r.o.o.g.	[30]
K^+-109	**K^+-109** (w = 6.7 %), oNPOE (w = 63 %), PVC (w = 30.3 %)	Li^+, –2.9; Na^+, –2.1; Rb^+, +0.7; Cs^+, +1.3; NH_4^+, –1.1; Mg^{2+}, –3.5; Ca^{2+}, –3.9	MSM	–	–	–	–	r.o.o.g.	[30]

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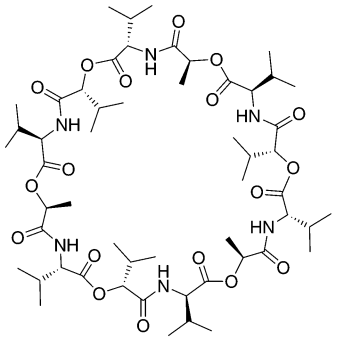
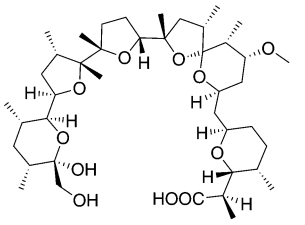
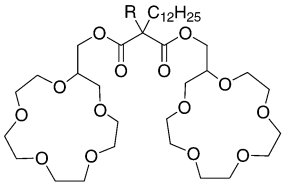
Table 4: K^+-Selective Electrodes (*Continued*)



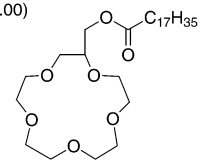
K^+-1 (valinomycin, M_r = 1111.33)



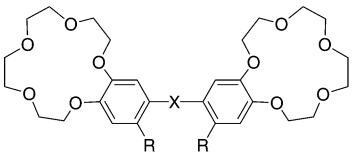
K^+-2 (nigericin, M_r = 739.00)



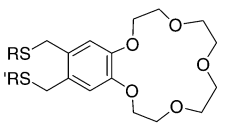
K^+-5 (M_r = 750.96): R=Me
K^+-11 (M_r = 736.94): R=H



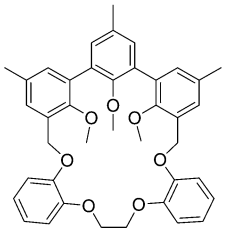
K^+-3 (M_r = 516.76)



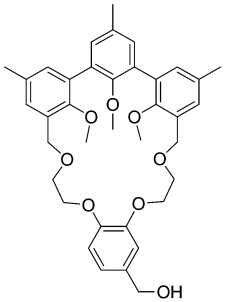
K^+-4 (M_r = 720.81): X = -$CH_2OCO(CH_2)_5COOCH_2$-, R = H
K^+-6 (M_r = 578.62): X = -N=N(O)-, R = H
K^+-7 (M_r = 650.74): X = -$COCH_2SCH_2CO$-, R = H
K^+-8 (BME 44, M_r = 967.07): X = -$NHCOOCH_2C(CH_3)(C_{12}H_{25})CH_2OCONH$-, R = NO_2
K^+-34 (M_r = 562.61): X = -CO- , R=H
K^+-35 (M_r = 561.63): X = -CH=N- , R=H
K^+-36 (M_r = 563.64): X = -CH_2NH- , R=H
K^+-63 (M_r = 810.80): X= -$CH_2OCO(CH_2)_5COOCH_2$-, R=NO_2
K^+-64 (M_r = 756.76): X = -$CH_2(OCH_2CH_2)_2OCH_2$- , R=H
K^+-65 (M_r = 666.76): X = -$CH_2(OCH_2CH_2)_2OCH_2$- , R=NO_2



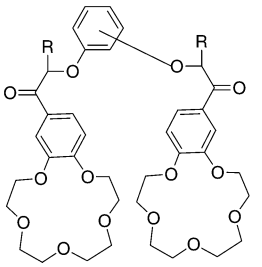
K^+-33 (M_r = 612.80): R = 2-Naphthyl-



K^+-9 (M_r = 632.75)



K^+-10 (M_r = 614.73)



K^+-12 (M_r = 726.77): R =H , *m*-
K^+-13 (M_r = 726.77): R =H , *p*-
K^+-14 (M_r = 754.83): R =CH_3 , *o*-
K^+-15 (M_r = 754.83): R =CH_3 , *p*-

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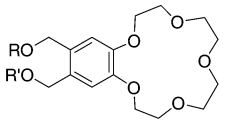
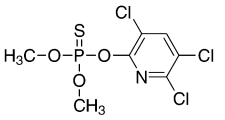
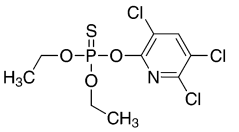
Table 4: K^+-Selective Electrodes (*Continued*)



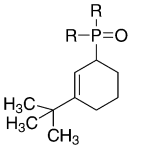
K^+-16 (M_r = 412.44): R =R'= $COCH_3$
K^+-17 (M_r = 524.66): R =R'= $CO(CH_2)_4CH_3$
K^+-18 (M_r = 692.97): R =R'= $CO(CH_2)_{10}CH_3$
K^+-19 (M_r = 833.24): R =R'= $CO(CH_2)_{15}CH_3$
K^+-20 (M_r = 536.58): R =R'= COC_6H_5
K^+-21 (M_r = 564.63): R =R'= $COCH_2C_6H_5$
K^+-22 (M_r = 596.63): R =R'= $COCH_2OC_6H_5$
K^+-23 (M_r = 538.55): R =R'= CO(3-Pyridyl)
K^+-24 (M_r = 752.42): R =R'= CO(Ferrocenyl)
K^+-25 (M_r = 540.39): R = H, R'= CO(Ferrocenyl)
K^+-26 (M_r = 384.47): R =R'= CH_2CH_3
K^+-27 (M_r = 665.00): R =R'= $(CH_2)_{11}CH_3$
K^+-28 (M_r = 480.56): R =R'= C_6H_5
K^+-29 (M_r = 570.55): R =R'= 4-Nitrophenyl-
K^+-30 (M_r = 632.75): R =R'= 2-Biphenyl-
K^+-31 (M_r = 580.68): R =R'= 1-Naphthyl-
K^+-32 (M_r = 580.68): R =R'= 2-Naphthyl-



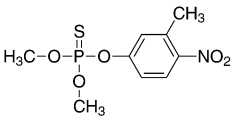
K^+-37 (M_r = 322.53)



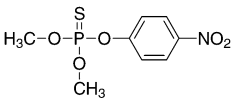
K^+-38 (M_r = 350.58)



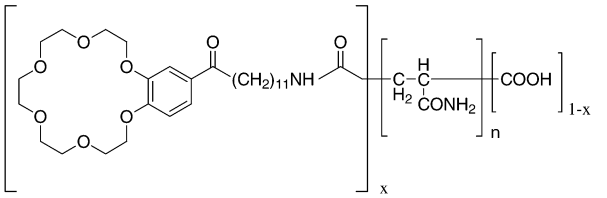
K^+-41 (M_r = 298.45): R = $-C_4H_9$
K^+-42 (M_r = 407.32): R = $-C_6H_4Cl$
K^+-43 (M_r = 338.43): R = $-C_6H_5$
K^+-44 (M_r = 366.48): R = $-C_6H_4CH_3$



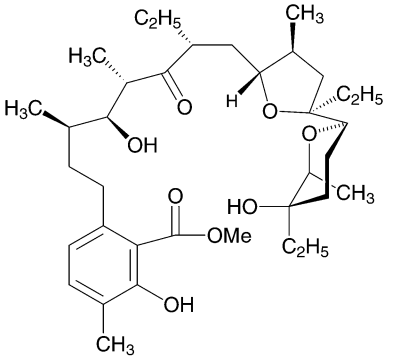
K^+-39 (M_r = 277.23)



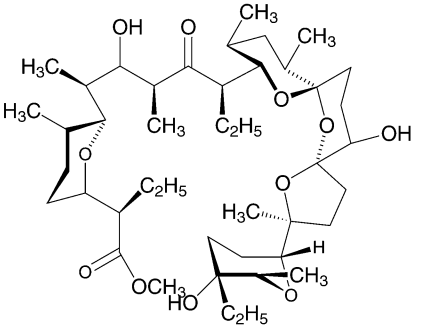
K^+-40 (M_r = 263.20)



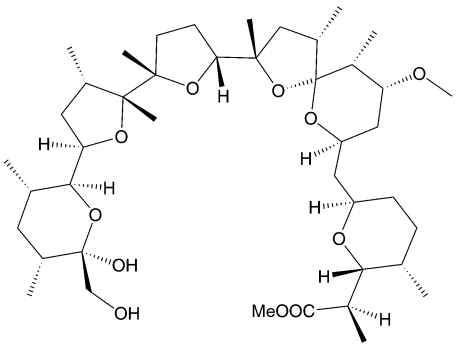
K^+-45 (x = 0.2)
K^+-46 (x = 0.7)



K^+-47 ((Lasalocid methyl ester, M_r = 618.85)

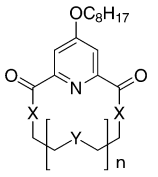


K^+-48 (Salinomycin methyl ester, M_r = 767.05)

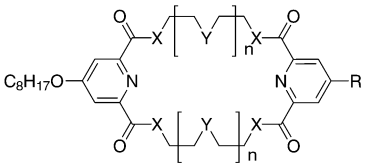


K^+-49 (M_r = 753.02) (Nigericin methyl ester)

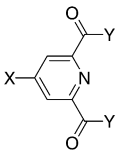
Table 4: K^+-Selective Electrodes (*Continued*)



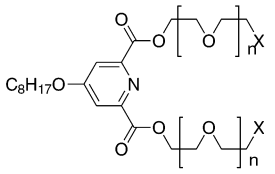
K^+-50 (M_r = 441.60): X=O, Y=S, n=2
K^+-51 (M_r = 501.71): X=O, Y=S, n=3
K^+-52 (M_r = 485.65): X=S, Y=O, n=3



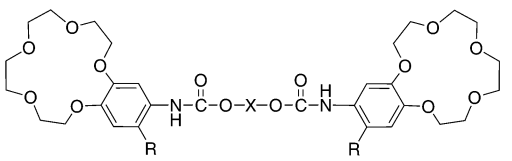
K^+-53 (M_r = 602.64): X=O, Y=O, n=1, R=H
K^+-54 (M_r = 690.74): X=O, Y=O, n=2, R=H
K^+-55 (M_r = 883.20): X=O, Y=S, n=2, R=OC_8H_{17}
K^+-56 (M_r =1003.43): X=O, Y=S, n=3, R=OC_8H_{17}
K^+-57 (M_r = 883.20): X=S, Y=O, n=2, R=OC_8H_{17}



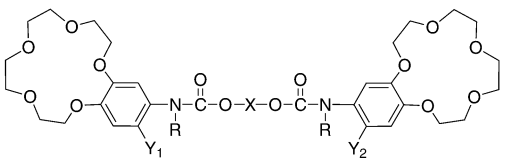
K^+-58 (M_r = 295.33): X=OC_8H_{17}, Y=OH
K^+-59 (M_r = 323.39): X=OC_8H_{17}, Y=OMe



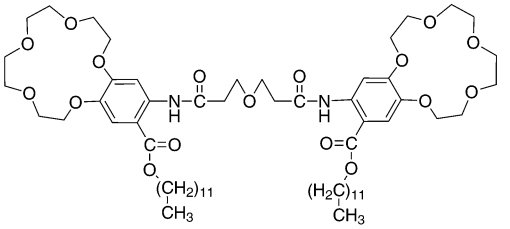
K^+-60 (M_r = 383.44) n=0, X=OH
K^+-61 (M_r = 471.55) n=1, X=OH
K^+-62 (M_r = 411.49) n=0, X=OMe



K^+-66 (BME 15, M_r = 830.81): X = -$CH_2CH_2SCH_2CH_2$-, R = NO_2
K^+-67 (BME 171, M_r = 995.13): X = -$CH_2(CH_2)_{16}CH_2$-, R = NO_2
K^+-68 (BME 54, M_r = 812.78): X = -$CH_2C(CH_3)_2CH_2$-, R = NO_2
K^+-69 (BME 02/85, M_r = 1023.18): X = -$CH_2C(CH_3)((CH_2)_{15}$-$CH_3)CH_2$-, R = NO_2



K^+-70 (BME 107, M_r = 785.82): R =H, Y_1=NO_2, Y_2=H, X= -$CH_2CH_2SCH_2CH_2$-
K^+-71 (BME 19-Me, M_r = 858.87): R =CH_3, Y_1=NO_2, Y_2=NO_2, X= -$CH_2CH_2SCH_2CH_2$-
K^+-72 (BME 40, M_r = 740.82): R =H, Y_1=H, Y_2=H, X= -$CH_2CH_2SCH_2CH_2$-



K^+-73 (BME 137, M_r = 1117.42)

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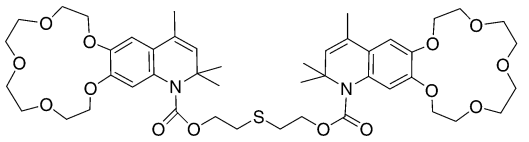
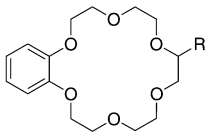
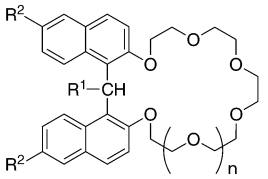
Table 4: K^+-Selective Electrodes (*Continued*)

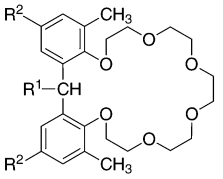


K^+-74 (BME 139, M_r = 901.08)



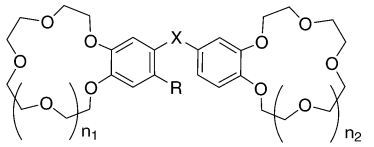
K^+-75 (M_r = 312.36): R = H
K^+-76 (M_r = 342.39): R = CH_2OH
K^+-77 (M_r = 356.41): R = CH_2OCH_3
K^+-78 (M_r = 400.47): R = $CH_2OCH_2CH_2OCH_3$
K^+-79 (M_r = 444.52): R = $CH_2O(CH_2CH_2O)_2CH_3$
K^+-80 (M_r = 488.57): R = $CH_2O(CH_2CH_2O)_3CH_3$





K^+-87 (M_r = 584.75): R^1 = Naphthyl, R^2= CH_3
K^+-88 (M_r = 506.64): R^1 = Phenyl, R^2= H

K^+-81 (M_r = 502.61): R^1 = H, R^2= H, n =1
K^+-82 (M_r = 718.97): R^1 = 2-CH_3-5-CH_3-C_6H_4, R^2= $C(CH_3)_3$, n =1
K^+-83 (M_r = 781.00): R^1 = 3-OCH_3-4-OCH_3-5-OCH_3-C_6H_3, R^2= $C(CH_3)_3$, n =1
K^+-84 (M_r = 803.86): R^1 = 2-Cl-6-Cl-C_6H_4, R^2= $C(CH_3)_3$, n =2
K^+-85 (M_r = 825.05): R^1 = 3-OCH_3-4-OCH_3-5-OCH_3-C_6H_3, R^2= $C(CH_3)_3$, n =2
K^+-86 (M_r = 759.81): R^1 = 2-Cl-6-Cl-C_6H_4, R^2= $C(CH_3)_3$, n =1



K^+-89 (M_r = 592.68): n_1 = n_2 = 1, X= $CH(OH)CH_2CH_2$, R=H
K^+-90 (M_r = 636.74): n_1 = 2 , n_2 = 1, X= $CH(OH)CH_2CH_2$, R=H
K^+-91 (M_r = 576.68): n_1 = n_2 = 1, X= $(CH_2)_3$, R=H
K^+-92 (M_r = 620.74): n_1 = 2 , n_2 = 1, X= $(CH_2)_3$, R=H
K^+-93 (M_r = 664.79): n_1 = n_2 = 2, X= $(CH_2)_3$, R=H
K^+-94 (M_r = 704.90): n_1 = n_2 = 1, X= CH(O-*n*-C_8H_{17})CH_2CH_2 , R=H
K^+-95 (M_r =761.00): n_1 = n_2 = 1, X= CH(O-*n*-$C_{12}H_{25}$)CH_2CH_2 , R=H
K^+-96 (M_r = 817.11): n_1 = n_2 = 1, X= CH(O-*n*-$C_{16}H_{33}$)CH_2CH_2 , R=H
K^+-97 (M_r = 748.95): n_1 = 2 , n_2 = 1, X= CH(O-*n*-C_8H_{17})CH_2CH_2 , R=H
K^+-98 (M_r = 604.74): n_1 = n_2 = 1, X= $(CH_2)_3$, R=C_2H_5
K^+-99 (M_r = 648.79): n_1 = 2 , n_2 = 1, X= $(CH_2)_3$, R=C_2H_5
K^+-100 (M_r = 688.90): n_1 = n_2 = 1, X= $(CH_2)_3$, R=C_8H_{17}
K^+-101 (M_r = 632.70): n_1 = n_2 = 1, X= $CO(CH_2)_3CO$, R=H
K^+-102 (M_r = 676.76): n_1 = 1 , n_2 = 2, X= $CO(CH_2)_3CO$, R=H
K^+-103 (M_r = 720.81): n_1 = n_2 = 2, X= $CO(CH_2)_3CO$, R=H
K^+-104 (M_r = 833.02): n_1 = n_2 = 2, X= $CO(CH_2)_{11}CO$, R=H
K^+-105 (M_r = 604.74): n_1 = n_2 = 1, X= $(CH_2)_5$, R=H
K^+-106 (M_r = 716.95): n_1 = n_2 = 1, X= $(CH_2)_{13}$, R=H
K^+-107 (M_r = 648.79): n_1 = 1 , n_2 = 2, X= $(CH_2)_5$, R=H
K^+-108 (M_r = 692.84): n_1 = n_2 = 2, X= $(CH_2)_5$, R=H
K^+-109 (M_r = 805.06): n_1 = n_2 = 2, X= $(CH_2)_{13}$, R=H

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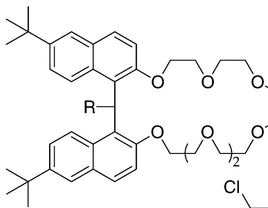
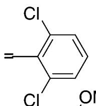
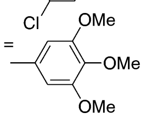
Table 5: Rb^{+}-Selective Electrodes (*Continued*)

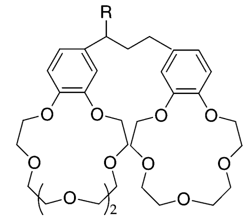


Rb^{+}-1 (M_r = 817.89): R =

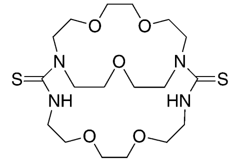


Rb^{+}-2 (M_r = 839.08): R =

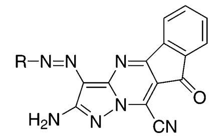




Rb^{+}-3 (M_r = 636.80): R = H
Rb^{+}-4 (M_r = 765.01): R = OC_8H_{17}



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

Table 6: Cs^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{Cs^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Cs^+-1	**Cs^+-1** (w = 3.2–3.8 %), oNPOE ($w \approx$ 64 %), PVC ($w \approx$ 32 %)	Na^+, –3.0; K^+, –1.0; Rb^+, –1.0; NH_4^+, –2.0	FIM	–	–	51	10^{-3} –10^{-1}	25 ± 0.1°C; CWE	[1]
Cs^+-2	**Cs^+-2** (w = 1.4 %), oNPOE ($w \approx$ 65 %), KTpClPB (x_i = 50 %), PVC ($w \approx$ 33 %)	Li^+, –2.60; Na^+, –2.23; K^+, –0.77; Rb^+, –0.51; Mg^{2+}, –3.03; Ca^{2+}, –2.80; Sr^{2+}, –2.22	SSM	0.1	0.1	–	–	CWE	[2]
		Li^+, –2.80; Na^+, –2.41; K^+, –0.72; Rb^+, –0.52; Ca^{2+}, –3.05; Sr^{2+}, –2.18	SSM ($E_A = E_B$)	–	0.1			14 mM NaCl background	
	Cs^+-2 (w = 1.4 %), o-nitrophenyl pentyl ether ($w \approx$ 65 %), KTpClPB (x_i = 50 %), PVC ($w \approx$ 33 %)	Li^+, <–3.70; Na^+, –2.70; K^+, –0.46; Rb^+, 0.00; Mg^{2+}, –3.70; Ca^{2+}, –3.66; Sr^{2+}, <–3.70	SSM	0.1	0.1	–	–	CWE;	[2]
		Li^+, –3.37; Na^+, –2.60; K^+, –0.46; Rb^+, 0.00; Ca^{2+}, <–3.70; Sr^{2+}, –3.48	SSM ($E_A = E_B$)	–	0.1			14 mM NaCl background	
Cs^+-3	**Cs^+-3** (w = 1.5 %), oNPOE (w = 65 %), KTpClPB (x_i = 22 %), PVC (w = 33 %)	Li^+, –2.4; Na^+, –2.0; K^+, –0.9; Rb^+, –0.5; H^+, +0.7; Mg^{2+}, –3.2; Ca^{2+}, –2.9; Sr^{2+}, –2.1	SSM	0.1	0.1; H^+, 0.1, 0.002	51	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
	Cs^+-3 (w = 1.48 %), oNPOE (w = 64.35 %), KTpClPB (x_i = 22 %), TOPO (w = 0.99 %), PVC (w = 32.67 %)	Li^+, –0.0; Na^+, –0.5; K^+, –0.5; Rb^+, –0.5; H^+, +1.6; Mg^{2+}, –0.1; Ca^{2+}, +0.5; Sr^{2+}, –0.1	SSM	0.1	0.1; H^+, 0.1, 0.002	29	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
	Cs^+-3 (w = 1.5 %), o-nitrophenyl pentyl ether (w = 65 %), KTpClPB (x_i = 21.7 %), PVC (w = 33 %)	Li^+, –0.6; Na^+, –0.6; K^+, –0.5; Rb^+, –0.4; H^+, +1.8; Mg^{2+}, –0.9; Ca^{2+}, –0.8; Sr^{2+}, –0.8	SSM	0.1	0.1; H^+, 0.1, 0.002	23	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
	Cs^+-3 (w = 1.48 %), PVC (w = 32.67 %), KTpClPB (x_i = 22 %), TOPO (w = 0.99 %), o-nitrophenyl pentyl ether (w = 64.3 %)	Li^+, –0.2; Na^+, –0.1; K^+, –0.3; Rb^+, –0.1; H^+, +6.5; Mg^{2+}, +0.4; Ca^{2+}, +0.6; Sr^{2+}, +0.2	SSM	0.1	0.1; H^+, 0.1, 0.002	25	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
	Cs^+-3 (w = 1.44 %), oNPOE (w = 62.44 %), KTpClPB (x_i = 200 %), PVC (w = 31.70 %)	Li^+, –3.0; Na^+, –2.5; K^+, –1.3; Rb^+, –0.6; H^+, –3.3; Mg^{2+}, –3.1; Ca^{2+}, –2.8; Sr^{2+}, –2.7	SSM	0.1	0.1; H^+, 0.1, 0.002	55	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]

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Table 6: Cs^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Cs^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Cs^+-3 (w = 1.43 %), oNPOE (w = 61.84 %), KTpClPB (x_i = 200 %), TOPO (w = 0.95 %), PVC (w = 31.40 %)	Li^+, –3.0; Na^+, –2.6; K^+, –1.3; Rb^+, –0.6; H^+, –2.5; Mg^{2+}, –3.1; Ca^{2+}, –2.9; Sr^{2+}, –2.9	SSM	0.1	0.1; H^+, 0.1, 0.002	55	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
	Cs^+-3 (w = 1.51 %), oNPOE (w = 65.32 %), PVC (w = 33.17 %)	Li^+, –0.3; Na^+, –0.5; K^+, –0.3; Rb^+, –0.2; H^+, +1.2; Mg^{2+}, –0.2; Ca^{2+}, –0.7; Sr^{2+}, –0.1	SSM	0.1	0.1; H^+, 0.1, 0.002	6.6	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
	Cs^+-3 (w = 1.49 %), oNPOE (w = 64.68 %), TOPO (w = 0.99 %), PVC (w = 32.84 %)	Li^+, –0.5; Na^+, –0.5; K^+, –0.5; Rb^+, –0.1; Mg^{2+}, –0.1; Ca^{2+}, +0.5; Sr^{2+}, +0.2	SSM	0.1	0.1	32	–	CWE; 14 mM NaCl background; r.o.o.g.	[3]
Cs^+-4	**Cs^+-4** (w = 0.4 %), oNPOE (w = 66.4 %), PVC (w = 33.2 %)	Li^+, –3.29; Na^+, –2.13; K^+, –0.66; Rb^+, –1.24; Mg^{2+}, –2.80; Ca^{2+}, –3.56	SSM	0.1	0.1	54.0	–		[4]
		H^+, –1.95	FIM	–	0.01				
		NH_4^+, –1.87		–	0.1				
	Cs^+-4 ($w \approx$ 0.4 %), oNPOE ($w \approx$ 66.3 %), KTpClPB (x_i = 62 %), PVC ($w \approx$ 33.2 %)	Li^+, –3.25; Na^+, –2.05; K^+, –0.79; Rb^+, –0.99; Mg^{2+}, –3.02; Ca^{2+}, –3.52	SSM	0.1	0.1	55.7	–		[4]
		H^+, –3.04	FIM	–	0.01				
		NH_4^+, –2.06		–	0.1				
Cs^+-5	**Cs^+-5** (w = 0.4 %), oNPOE (w = 66.4 %), PVC (w = 33.2 %)	Li^+, –4.20; Na^+, –3.87; K^+, –2.68; Rb^+, –1.85; Mg^{2+}, –4.04; Ca^{2+}, –3.39	SSM	0.1	0.1	51.3	–		[4]
		H^+, –3.71	FIM	–	0.01				
		NH_4^+, –2.83		–	0.1				
	Cs^+-5 ($w \approx$ 0.4 %), oNPOE ($w \approx$ 66.4 %), KTpClPB (x_i = 10 %), PVC ($w \approx$ 33.2 %)	Li^+, –4.45; Na^+, –3.73; K^+, –2.53; Rb^+, –1.52; Mg^{2+}, –3.92; Ca^{2+}, –3.97	SSM	0.1	0.1	55.3	–		[4]
		H^+, –2.70	FIM	–	0.01				
		NH_4^+, –2.75		–	0.1				
	Cs^+-5 ($w \approx$ 0.4 %), oNPOE ($w \approx$ 66.4 %), KTpClPB (x_i = 25 %),	Li^+, –3.92; Na^+, –3.57; K^+, –2.49; Rb^+, –1.78; Mg^{2+}, –3.85; Ca^{2+}, –3.44	SSM	0.1	0.1	54.0	–		[4]

Table 6: Cs^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Cs^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC ($w \approx 33.2$ %)	H^+, –3.02	FIM	–	0.01				
		NH_4^+, –2.40		–	0.1				
Cs⁺-6	**Cs⁺-6** (w = 6.7 %), oNPOE (w = 63.0 %), PVC (w = 30.3 %)	K^+, –2.3	MSM	–	–	–	–		[5]
Cs⁺-7	**Cs⁺-7** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 5.8 %), PVC (w = 32.0 %)	Li^+, –1.42; Na^+, –0.78; K^+, +0.04; Rb^+, +0.28; NH_4^+, –0.66; Mg^{2+}, –2.27; Ca^{2+}, –2.21; Sr^{2+}, –2.09; Ba^{2+}, –2.40	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-8	**Cs⁺-8** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 6.4 %), PVC (w = 32.0 %)	Li^+, –2.22; Na^+, –0.33; K^+, –0.39; Rb^+, +0.17; NH_4^+, –0.91; Mg^{2+}, –2.46; Ca^{2+}, –0.91; Sr^{2+}, –0.95; Ba^{2+}, –1.52	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-9	**Cs⁺-9** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 7.0 %), PVC (w = 32.0 %)	Li^+, –2.40; Na^+, –1.38; K^+, –0.26; Rb^+, +0.26; NH_4^+, –1.02; Mg^{2+}, –2.92; Ca^{2+}, –3.04; Sr^{2+}, –2.92; Ba^{2+}, –2.77	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-10	**Cs⁺-10** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 6.4 %), PVC (w = 32.0 %)	Li^+, –2.15; Na^+, –2.40; K^+, –0.97; Rb^+, +0.43; NH_4^+, –1.11; Mg^{2+}, –4; Ca^{2+}, –3.04; Sr^{2+}, –5; Ba^{2+}, –5	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-11	**Cs⁺-11** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 7.0 %), PVC (w = 32.0 %)	Li^+, –2.15; Na^+, –1.17; K^+, –0.33; Rb^+, +0.10; NH_4^+, –0.98; Mg^{2+}, –3.04; Ca^{2+}, –3.15; Sr^{2+}, –3.52; Ba^{2+}, –3.10	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-12	**Cs⁺-12** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 6.4 %), PVC (w = 32.0 %)	Li^+, –1.55; Na^+, –0.86; K^+, +0.16; Rb^+, +0.05; NH_4^+, –0.60; Mg^{2+}, –2.29; Ca^{2+}, –2.49; Sr^{2+}, –2.36; Ba^{2+}, –2.06	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-13	**Cs⁺-13** (w = 4.5 %), DDP (w = 63.2 %), KTpClPB (x_i = 7.0 %), PVC (w = 32.0 %)	Li^+, –1.80; Na^+, –0.98; K^+, –0.04; Rb^+, –0.01; NH_4^+, –0.65; Mg^{2+}, –1.82; Ca^{2+}, –2.21; Sr^{2+}, –1.91; Ba^{2+}, –2.04	SSM	0.1	0.1	52–58	10^{-4}–10^{-1}		[6]
Cs⁺-14	**Cs⁺-14** (w = 0.5 %), oNPOE (w = 67.1 %), KTpClPB (x_i = 36 %), PVC (w = 32.2 %)	Li^+, –3.54; Na^+, –3.10; K^+, –2.05; Rb^+, –0.91; NH_4^+, –1.96; Mg^{2+}, –5.4; Ca^{2+}, –5.2; Sr^{2+}, –5.2; Ba^{2+}, –5.0	FIM	–	0.1	60.9	–	$c_{dl} = 10^{-6.0}$ M	[7]
		H^+, –3.86			1				

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Table 6: Cs^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Cs^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Cs^+-14 (w = 0.5 %), DBS (w = 67.1 %), KTpClPB (x_i = 36 %), PVC (w = 32.2 %)	Li^+, –3.51; Na^+, –2.95; K^+, –2.06; Rb^+, –0.90; NH_4^+, –1.91; Mg^{2+}, –5.1; Ca^{2+}, –5.43; Sr^{2+}, –5.37; Ba^{2+}, –5.42	FIM	–	0.1	61.1	–	$c_{dl} = 10^{-6.1}$ M	[7]
		H^+, –3.35			1				
Cs^+-15	**Cs^+-15** (w = 0.5 %), oNPOE (w = 67.1 %), KTpClPB (x_i = 38.8 %), PVC (w = 32.2 %)	Li^+, –4.81; Na^+, –4.46; K^+, –2.18; Rb^+, –0.89; NH_4^+, –1.98; Mg^{2+}, –5.5; Ca^{2+}, –5.4; Sr^{2+}, –5.3; Ba^{2+}, –5.2	FIM	–	0.1	58.2	–	$c_{dl} = 10^{-6.3}$ M	[7]
		H^+, –4.32			1				
	Cs^+-15 (w = 0.5 %), DBS (w = 67.1 %), KTpClPB (x_i = 38.8 %), PVC (w = 32.2 %)	Li^+, –5.03; Na^+, –4.36; K^+, –2.14; Rb^+, –0.81; NH_4^+, –1.86; Mg^{2+}, –5.32; Ca^{2+}, –5.56; Sr^{2+}, –5.5; Ba^{2+}, –5.1	FIM	–	0.1	58.2	–	$c_{dl} = 10^{-6.33}$ M	[7]
		H^+, –4.32			1				
	Cs^+-15 (w = 1 %), BEHS (w = 65.5 %), KTFPB (x_i = 50 %), PVC (w = 33 %)	Na^+, –3.3 K^+, –2.0 NH_4^+, –1.9 Ca^{2+}, –3.3	FIM	–	0.1	57 ± 2† 40 ± 2†† 39 ± 2††† 57 ± 2††††	–	ISFET; pH = 4	[8]
Cs^+-16	**Cs^+-16** (w = 0.5 %), oNPOE (w = 67.1 %), KTpClPB (x_i = 38.8 %), PVC (w = 32.2 %)	Li^+, –3.81; Na^+, –2.47; K^+, –0.74; Rb^+, –0.15; NH_4^+, –0.82; Mg^{2+}, –5.0; Ca^{2+}, –4.8; Sr^{2+}, –4.7; Ba^{2+}, –4.6	FIM	–	0.1	58.2	–	$c_{dl} = 10^{-5.4}$ M	[7]
		H^+, –2.88			1				
	Cs^+-16 (w = 0.5 %), DBS (w = 67.1 %), KTpClPB (x_i = 38.8 %), PVC (w = 32.2 %)	Li^+, –2.98; Na^+, –2.09; K^+, –0.71; Rb^+, –0.1; NH_4^+, –0.76; Mg^{2+}, –4.60; Ca^{2+}, –4.6; Sr^{2+}, –4.7; Ba^{2+}, –4.5	FIM	–	0.1	60	–	$c_{dl} = 10^{-5.3}$ M	[7]
		H^+, –2.28			1				
Cs^+-17	**Cs^+-17** (w = 0.5 %), oNPOE (w = 67.1 %), KTpClPB (x_i = 38.8 %), PVC (w = 32.2 %)	Li^+, –2.22; Na^+, –1.43; K^+, –0.60; Rb^+, –0.33; NH_4^+, –1.01; Mg^{2+}, –3.92; Ca^{2+}, –3.5; Sr^{2+}, –3.5; Ba^{2+}, –3.28	FIM	–	0.1	54	–	$c_{dl} = 10^{-4.48}$ M	[7]
		H^+, –1.0			1				

† in 0.1 M Na^+.
†† in 0.1 M K^+.
††† in 0.1 M NH_4^+.
†††† in 0.1 M Ca^{2+}.

Table 6: Cs^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Cs^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Cs^+-17 (w = 0.5 %), DBS (w = 37.1 %), KTpClPB (x_i = 38.8 %), PVC (w = 32.2 %)	Li^+, –1.38; Na^+, –1.3; K^+, –0.5; Rb^+, –0.17; NH_4^+, –0.66; Mg^{2+}, –3.8; Ca^{2+}, –3.4; Sr^{2+}, –3.5; Ba^{2+}, –3.3	FIM	–	0.1	50	–	$c_{dl} = 10^{-4.6}$ M	[7]
		H^+, –1.0			1				
Cs^+-18	**Cs^+-18** (w = 1 %), BEHS (w = 65.5 %), KTFPB (x_i = 50 %), PVC (w = 33 %)	Na^+, –3.0 K^+, –1.9 NH_4^+, –1.9 Ca^{2+}, –3.1	FIM	–	0.1	57 ± 2† 40 ± 2†† 37 ± 2††† 60 ± 2††††	–	ISFET; pH = 4	[8]
	Cs^+-18 (w = 1 %), oNPOE (w = 65.5 %), KTFPB (x_i = 50 %), PVC (w = 33 %)	Na^+, –3.3 K^+, –1.9 NH_4^+, –1.9 Ca^{2+}, –3.3	FIM	–	0.1	59 ± 2† 40 ± 2†† 39 ± 2††† 58 ± 2††††	–	ISFET; pH = 4	[8]
Cs^+-19	**Cs^+-19** (w = 1 %), BEHS (w = 65.5 %), KTFPB (x_i = 50 %), PVC (w = 33 %)	Na^+, –3.3 K^+, –1.9 NH_4^+, –1.9 Ca^{2+}, –3.3	FIM	–	0.1	59 ± 2† 40 ± 2†† 39 ± 2††† 58 ± 2††††	–	ISFET; pH = 4	[8]
	Cs^+-19 (w = 1 %), oNPOE (w = 65.5 %), KTFPB (x_i = 50 %), PVC (w = 33 %)	Na^+, –3.3 K^+, –2.1 NH_4^+, –2.1 Ca^{2+}, –3.1	FIM	–	0.1	56 ± 2† 41 ± 2†† 42 ± 2††† 56 ± 2††††	–	ISFET; pH = 4	[8]
Cs^+-20	**Cs^+-20** (w = 0.66 %), oNPOE (w = 65.84 %), KTFPB (x_i = 16.4 %), PVC (w = 33.33 %)	Li^+, –3.00; Na^+, –2.38; K^+, –0.99; Rb^+, –0.47; NH_4^+, –1.40; H^+, –2.06; Be^{2+}, –3.62; Mg^{2+}, –4.03; Ca^{2+}, –3.44; Sr^{2+}, –3.10; Ba^{2+}, –2.88; Co^{2+}, –2.59; Ni^{2+}, –2.47; Cu^{2+}, –2.42; Cd^{2+}, –2.11; Hg^{2+}, –2.12; Pb^{2+}, –2.00	SSM	0.1	0.1	51.9	–	c_{dl} = $10^{-4.3}$ M; 25 °C	[9]
		Ag^+, +0.94		0.01	0.01				
Cs^+-21	**Cs^+-21** (w = 0.66 %), oNPOE (w = 65.84 %), KTFPB (x_i = 20.8 %), PVC (w = 33.33 %)	Li^+, –1.44; Na^+, –0.65; K^+, +0.04; Rb^+, –0.10; NH_4^+, –1.79; H^+, –0.45; Be^{2+}, –1.73; Mg^{2+}, –2.37; Ca^{2+}, –2.21;	SSM	0.1	0.1	48.6	–	c_{dl} = $10^{-4.4}$ M; 25 °C	[9]

† in 0.1 M Na^+.
†† in 0.1 M K^+.
††† in 0.1 M NH_4^+.
†††† in 0.1 M Ca^{2+}.

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Table 6: Cs^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$lgK_{Cs^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ba^{2+}, –1.64; Co^{2+}, –1.83; Ni^{2+}, –2.11; Cu^{2+}, –1.68; Cd^{2+}, –0.40; Hg^{2+}, +2.93; Pb^{2+}, –0.75							
		Ag^+, +1.13		0.01	0.01				
Cs^+-22	**Cs^+-22** (w = 0.66 %), oNPOE (w = 65.84 %), KTFPB (x_i = 20.6 %), PVC (w = 33.33 %)	Li^+, –2.27; Na^+, –1.94; K^+, –0.89; Rb^+, –0.39; NH_4^+, –0.99; H^+, –1.10; Be^{2+}, –3.17; Mg^{2+}, –2.77; Ca^{2+}, –2.70; Ba^{2+}, –2.51; Co^{2+}, –2.43; Ni^{2+}, –2.56; Cu^{2+}, –0.15; Cd^{2+}, –3.37; Hg^{2+}, +1.83; Pb^{2+}, –3.05	SSM	0.1	0.1	52.2	–	c_{dl} = $10^{-4.6}$ M; 25 °C	[9]
		Li^+, –1.8; Na^+, –1.2; K^+, –1.1; Rb^+, –0.2; NH_4^+, –0.8; H^+, –0.8; Ag^+, +0.47 (in table)	SSM	0.01	0.01	–	–	r.o.o.g.	
		Li^+, –1.1; Na^+, –0.6; K^+, –1.2; Rb^+, –0.2; NH_4^+, –0.7; H^+, –0.5; Ag^+, +0.5	SSM	0.001	0.001	–	–	r.o.o.g.	

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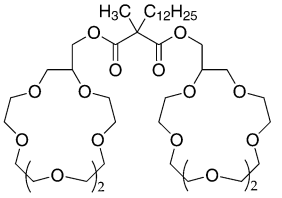
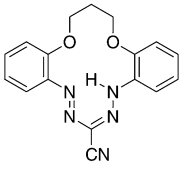
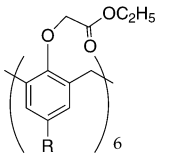


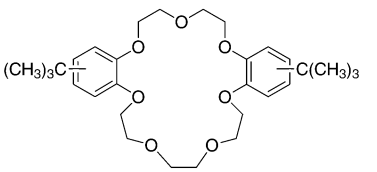
Cs^+-1 (M_r = 839.08)



Cs^+-3 (M_r = 321.34)

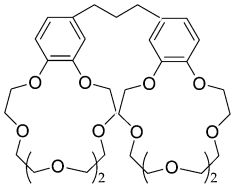


Cs^+-4 (M_r = 1489.95): R = *tert* -Bu
Cs^+-5 (M_r = 1333.68): R = H

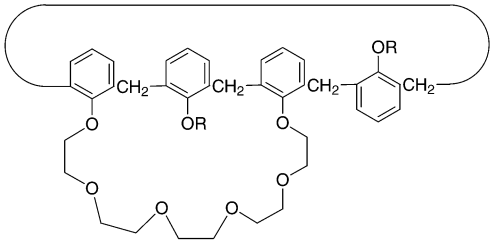


Cs^+-2 (M_r = 516.67)

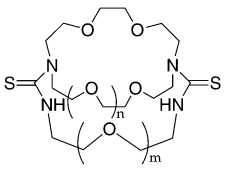
Table 6: Cs^+-Selective Electrodes (*Continued*)



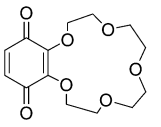
Cs^+-6 (M_r = 664.80)



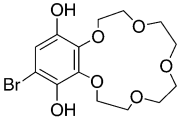
Cs^+-14 (M_r = 654.81): R = CH_3 (partial cone conformation)
Cs^+-16 (M_r = 710.9): R = $CH(CH_3)_2$ (partial cone conformation)



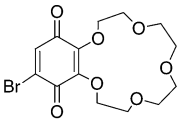
Cs^+-7 (M_r = 406.54): n = 0, m = 1
Cs^+-8 (M_r = 450.61): n = 1, m = 1
Cs^+-9 (M_r = 494.68): n = 1, m = 2
Cs^+-10 (M_r = 450.61): n = 0, m = 2
Cs^+-11 (M_r = 494.68): n = 0, m = 3
Cs^+-12 (M_r = 538.75): n = 1, m = 3
Cs^+-13 (M_r = 582.82): n = 1, m = 4



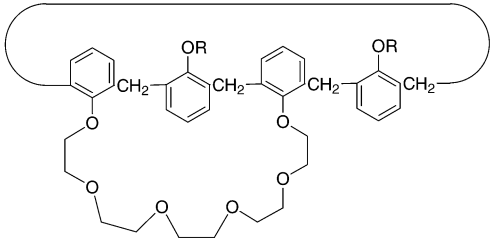
Cs^+-20 (M_r = 298.29)



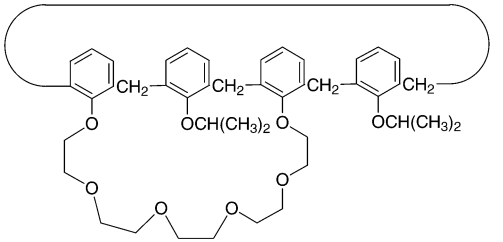
Cs^+-21 (M_r = 379.20)



Cs^+-22 (M_r = 377.19)



Cs^+-15 (M_r = 710.92): R = $CH(CH_3)_2$ (1,3 alternate conformation)
Cs^+-18 (M_r = 851.19): R = C_8H_{17} (1,3 alternate conformation)
Cs^+-19 (M_r = 1093.38): R = *o*-nitrophenyloctyl (1,3 alternate conformation)



Cs^+-17 (M_r = 710.92) (cone conformation)

Table 7: NH_4^+- Selective Electrodes

ionophore	membrane composition	$\lg K_{NH4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
NH_4^+-1	**NH_4^+-1** (w = 25 %), nujol (w = 50 %), octanol (w = 25 %)	Li^+, –3.66; Na^+, –2.57; K^+, –0.40; Rb^+, –0.60; Cs^+, –1.89; H^+, –2.14	SSM	–	–	N	10^{-5}–10^{-3}	–	[1]
	NH_4^+-1, PVC, tris(2-ethylhexyl) phosphate diphenyl ether (weight ratio not reported)	Na^+, –3.0; K^+, –1.0; Mg^{2+}, –4.7; Ca^{2+}, –4.3	FIM	–		55.5	10^{-6}–10^{-1}	–	[2]
	NH_4^+-1 (w = 1 %), DOA (w = 66.8 %), PVC (w = 32.2 %)	Na^+, –2.62; K^+, –0.89; Mg^{2+}, –3.87; Ca^{2+}, –2.62	SSM	0.01	0.01	57.5	–	t_{resp} = 30 s	[3]
		Na^+, –2.87; K^+, –0.96	FIM	–	Na^+, 1 K^+, 0.1				
	NH_4^+-1 (w = 1.9 %), DOA (w = 30.2 %), PVC (w = 34 %), VAGH (w = 34 %)	Na^+, –2.47; K^+, –0.82; Mg^{2+}, –3.60; Ca^{2+}, –2.73	SSM	0.01	0.01	55.5	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), DEA (w = 30.2 %), PVC (w = 67.9 %)	Na^+, –1.76; K^+, –0.92; Mg^{2+}, –3.20; Ca^{2+}, –2.06	SSM	0.01	0.01	55.5	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), oNPPE (w = 30.2 %), PVC (w = 67.9 %)	Na^+, –2.2; K^+, –0.82; Mg^{2+}, –3.54; Ca^{2+}, –2.49	SSM	0.01	0.01	47.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), DOPP (w = 30.2 %), PVC (w = 67.9 %)	Na^+, –1.84; K^+, –1.15; Mg^{2+}, –2.85; Ca^{2+}, –1.39	SSM	0.01	0.01	53.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), DOS (w = 30.2 %), PVC (w = 67.9 %)	Na^+, –2.28; K^+, –0.68; Mg^{2+}, –3.78; Ca^{2+}, –2.59	SSM	0.01	0.01	58.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), DBP (w = 30.2 %), PVC (w = 67.9 %)	Na^+, –1.96; K^+, –0.89; Mg^{2+}, –3.55; Ca^{2+}, –2.42	SSM	0.01	0.01	52.5	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), tripentyl phosphate (w = 30.2 %), PVC (w = 67.9 %)	Na^+, –1.59; K^+, –0.92; Mg^{2+}, –3.25; Ca^{2+}, –2.08	SSM	0.01	0.01	55.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 4.6 %), DOA (w = 29.4 %), PVC (w = 66 %)	Na^+, –2.63; K^+, –0.82; Mg^{2+}, –4.13; Ca^{2+}, –3.96	SSM	0.01	0.01	55.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 0.2 %), DOA (w = 30.7 %), PVC (w = 69.1 %)	Na^+, –2.51; K^+, –0.96; Mg^{2+}, –4.01; Ca^{2+}, –3.99	SSM	0.01	0.01	56.2	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
		Na^+, –1.85; K^+, –0.96;	FIM	–	Na^+, 1				

Table 7: NH_4^+- Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{NH_4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
		Mg^{2+}, Ca^{2+}, no interference			K^+, 0.1				
	NH_4^+-1 (w = 1.9 %), dinonyl adipate (w = 30.2 %), PVC (w = 67.9 %), KTpClPB (x_i = 67 %)	K^+, +0.30	SSM	0.01	0.01	53.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), dinonyl adipate (w = 30.2 %), PVC (w = 67.9 %), KTpClPB (x_i = 168 %)	K^+, +0.4	SSM	0.01	0.01	54.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1 (w = 1.9 %), DOA (w = 30.2 %), PVC (w = 67.9 %), KTpClPB (x_i = 235 %)	K^+, +0.34	SSM	0.01	0.01	53.0	–	t_{resp} = 30 s; $c_{dl} = 10^{-5}$ M	[3]
	NH_4^+-1, cellulose triacetate	Li^+, –4.7; Na^+, –2.9; K^+, –0.9; H^+, –4.3; $N(CH_3)_4^+$, –3.7; Mg^{2+}, –3.2; Ca^{2+}, –5.0	SSM	0.1	0.1	–	–	asymmetric membrane	[4]
	NH_4^+-1, hydroxylated cellulose triacetate	Li^+, –4.5; Na^+, –2.9; K^+, –0.9; H^+, –4.3; $N(CH_3)_4^+$, –3.7; Mg^{2+}, –3.2; Ca^{2+}, –4.8	SSM	0.1	0.1	–	–	asymmetric membrane	[4]
	NH_4^+-1, aminated cellulose triacetate	Li^+, –4.5; Na^+, –2.9; K^+, –0.9; H^+ –4.3; $N(CH_3)_4^+$, –4.2; Mg^{2+}, –3.2; Ca^{2+}, –4.9	SSM	0.1	0.1	–	–	asymmetric membrane	[4]
	NH_4^+-1 (w = 10 %), KTpClPB (x_i = 12 %), DBS (w = 86.5 %), PVC (w = 2.5 %)	Na^+, –2.7; K^+, –1.0; Mg^{2+}, no interference; Ca^{2+}, no interference	FIM	–	Na^+, 3.13 mM K^+, 200 μM	57.6 ± 1.1	10^{-5}–10^{-3}	minielectr.; $c_{dl} = 10^{-6}$ M; FIA	[5]
	NH_4^+-1 (w = 1 %), DOA (w = 66 %), polyurethane (w = 26.4 %), PVA (w = 6.6 %)	Li^+, –4.8; Na^+, –3.2; K^+, –1.2; $N(CH_3)_4^+$, –4.0; H^+, –4.4; Mg^{2+}, –4.7; Ca^{2+}, –4.7	SSM	–	–	48	–	PVA: poly-(vinylchloride/vinyl acetate/vinyl alchol); ISFET; t_{resp} < 10 s	[6]

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Table 7: NH_4^+- Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{NH_4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
	NH_4^+-1 (w = 1 %), DOA (w = 66 %), polyurethane (w = 26.4 %), PVA (w = 6.6 %)	Li^+, –4.1; Na^+, –3.1; K^+, –1.2; $N(CH_3)_4^+$, –3.9; H^+, –3.5; Mg^{2+}, –4.4; Ca^{2+}, –4.5	SSM	–	–	48	–	PVA: poly-(vinylchloride/vinyl acetate/vinyl alchol); ISFET; Membrane surface was covered with hydrophilic polyurethane.	[6]
	NH_4^+-1 (w = 1 %), DOA (w = 66 %), polyurethane (w = 26.4 %), PVA (w = 6.6 %)	Li^+, –4.8; Na^+, –3.2; K^+, –1.2; $N(CH_3)_4^+$, –4.0; H^+, –4.4; Mg^{2+}, –4.7; Ca^{2+}, –4.7	SSM	–	–	48	–	PVA: poly-(vinylchloride/vinyl acetate/vinyl alchol); ISFET; Membrane was covered with hydrophilic poly-urerthane loaded with polylysine.	[6]
	NH_4^+-1 (w = 1.9 %), KTpClPB (x_i = 33 %), DOS (w = 67 %), PVC ($w \approx$ 31 %)	Na^+, –0.73; K^+, –0.61	FIM	–	–	49.2	10^{-5}–10^{-2}	FIA	[7]
	NH_4^+-1 (w = 3 %), PVC (w = 30 %), BEHS (w = 66.5 %), KTpClPB (x_i = 21 %)	Li^+, –3.5; Na^+, –2.4; K^+, –1.0; Rb^+, –1.5; Cs^+, –2.4; Mg^{2+}, –4.0; Ca^{2+}, –3.8; Sr^{2+}, –3.6; Ba^{2+}, –4.0	SSM	0.1	0.1	–	–	–	[8]
		Na^+, –2.5; K^+, –0.8	FIM	–	0.01				
	NH_4^+-1 (w = 4.4 %), silicone rubber (w = 94.15 %), KTpClPB (x_i = 41 %)	Na^+, –2.3	FIM	–	0.01	46	–	$c_{dl} = 4 \times 10^{-5}$ M	[9]
	NH_4^+-1 (w = 2.1 %), silicone rubber (w = 69.1 %), BEHS (w = 28 %), KTpClPB (x_i = 48 %)	Na^+, –3.1; K^+, –0.8	FIM	–	Na^+, 0.01 K^+, 0.001	54	–	$c_{dl} = 4 \times 10^{-5}$ M; $\tau > 7$ d	[9]
NH_4^+-1/ NH_4^+-2	**NH_4^+-1/NH_4^+-2** (72:28) tris(2-ethylhexyl) phosphate (weight ratio not reported)	Li^+, –2.38; Na^+, –2.70; K^+, –0.92; Rb^+, –1.37; Cs^+, –2.32; H^+, –1.80; Ca^{2+}, –3.77	FIM	–	0.1	58.0	10^{-5}–10^{-1}	25 °C; micro-electrode	[10]
	NH_4^+-1/NH_4^+-2 (72:28; w = 0.5 %), PVC (w = 32.7 %), DOA (w = 66.8 %)	Li^+, –4.3; Na^+, –2.9; K^+, –0.9; Rb^+, –1.3; Cs^+, –2.4; H^+, –3.6;	SSM	0.1	0.1	57.5 ± 1.5	10^{-5}–10^{-1}	r.o.o.g.; minielectrode; 22 °C;	[11]

Table 7: NH_4^+- Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{NH_4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
		Mg^{2+}, –5.1; Ca^{2+}, –5.1; Sr^{2+}, –5.0; Ba^{2+}, –4.7						t_{resp} < 1 min	
	NH_4^+-1/NH_4^+-2 (72:28; *w* = 0.5 %), PVC (*w* = 32.7 %), DOA (*w* = 66.8 %)	Li^+, –3.6; Na^+, –2.9; K^+, –0.8; Rb^+, –1.2; Cs^+, –2.4; H^+, –3.8; Mg^{2+}, –5.5; Ca^{2+}, –4.8; Sr^{2+}, –5.1; Ba^{2+}, –5.5	SSM	0.1	0.1	57.5 ± 1.5	10^{-5}–10^{-1}	22 °C; r.o.o.g.; t_{resp} < 1 min	[11]
	NH_4^+-1/NH_4^+-2 (72:28; *w* = 1.1 %), crosslinking agent (*w* = 13.6 %), silicone rubber (*w* = 85.3 %)	Li^+, –4.6; Na^+, –2.8; K^+, –0.7; Rb^+, –1.1; Cs^+, –2.3; Mg^{2+}, –4.9; Ca^{2+}, –4.8; Sr^{2+}, –5.1; Ba^{2+}, –5.3	SSM	0.1	0.1	57.8 ± 0.4	10^{-6}–10^{-1}		[12]
		H^+, –4.7	FIM	–	0.01				
	NH_4^+-1/NH_4^+-2 (75:25; satn.), tris(2-ethylhexyl) phosphate	Na^+, –0.17; K^+, –0.07; Ca^{2+}, –1.15	FIM	–	0.1	50–55	10^{-5}–10^{-1}	20 ± 0.5 °C; microelectrode; t_{90} = 10 s; 5 < pH < 8	[13]
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 10 %), NaTPB (x_i = 18 %), oNPOE (*w* = 89 %)	Na^+, –1.70; K^+, –0.42; Ca^{2+}, –2.7 0	FIM	–	0.1	50–55	10^{-5}–10^{-1}	20 ± 0.5 °C; microelectrode; t_{90} = 10 s; 5 < pH < 8	[13]
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 10 %), oNPOE (*w* = 90 %)	Na^+, –1.70; K^+, –0.40; Ca^{2+}, –1.15	FIM	–	0.1	50–55	10^{-5}–10^{-1}	20 ± 0.5 °C; microelectrode; t_{90} = 10 s 5 < pH < 8	[13]
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 10 %), KTpClPB (x_i = 12 %), oNPOE (*w* = 89 %)	Na^+, –1.7; K^+, –0.42; Ca^{2+}, –2.7	FIM	–	0.1	50–55	10^{-5}–10^{-1}	20 ± 0.5 °C; microelectrode; t_{90} = 10 s; 5 < pH < 8	[13]
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 6.9 %), KTpClPB (x_i = 12 %), oNPOE (*w* = 92.4 %)	Li^+, –3.6; Na^+, –2.0; K^+, –0.6; Rb^+, –0.9; Cs^+, –1.7; H^+, –2.2; $N(CH_3)_4^+$, –1.8; $AcCh^+$, –1.9; Mg^{2+}, –4.4; Ca^{2+}, –4.2; Sr^{2+}, –4.1; Ba^{2+}, –3.8; Mn^{2+}, –3.8; Co^{2+}, –3.7	SSM	0.1	0.1	59.2	10^{-5}–10^{-1}	22 ± 1 °C; microelectrode	[14]

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Table 7: NH_4^+- Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{NH_4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), DOS (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –2.66; Na^+, –2.17; K^+, +0.24; Mg^{2+}, –4.09; Ca^{2+}, –4.11	SSM	–	–	55.2 ± 0.98	–	c_{dl} = 5 × 10^{-6} M	[15]
	KTpClPB (x_i = 41 %)	Li^+, –1.98; Na^+, –2.11; K^+, +0.09; Mg^{2+}, –3.08	FIM	–	0.01				
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), oNPPE (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –2.43; Na^+, –1.98; K^+, –0.38; Mg^{2+}, –3.94; Ca^{2+}, –3.92	SSM	–	–	55.2 ± 0.98	–	c_{dl} = 5 × 10^{-6} M	[15]
	KTpClPB (x_i = 41 %)	Li^+, –2.11; Na^+, –2.00; K^+, –1.95; Mg^{2+}, –3.05; Ca^{2+}, –3.11	FIM	–	0.01				
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), DBS (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –2.11; Na^+, –2.49; K^+, –0.26; Mg^{2+}, –3.77; Ca^{2+}, –3.80	SSM	–	–	55.2 ± 0.98	–	c_{dl} = 5 × 10^{-6} M	[15]
	KTpClPB (x_i = 41 %)	Li^+, –2.25; Na^+, –2.05; K^+, –0.87 Mg^{2+}, –3.77; Ca^{2+}, –3.08	FIM	–	0.01	–	–		
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), TOP* (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –0.74; Na^+, –2.30; K^+, –0.42; Mg^{2+}, –3.73; Ca^{2+}, –2.89	SSM	–	–	55.2 ± 0.98	–	c_{dl} = 5 × 10^{-6} M * trioctyl	[15]
	KTpClPB (x_i = 41 %)	Li^+, –1.71; Na^+, –1.78; K^+, –0.80; Mg^{2+}, –3.02; Ca^{2+}, –3.08	FIM	–	0.01			phosphate	
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), DOA (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –2.58; Na^+, –2.37; K^+, –0.06; Mg^{2+}, –3.92; Ca^{2+}, –3.96	SSM	–	–	55.2 ± 0.98	–	c_{dl} = 5 × 10^{-6} M	[15]
	KTpClPB (x_i = 41 %)	Li^+, –2.08; Na^+, –2.11; K^+, –0.91; Mg^{2+}, –3.22; Ca^{2+}, –3.32	FIM	–	0.01				
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), DOPP (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –0.76; Na^+, –1.58; K^+, –0.62; Mg^{2+}, –2.89; Ca^{2+}, –2.57	SSM	–	–	55.2 ± 0.98	–	c_{dl} = 5 × 10^{-6} M	[15]
	KTpClPB (x_i = 41 %)	Li^+, –0.97; Na^+, –1.49; K^+, –0.91; Mg^{2+}, –3.00; Ca^{2+}, –2.67	FIM	–	0.01				

Table 7: NH_4^+- Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{NH4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
	NH_4^+-1/NH_4^+-2 (75:25; *w* = 0.75 %), oNPOE (*w* = 66 %), PVC (*w* = 33 %),	Li^+, –2.89; Na^+, –2.32; K^+, –1.11; Mg^{2+}, –4.02; Ca^{2+}, –3.91	SSM	–	0.01	55.2 ± 0.98	–	$c_{dl} = 5 \times 10^{-6}$ M	[15]
	KTpClPB (x_i = 41 %)	Li^+, –3.30; Na^+, –2.14; K^+, –1.38; Mg^{2+}, –4.20; Ca^{2+}, –2.62	FIM	–	0.01				
NH_4^+-3	**NH_4^+-3** (*w* = 1 %), DOA (*w* = 66.8 %), PVC (*w* = 32.2 %)	Na^+, +0.32; K^+, +0.41	SSM	0.01	0.01	45.0	–	t_{resp} = 30 s	[3]
NH_4^+-4	**NH_4^+-4** (*w* = 1 %), DOA (*w* = 66.8 %), PVC (*w* = 32.2 %)	Na^+, –2.09; K^+, –0.74	SSM	0.01	0.01	55.5	–	t_{resp} = 30 s	[3]
NH_4^+-5	**NH_4^+-5** (*w* = 1 %), DOA (*w* = 66.8 %), PVC (*w* = 32.2 %)	Na^+, –0.06; K^+, +0.58	SSM	0.01	0.01	45.0	–	t_{resp} = 30 s	[3]
NH_4^+-6	**NH_4^+-6** (*w* = 69 %), PVC (*w* = 30 %), KTpClPB (x_i = 0.6 %)	Li^+, –1.3; Na^+, –1.7; K^+, –1.1; Rb^+, –0.4; Cs^+, +0.6; Mg^{2+}, –2.8; Ca^{2+}, –2.7; Sr^{2+}, –2.9; Ba^{2+}, –2.9	SSM	0.1	0.1	–	–		[8]
NH_4^+-7	**NH_4^+-7** (*w* = 69 %), PVC (*w* = 30 %), KTpClPB (x_i = 0.8 %)	Li^+, –0.1; Na^+, –0.9; K^+, –0.6; Rb^+, –0.5; Cs^+, +0.1; Mg^{2+}, –2.0; Ca^{2+}, –2.0; Sr^{2+}, –2.1; Ba^{2+}, –2.2	SSM	0.1	0.1	–	–		[8]
NH_4^+-8	**NH_4^+-8** (*w* = 69 %), PVC (*w* = 30 %), KTpClPB (x_i = 0.9 %)	Li^+, –1.6; Na^+, –2.1; K^+, –1.4; Rb^+, –0.7; Cs^+, +0.3; Mg^{2+}, –3.0; Ca^{2+}, –3.0; Sr^{2+}, –2.9; Ba^{2+}, –3.2	SSM	0.1	0.1	–	–		[8]
NH_4^+-9	**NH_4^+-9** (*w* = 69 %), PVC (*w* = 30 %), KTpClPB (x_i = 0.8 %)	Li^+, –1.4; Na^+, –1.8; K^+, –1.4; Rb^+, –1.0; Cs^+, –0.3; Mg^{2+}, –2.3; Ca^{2+}, –2.2; Sr^{2+}, –2.4; Ba^{2+}, –2.5	SSM	0.1	0.1	–	–		[8]
NH_4^+-10	**NH_4^+-10** (*w* = 69 %), PVC (*w* = 30 %),	Li^+, –1.9; Na^+, –2.3; K^+, –1.7; Rb^+, –1.4;	SSM	0.1	0.1	–	–		[8]

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Table 7: NH_4^+- Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{NH4^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i = 0.9 %)	Cs^+, –0.1; Mg^{2+}, –3.2; Ca^{2+}, –3.4; Sr^{2+}, –3.2; Ba^{2+}, –3.4							
		Na^+, –2.2; K^+, –1.7	FIM	–	0.01	–	–		
NH_4^+-11/ NH_4^+-12/ NH_4^+-13	**NH_4^+-(11,12,13)** (13:6:1 by weight) (w = 5 %), DBP (w = 70 %), PVC (w = 25 %)	Li^+, –4.36; Na^+, –2.36; K^+, –0.48; Rb^+, –1.15; Cs^+, –2.48	SSM	–	–	N	10^{-5}–10^{-1}	t_{95} = 0.07–1.5 s	[16]

(1) L.A R. Pioda, W. Simon, *Chimia*, **23**, 72–73 (1969).
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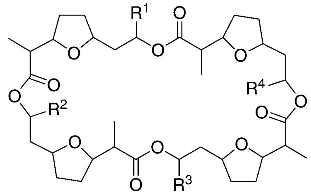
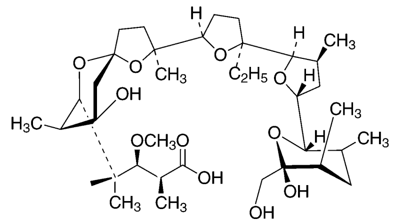
(16) H. Degawa, N. Shinozuka, S. Hayano, *Nippon Kagaku Kaishi*, 1462–1468 (1980).

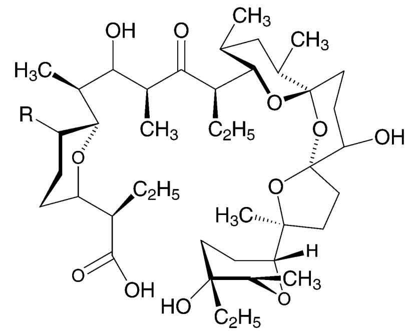
Table 7: NH_4^+- Selective Electrodes (*Continued*)



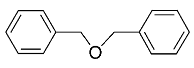
NH_4^+-1 (nonactin, M_r = 736.94): R^1, R^2, R^3, R^4 = CH_3
NH_4^+-2 (monactin, M_r = 750.97): R^1, R^2, R^3 = CH_3; R^4 = C_2H_5
NH_4^+-11 (dinactin, M_r = 765.00): R^1, R^3 = CH_3; R^2, R^4 = C_2H_5
NH_4^+-12 (trinactin, M_r = 779.03): R^1 = CH_3; R^2, R^3, R^4 = C_2H_5
NH_4^+-13 (tetranactin, M_r = 793.06): R^1, R^2, R^3, R^4 = C_2H_5



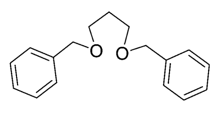
NH_4^+-3 (monensin, M_r = 670.89)



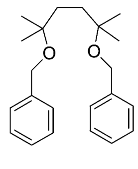
NH_4^+-4 (salinomycin, M_r = 753.02): R = CH_3
NH_4^+-5 (narasin, M_r = 739.00): R = H



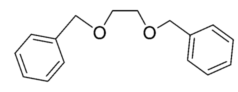
NH_4^+-6 (M_r = 198.26)



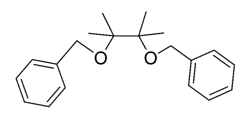
NH_4^+-7 (M_r = 256.34)



NH_4^+-8 (M_r = 326.22)



NH_4^+-9 (M_r = 242.32)



NH_4^+-10 (M_r = 298.42)

Table 8: Mg^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-1	**Mg^{2+}-1** (w = 1–2 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	Li^+, +0.5; Na^+, +0.3; K^+, +0.3; Rb^+, –0.8; Cs^+, –0.1; NH_4^+, +0.6; Ca^{2+}, +1.7; Sr^{2+}, +0.4; Ba^{2+}, +0.7	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Mg^{2+}-1 (w = 1–2 %), oNPOE (w = 65–66 %), KTpClPB (x_i = 100 %), PVC (w = 33 %)	Li^+, +0.2; Na^+, –0.1; K^+, +0.1; Rb^+, –0.7; Cs^+, 0.0; NH_4^+, +0.6; Ca^{2+}, +3.2; Sr^{2+}, +1.5; Ba^{2+}, +1.8	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Mg^{2+}-2	**Mg^{2+}-2** (w = 1–2 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	Li^+, +0.8; Na^+, +0.6; K^+, +0.6; Rb^+, –1.0; Cs^+, 0.0; NH_4^+, +1.1; Ca^{2+}, +0.9; Sr^{2+}, +1.4; Ba^{2+}, +2.0	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Mg^{2+}-2 (w = 1–2 %), oNPOE (w = 65–66 %), KTpClPB (x_i = 100 %), PVC (w = 33 %)	Li^+, +0.6; Na^+, –0.1; K^+, –1.2; Rb^+, –1.5; Cs^+, –1.6; NH_4^+, –0.2; Ca^{2+}, +2.1; Sr^{2+}, +0.5; Ba^{2+}, –0.1	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Mg^{2+}-3	**Mg^{2+}-3** (w = 1–2 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	Li^+, +0.4; Na^+, +0.4; K^+, +0.6; Rb^+, –1.5; Cs^+, +0.9; NH_4^+, +1.2; Ca^{2+}, –0.2; Sr^{2+}, 0.0; Ba^{2+}, +0.4	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Mg^{2+}-3 (w = 1–2 %), oNPOE (w = 65–66 %), KTpClPB (x_i = 100 %), PVC (w = 33 %)	Li^+, +0.2; Na^+, +0.3; K^+, +2.1; Rb^+, +3.0; Cs^+, +4.3; NH_4^+, +2.2; Ca^{2+}, +0.0; Sr^{2+}, +0.1; Ba^{2+}, +0.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Mg^{2+}-4	**Mg^{2+}-4** (w = 1–2 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	Li^+, +0.4; Na^+, +0.4; K^+, +1.1; Rb^+, +0.3; Cs^+, +0.9; NH_4^+, +1.0; Ca^{2+}, +0.4; Sr^{2+}, +0.3; Ba^{2+}, +0.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Mg^{2+}-4 (w = 1–2 %), oNPOE (w = 65–66 %), KTpClPB (x_i = 100 %), PVC (w = 33 %)	Li^+, –0.7; Na^+, +0.2; K^+, +2.9; Rb^+, +3.6; Cs^+, +4.5; NH_4^+, +2.3; Ca^{2+}, +2.8; Sr^{2+}, +2.6; Ba^{2+}, +3.0	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Mg^{2+}-5	**Mg^{2+}-5** (w = 1–2 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	Li^+, +0.7; Na^+, –0.4; K^+, +1.3; Rb^+, +0.4; Cs^+, +1.5; NH_4^+, +1.4; Ca^{2+}, +0.4; Sr^{2+}, +0.3; Ba^{2+}, +0.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
	Mg^{2+}-5 (w = 1–2 %), oNPOE (w = 65–66 %), KTpClPB (x_i = 100 %), PVC (w = 33 %)	Li^+, –0.2; Na^+, +0.8; K^+, +3.8 ; Rb^+, +4.8; Cs^+, +5.5; NH_4^+, +2.9; Ca^{2+}, +3.6; Sr^{2+}, +1.6; Ba^{2+}, +2.4	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Mg^{2+}-6	**Mg^{2+}-6** (w = 1–2 %), oNPOE (w = 65–66 %),	Li^+, +1.9; Na^+, +2.0; K^+, +1.9; Rb^+, +2.0; Cs^+, +2.1; NH_4^+, +1.8;	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 33 %)	Ca^{2+}, +3.4; Sr^{2+}, +2.2; Ba^{2+}, +0.2							
	Mg^{2+}-6 (w = 1–2 %), oNPOE (w = 65–66 %), KTpClPB (x_i = 50 %), PVC (w = 33 %)	Li^+, +2.5; Na^+, +2.1; K^+, +1.9; Rb^+, +2.6; Cs^+, +2.1; NH_4^+, +1.8; Ca^{2+}, +3.9; Sr^{2+}, +2.7; Ba^{2+}, +0.5	SSM	0.1	0.1	–	–	20–22 °C; r.o.o.g.	[1]
Mg^{2+}-7	**Mg^{2+}-7** (w = 1.7 %), TEHP (w = 31.8 %), 5-phenyl-1-pentanol (w = 31.8 %), PVC (w = 34.7 %)	Li^+, +0.2; Na^+, –1.1; K^+, –1.5; Rb^+, –1.7; Cs^+, –1.6; NH_4^+, +0.2; Ca^{2+}, +1.5; Sr^{2+}, –1.0; Ba^{2+}, –2.0; H^+, +3.8	SSM	0.1	0.1	–	9 × 10^{-4} – 10^{-1}	22 ± 0.5 °C; pH = 8.40 (internal solution)	[2]
		Li^+, +1.3; Na^+, –0.3; K^+, –0.8; Rb^+, –1.0; Cs^+, –0.9; NH_4^+, +1.1; Ca^{2+}, +0.9; Sr^{2+}, –1.6; Ba^{2+}, –2.0; H^+, +4.9	SSM	0.1	0.1	N	–	pH = 8.80 (internal solution); r.o.o.g.	
	Mg^{2+}-7 (w = 12 %), DBE (w = 60 %), KTpClPB (x_i = 4 %), PVC (w = 27 %)	Li^+, –1.2; Na^+, –1.1; K^+, –0.6; Rb^+, +0.1; Cs^+, +1.1; NH_4^+, +0.4; Ca^{2+}, –0.2; Sr^{2+}, –1.1; Ba^{2+}, –0.7	SSM	0.1	0.1	–	–	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3)	[3]
Mg^{2+}-8	**Mg^{2+}-8** (w = 1.7 %), TEHP (w = 31.8 %), 5-phenyl-1-pentanol (w = 31.8 %), PVC (w = 34.7 %)	Li^+, +0.2; Na^+, –1.1; K^+, –1.5; Rb^+, –1.7; Cs^+, –1.6; NH_4^+, +0.5; Ca^{2+}, +1.2; Sr^{2+}, –1.1; Ba^{2+}, –2.1; H^+, +3.8	SSM	0.1	0.1	–	–	22 ± 0.5 °C; pH = 8.40 (internal solution)	[2]
		Li^+, +0.6; Na^+, –1.0; K^+, –1.6; Rb^+, –2.0; Cs^+, –2.0; NH_4^+, +0.3; Ca^{2+}, +2.0; Sr^{2+}, –1.0; Ba^{2+}, –2.3; H^+, +3.0	SSM	0.1	0.1	N	–	pH = 8.80 (internal solution); r.o.o.g.	
Mg^{2+}-9	**Mg^{2+}-9** (w = 1.7 %), TEHP (w = 31.8 %), 5-phenyl-1-pentanol (w = 31.8 %), PVC (w = 34.7 %)	Li^+, +0.2; Na^+, –1.2; K^+, –1.5; Rb^+, –1.8; Cs^+, –1.7; NH_4^+, +0.6; Ca^{2+}, +1.0; Sr^{2+}, –1.0; Ba^{2+}, –2.0; H^+, +3.9	SSM	0.1	0.1	–	–	22 ± 0.5 °C; pH = 8.40 (internal solution)	[2]
		Li^+, +0.4; Na^+, –1.1; K^+, –1.4; Rb^+, –1.7; Cs^+, –1.6; NH_4^+, +0.5; Ca^{2+}, +1.2; Sr^{2+}, –1.0; Ba^{2+}, –1.7; H^+, +4.1	SSM	0.1	0.1	N	–	pH = 8.80 (internal solution) r.o.o.g.	
Mg^{2+}-10	**Mg^{2+}-10** (w = 1.7 %), TEHP (w = 31.8 %), 5-phenyl-1-pentanol (w = 31.8 %),	Li^+, +4.1; Na^+, +2.4; K^+, +2.0; Rb^+, +1.9; Cs^+, +2.1; NH_4^+, +4.1; Ca^{2+}, +0.3; Sr^{2+}, –0.3; Ba^{2+}, –0.1;	SSM	0.1	0.1	–	–	22 ± 0.5 °C; pH = 8.40 (internal solution)	[2]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 34.7 %)	Li^+, +1.9; Na^+, +0.2; K^+, –0.6; Rb^+, –0.8; Cs^+, –0.9; NH_4^+, +1.6; Ca^{2+}, +1.8; Sr^{2+}, –0.8; Ba^{2+}, –1.4; H^+, 5.0	SSM	0.1	0.1	28.5 ± 0.9	5 × 10^{-4} – 10^{-1}	pH = 8.80 (internal solution); r.o.o.g.	
Mg^{2+}-11	**Mg^{2+}-11** (w = 1–2 %), KTpClPB (x_i = 50 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –0.9; Na^+, –2.3; K^+, –1.2; Rb^+, –0.6; Cs^+, +0.3; H^+, +6.5; Ca^{2+}, +1.5; Sr^{2+}, +0.3; Ba^{2+}, +0.3	SSM	0.1	0.1	–	–		[4]
	Mg^{2+}-11, propylene carbonate, NaTPB (weight ratio not reported)	Li^+, +0.1; Na^+, –1.1; K^+, –1.4; Cs^+, –0.9; $AcCh^+$, –0.1; NH_4^+, –0.1; Ca^{2+}, +1.1; Sr^{2+}, +0.6; Ba^{2+}, +0.7; H^+, 2.7	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec.	[5]
Mg^{2+}-12	**Mg^{2+}-12** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, +0.5; Na^+, +0.5; K^+, +0.6; Rb^+, +0.4; Cs^+, +0.6; NH_4^+, +0.3; Ca^{2+}, +0.1; Sr^{2+}, –0.1; Ba^{2+}, –0.1	SSM	0.1	0.1	–	–	pH = 8.8 (0.01 M tris/HCl); r.o.o.g.	[4], [6]
	Mg^{2+}-12 (w = 1 %), KTpClPB (x_i = 50 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.5; Na^+, –1.5; K^+, –1.4; Rb^+, –1.0; Cs^+, –1.2; NH_4^+, –1.2; Ca^{2+}, –0.1; Sr^{2+}, –1.2; Ba^{2+}, –1.7	SSM	0.1	0.1	–	–	pH = 8.8 (0.01 M tris/HCl); r.o.o.g.	[4], [6]
	Mg^{2+}-12 (w = 1 %), KTpClPB (x_i = 73 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.6; Na^+, –2.6; K^+, –2.3; Rb^+, –2.0; Cs^+, –1.3; NH_4^+, –2.3; Ca^{2+}, –2.5; Sr^{2+}, –3.2; Ba^{2+}, –3.1; H^+, 10.8	SSM	0.1	0.1	32 ± 1	10^{-3} – 10^{-1}	pH = 8.8 (0.01 M tris/HCl)	[4], [6]
	Mg^{2+}-12 (w = 1 %), KTpClPB (x_i = 79 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.7; Na^+, –2.7; K^+, –2.2; Rb^+, –2.0; Cs^+, –1.2; NH_4^+, –2.4; Ca^{2+}, –2.7; Sr^{2+}, –3.4; Ba^{2+}, –3.2	SSM	0.1	0.1	–	–	pH = 8.8 (0.01 M tris/HCl); r.o.o.g.	[4], [6]
	Mg^{2+}-12 (w = 1 %), KTpClPB (x_i = 88 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.6; Na^+, –2.5; K^+, –1.2; Rb^+, –0.3; Cs^+, +1.0; NH_4^+, –1.6; Ca^{2+}, –2.2; Sr^{2+}, –2.9; Ba^{2+}, –2.7	SSM	0.1	0.1	–	–	pH = 8.8 (0.01 M tris/HCl); r.o.o.g.	[4], [6]
	Mg^{2+}-12 (w = 1 %), KTpClPB (x_i = 120 %), oNPOE (w = 64 %), PVC (w = 33 %)	Li^+, –0.4; Na^+, +1.1; K^+, +4.8; Rb^+, +6.1; Cs^+, +7.2; NH_4^+, +3.4; Ca^{2+}, +0.3; Sr^{2+}, +0.1; Ba^{2+}, +0.7	SSM	0.1	0.1	–	–	pH = 8.8 (0.01 M tris/HCl); r.o.o.g.	[4], [6]
Mg^{2+}-13	**Mg^{2+}-13** (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 70 %), PVC (w = 33 %)	Li^+, –2.3 Na^+, –2.6; K^+, –2.3; Rb^+, –1.8; Ca^{2+}, +0.9; Sr^{2+}, +0.5; Ba^{2+}, +0.5; H^+, +2.6	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-14	**Mg^{2+}-14** (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 70 %), PVC (w = 33 %)	Li^+, –3.3 Na^+, –3.6; K^+, –3.7; Rb^+, –2.8; Ca^{2+}, –0.1; Sr^{2+}, –0.6; Ba^{2+}, –0.6; H^+, +2.3	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
Mg^{2+}-15	**Mg^{2+}-15** (w = 1 %), CP (w = 66 %), PVC (w = 33 %)	Li^+, +0.7; Na^+, +0.8; K^+, +1.1; Rb^+, +1.8; Ca^{2+}, +0.2; Sr^{2+}, +0.1; Ba^{2+}, +0.3; H^+, +2.1	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 40 %), PVC (w = 33 %)	Li^+, –3.0; Na^+, –3.7; K^+, –3.6; Rb^+, –2.7; Ca^{2+}, +0.1; Sr^{2+}, –0.6; Ba^{2+}, –0.6; H^+, +1.5	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 70 %), PVC (w = 33 %)	Li^+, –3.1; Na^+, –3.8; K^+, –3.7; Rb^+, –2.6; Ca^{2+}, 0.0; Sr^{2+}, –0.7; Ba^{2+}, –0.7; H^+, +1.7	SSM	0.1	0.1	28.0	10^{-3} –10^{-1}	21 ± 1 °C; r.o.o.g.; t_{95} = 0.9 s;	[7]
	Mg^{2+}-15 (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 80 %), PVC (w = 33 %)	Li^+, –3.3; Na^+, –3.7; K^+, –3.7; Rb^+, –2.6; Ca^{2+}, –0.3; Sr^{2+}, –0.8; Ba^{2+}, –0.8; H^+, +1.8	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 120 %), PVC (w = 33 %)	Li^+, –3.2; Na^+, –3.4; K^+, –3.1; Rb^+, –2.6; Ca^{2+}, –0.8; Sr^{2+}, –1.5; Ba^{2+}, –1.5; H^+, +2.4	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), CP (w = 64 %), KTpClPB (x_i = 158 %), PVC (w = 33 %)	Li^+, –0.4; Na^+, –0.7; K^+, +0.6; Rb^+, +1.8; Ca^{2+}, –0.3; Sr^{2+}, –0.9; Ba^{2+}, –0.6; H^+, +2.2	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), PVC (w = 33 %), KTpClPB (x_i = 70 %), tetraundecyl benzhydrol 3,3',4,4'-tetracarboxylate (w = 65 %)	Na^+, –0.4; K^+, +0.7; Ca^{2+}, +0.6	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), KTpClPB (x_i = 70 %), oNPPE (w = 65 %), PVC (w = 33 %)	Na^+, –3.6; K^+, –2.3; Ca^{2+}, –0.2	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), KTpClPB (x_i = 70 %), phenylpentanol (w = 32.5 %), oNPOE (w = 32.5 %), PVC (w = 33 %)	Na^+, –3.0; K^+, –2.8; Ca^{2+}, +0.4	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), KTpClPB (x_i = 70 %), phenylpentanol (w = 32.5 %), BEHP (w = 32.5 %), PVC (w = 33 %)	Na^+, +0.3; K^+, +0.7; Ca^{2+}, +0.5	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Mg^{2+}-15 (w = 1 %), KTpClPB (x_i = 70 %), pNP (w = 65 %), PVC (w = 33 %)	Na^+, +3.5; K^+, +4.8; Ca^{2+}, +0.5	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
	Mg^{2+}-15 (w = 1 %), CP (w = 32.5 %), KTpClPB (x_i = 70 %), oNPOE (w = 32.5 %), PVC (w = 33 %)	Na^+, –3.8; Ca^{2+}, 0.0	–	–	–	–	–	21 ± 1 °C	[8]
	Mg^{2+}-15 (w = 1 %), KTpClPB (x_i = 70 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.5; Na^+, –3.0; K^+, –0.8; Ca^{2+}, –0.2; Sr^{2+}, –0.7; H^+, +2.2	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[9]
Mg^{2+}-16	**Mg^{2+}-16** (w = 1 %), CP (w = 65 %), KTpClPB (x_i = 70 %), PVC (w = 33 %)	Li^+, –3.1; Na^+, –3.5; K^+, –3.8; Rb^+, –2.9; Ca^{2+}, –0.1; Sr^{2+}, –0.7; Ba^{2+}, –0.6; H^+, +2.1	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[7]
Mg^{2+}-17	**Mg^{2+}-17** (w = 10 %), oNPOE (w = 89 %), KTpClPB (x_i = 11 %)	Na^+, –2.0; K^+, –2.2; $AcCh^+$, –0.6; Ca^{2+}, +1.0	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec.	[5]
	Mg^{2+}-17 (w = 10 %), oNPOE (w = 88 %), KTpClPB (x_i = 23 %)	Na^+, –2.2; K^+, –2.3; $AcCh^+$, –0.4; Ca^{2+}, +1.0	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec.	[5]
	Mg^{2+}-17 (w = 10 %), oNPOE (w = 87 %), KTpClPB (x_i = 34 %)	Li^+, –1.2; Na^+, –2.2; K^+, –2.3; Cs^+, –2.0; NH_4^+, –1.8; $AcCh^+$, –0.2; Ca^{2+}, +0.9; Sr^{2+}, +0.6; Ba^{2+}, +0.8; H^+, +1.5	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec. $t_{90} \leq 3$ s; $\tau > 7$ d; r.o.o.g.	[5], [10]
	Mg^{2+}-17 (w = 10 %), oNPOE (w = 86 %), KTpClPB (x_i = 46 %)	Na^+, –2.3; K^+, –2.4; $AcCh^+$, +0.4; Ca^{2+}, +0.6	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec.	[5]
	Mg^{2+}-17 (w = 10 %), PC (w = 87 %), KTpClPB (x_i = 34 %)	Na^+, –1.7; K^+, –1.7; $AcCh^+$, –0.8; Ca^{2+}, +0.9	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec.	[5]
	Mg^{2+}-17 (w = 10 %), 2,3-DMNB (w = 87 %), KTpClPB (x_i = 46 %)	Na^+, –2.2; K^+, –1.9; $AcCh^+$, +1.3; Ca^{2+}, +0.8	SSM	0.1	0.1	–	–	22 ± 1 °C; microelec.	[5]
	Mg^{2+}-17 (w = ? %), oNPOE (w = ? %), KTpClPB (x_i = 70 %)	Li^+, –1.3; Na^+, –2.2; K^+, –2.3; NH_4^+, –1.8; $AcCh^+$, –0.2; Ca^{2+}, +0.8; Sr^{2+}, +0.5; Ba^{2+}, +0.7; H^+, +1.5	SSM	0.1	0.1	–	–	21.5 ± 1 °C; microelec.; r.o.o.g.	[11]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-18	**Mg^{2+}-18** (w = 12 %), KTpClPB (x_i = 3 %), PVC (w = 27 %)	Li^+, –2.8; Na^+, –2.7; K^+, –1.9; Rb^+, –1.3; Cs^+, –0.3; NH_4^+, –0.9; Ca^{2+}, –2.2; Sr^{2+}, –2.9; Ba^{2+}, –3.0	SSM	0.1	0.1	60	10^{-4} – 2 $\times 10^{-2}$	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3); r.o.o.g.	[3]
Mg^{2+}-19	**Mg^{2+}-19** (w = 12 %), KTpClPB (x_i = 3 %), DBE (w = 60 %), PVC (w = 27 %)	Li^+, –0.6; Na^+, –0.8; K^+, –0.4; Rb^+, +0.2; Cs^+, +1.3; NH_4^+, +0.4; Ca^{2+}, –0.4; Sr^{2+}, –0.9; Ba^{2+}, –1.3	SSM	0.1	0.1	–	–	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3); r.o.o.g.	[3]
Mg^{2+}-20	**Mg^{2+}-20** (w = 12 %), KTpClPB (x_i = 3 %), DBE (w = 60 %), PVC (w = 27 %)	Li^+, –1.0; Na^+, –1.3; K^+, –0.8; Rb^+, –0.2; Cs^+, +0.8; NH_4^+, +0.1; Ca^{2+}, –1.6; Sr^{2+}, –2.1; Ba^{2+}, –2.2	SSM	0.1	0.1	–	–	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3); r.o.o.g.	[3]
Mg^{2+}-21	**Mg^{2+}-21** (w = 12 %), KTpClPB (x_i = 5 %), DBE (w = 60 %), PVC (w = 27 %)	Li^+, +0.6; Na^+, +0.2; K^+, +0.9; Rb^+, +1.5; Cs^+, +2.3; NH_4^+, +1.5; Ca^{2+}, –0.5; Sr^{2+}, –0.8; Ba^{2+}, –0.9	SSM	0.1	0.1	–	–	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3); r.o.o.g.	[3]
Mg^{2+}-22	**Mg^{2+}-22** (w = 12 %), KTpClPB (x_i = 3 %), DBE (w = 60 %), PVC (w = 27 %)	Na^+, +0.5; K^+, +1.1; Cs^+, +2.7; Ca^{2+}, +0.4	SSM	0.1	0.1	–	–	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3); r.o.o.g.	[3]
Mg^{2+}-23	**Mg^{2+}-23** (w = 12 %), KTpClPB (x_i = 3 %), DBE (w = 60 %), PVC (w = 27 %)	Na^+, +1.2; K^+, +1.6; Cs^+, +2.1; Ca^{2+}, +0.8	SSM	0.1	0.1	–	–	25 ± 0.5 °C; pH = 10.0 (0.05M tris/HNO_3); r.o.o.g.	[3]
Mg^{2+}-24	**Mg^{2+}-24** (w = 1 %), CP (w = 32.5 %), KTpClPB (x_i = 70 %), oNPPE (w = 32.5 %), PVC (w = 33 %)	Li^+, –1.9; Na^+, –3.0; K^+, –2.2; Ca^{2+}, –0.2; H^+, +1.5	SSM	0.1	0.1	–	–	37 °C	[12]
Mg^{2+}-25	**Mg^{2+}-25** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, +1.2; Na^+, +0.8; K^+, +1.8; Rb^+, +1.8; NH_4^+, +1.8; Ca^{2+}, +0.8; Ba^{2+}, +0.9; H^+, +4.6	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[6], [13]
	Mg^{2+}-25 (w = 1 %), KTpClPB (x_i = 40 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.8; Na^+, –2.5; K^+, –2.3; Rb^+, –2.2; NH_4^+, –2.2; Ca^{2+}, +0.8; Ba^{2+}, +1.0; H^+, +1.8	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[6], [13]
	Mg^{2+}-25 (w = 1 %), KTpClPB (x_i = 70 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.2; Na^+, –2.8; K^+, –2.5; Rb^+, –2.3; NH_4^+, –2.4; Ca^{2+}, +0.6; Ba^{2+}, +0.8; H^+, +1.3	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[6], [13]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Mg^{2+}-25 (w = 1 %), KTpClPB (x_i = 90 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.8; Na^+, –3.1; K^+, –2.5; Rb^+, –2.1; NH_4^+, –2.8; Ca^{2+}, –0.2; Ba^{2+}, –0.6; H^+, +1.2	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[6], [13]
	Mg^{2+}-25 (w = 1 %), KTpClPB (x_i = 120 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –4.0; Na^+, –4.1; K^+, –2.8; Rb^+, –1.9; NH_4^+, –3.2; Ca^{2+}, –0.8; Ba^{2+}, –1.6; H^+, +0.9	SSM	0.1	0.1	–	–	21 ± 1 °C; r.o.o.g.	[6], [13]
	Mg^{2+}-25 (w = 1 %), KTpClPB (x_i = 150 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.8; Na^+, –3.8; K^+, –2.6; Rb^+, –1.8; NH_4^+, –2.8; Ca^{2+}, –0.8; Ba^{2+}, –1.7; H^+, +1.0	SSM	0.1	0.1	29.3	9.7×10^{-6} – 4.8×10^{-2}	21 ± 1 °C; r.o.o.g.	[6], [13]
	Mg^{2+}-25 (w = 1 %), KTpClPB (x_i = 170 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, +0.8; Na^+, +1.8; K^+, +4.3; Rb^+, +5.3; NH_4^+, +3.8; Ca^{2+}, +0.7; Ba^{2+}, +1.1; H^+, +6.5	SSM	0.1	0.1	–	–	21 ± 1 °C; lg P_{TLC} = 6.9 ± 0.6; r.o.o.g.	[6], [13]
Mg^{2+}-26	**Mg^{2+}-26** (w = 1 %), KTpClPB (x_i = 155 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, –4.3; Na^+, –4.3; K^+, –2.8; Rb^+, –2.0; Ca^{2+}, –1.0; Sr^{2+}, –2.2; H^+, +1.3	SSM	0.1	0.1		–	pH = 7.4; r.o.o.g.	[14]
	Mg^{2+}-26 (w = 1 %), PVC (w = 33 %), ETH 5373 (w = 66 %), KTpClPB (x_i = 155 %)	Li^+, –5.5; Na^+, –5.0; K^+, –3.4; Rb^+, –2.5; Ca^{2+}, –1.5; Sr^{2+}, –3.0; H^+, +0.7	SSM	0.1	0.1		–	pH = 7.4; r.o.o.g.	[14]
	Mg^{2+}-26 (w = 1 %), ETH 500 (w = 3 %), PVC (w = 33 %), KTpClPB (x_i = 155 %), oNPOE (w = 63 %)	Li^+, –4.8; Na^+, –4.7; K^+, –2.9; Rb^+, –2.0; Ca^{2+}, –1.3; Sr^{2+}, –2.7; H^+, +0.9	SSM	0.1	0.1	29.5 ± 0.3 (37 °C)	10^{-4} – 10^{-1}	pH = 7.4; r.o.o.g.	[14]
	Mg^{2+}-26 (w = 8.8 %), ETH 500 (w = 4.4 %), KTpClPB (x_i = 60 %), oNPOE (w = 71.8 %), PVC (w = 12 %)	Li^+, –2.7; Na^+, –3.1; K^+, –3.1; NH_4^+, –2.5; Ca^{2+}, +0.7; Sr^{2+}, +0.4; Ba^{2+}, +0.6; H^+, +1.6; $AcCh^+$, –0.3	SSM	0.1	0.1	29.1 ± 0.5	10^{-4} – 10^{-2}	21 ± 1 °C; microelec.; $c_{dl} = 10^{-4.8 \pm 0.1}$ M; t_{90} < 30 s; r.o.o.g.	[10]
	Mg^{2+}-26 (w = 8.8 %), ETH 500 (w = 0.9 %), KTpClPB (x_i = 150 %), oNPOE (w = 70.8 %), PVC (w = 12 %)	Li^+, –3.5; Na^+, –3.2; K^+, –2.7; NH_4^+, –2.2; Ca^{2+}, –0.7; Sr^{2+}, –1.3; Ba^{2+}, –1.2; H^+, +2.3; $AcCh^+$, +2.7	SSM	0.1	0.1	29.1 ± 0.5	10^{-4} – 10^{-2}	21 ± 1 °C; microelec.; $c_{dl} = 10^{-4.8 \pm 0.2}$ M; r.o.o.g.	[10]
	Mg^{2+}-26 (w = 1 %), KTpClPB (x_i = 155 %), ETH 500 (w = 3 %),	Li^+, –4.8; Na^+, –4.6; K^+, –2.8; Rb^+, –2.0; Ca^{2+}, –1.2; Sr^{2+}, –2.6; Ba^{2+}, –2.5; H^+, +1.1	SSM	0.1	0.1	29.23 ± 0.5	–	21.5 ± 1 °C; $c_{dl} = 10^{-5.0}$ M; t_{90} < 30 s;	[11]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 59 %), PVC (w = 36 %)							r.o.o.g.	
	Mg^{2+}-26 (w = ? %), KTpClPB (x_i = 60 %), ETH 500 (w = ? %), oNPOE (w = ? %), PVC (w = ? %)	Li^+, –2.6; Na^+, –3.1; K^+, –3.1; NH_4^+, –2.5; $AcCh^+$, –0.3; Ca^{2+}, +0.8; Sr^{2+}, +0.4; Ba^{2+}, +0.6; H^+, +1.6	SSM	0.1	0.1	29.23 ± 0.5	–	21.5 ± 1 °C; r.o.o.g.	[11]
	Mg^{2+}-26 (w = ? %), KTpClPB (x_i = 150 %), ETH 500 (w = ? %), oNPOE (w = ? %), PVC (w = ? %)	Li^+, –3.4; Na^+, –3.2; K^+, –2.7; NH_4^+, –2.3; $AcCH^+$, +2.8; Ca^{2+}, –0.7; Sr^{2+}, –1.3; Ba^{2+}, –1.2; H^+, +2.3	SSM	0.1	0.1	29.23 ± 0.5	–	21.5 ± 1 °C; r.o.o.g.	[11]
	Mg^{2+}-26 (w = 0.4 %), KTpClPB (x_i = 155 %), oNPOE (w = 63 %), PVC (w = 36 %)	Ca^{2+}, –0.80 Ca^{2+}, –0.35	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 0.6 %), KTpClPB (x_i = 155 %), oNPOE (w = 63 %), PVC (w = 36 %)	Ca^{2+}, –0.90 Ca^{2+}, –0.50	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 1 %), KTpClPB (x_i = 155 %), oNPOE (w = 62 %), PVC (w = 36 %)	Ca^{2+}, –1.00 Ca^{2+}, –0.35	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 0.3 %), KTpClPB (x_i = 155 %), oNPOE (w = 60 %), PVC (w = 36 %), ETH 500 (w = 3 %)	Ca^{2+}, –0.90 Ca^{2+}, –0.35	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 0.6 %), KTpClPB (x_i = 155 %), oNPOE (w = 60 %), ETH 500 (w = 3 %), PVC (w = 36 %)	Ca^{2+}, –1.05 Ca^{2+}, –0.80	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 1 %), PVC (w = 36 %), KTpClPB (x_i = 155 %), oNPOE (w = 59 %), ETH 500 (w = 3 %)	Ca^{2+}, –1.20 Ca^{2+}, –0.75	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 3 %), PVC (w = 36 %), KTpClPB (x_i = 155 %), oNPOE (w = 55 %), ETH 500 (w = 3 %)	Ca^{2+}, –1.40 Ca^{2+}, –0.60	SSM SAM†	0.1 –	0.1 –	29.23 ± 0.5	– 	21.5 ± 1 °C; $c_{dl} \approx 10^{-5.0}$ M † see ref 15.	[15]
	Mg^{2+}-26 (w = 1 %), PVC and oNPOE (1:2 by weight)	Li^+, +0.9; Na^+, +0.9; K^+, +1.1; NH_4^+, +1.4; Ca^{2+}, +0.3; Sr^{2+}, –0.1; Ba^{2+}, +0.2; H^+, +5.6	SSM	0.1	0.1	nN	–	21 ± 1 °C; r.o.o.g.	[16]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Mg^{2+}-26 (w = 3 %), ETH 500 (w = 3.5 %), KTpClPB (x_i = 155 %), PVC and oNPOE (1:2 by weight)	Li^+, –2.9; Na^+, –3.4; K^+, –2.6; Rb^+, –2.4; Cs^+, –1.4; NH_4^+, –2.9; Ca^{2+}, –1.1; Sr^{2+}, –0.1; Ba^{2+}, +0.2; H^+, +1.3	SSM	0.1	0.1	29.5	–	21 ± 1 °C; r.o.o.g.	[16]
	Mg^{2+}-26 (w = 1 %), poly(2-acryl-amido-2-methyl-1-propane sulphonic acid–co-styrene) (x_i = 155 %), PVC and oNPOE (1:2 by weight)	Li^+, –0.6; Na^+, –1.1; K^+, –0.9; Rb^+, –1.1; Cs^+, –0.8; NH_4^+, –0.6; Ca^{2+}, +0.9; Sr^{2+}, +0.5; Ba^{2+}, +0.8; H^+, +3.3	SSM	0.1	0.1	29.6	–	21 ± 1 °C; r.o.o.g.	[16]
	Mg^{2+}-26 (w = 1 %), KTpClPB (x_i = 155 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –4.6; Na^+, –4.2; K^+, –2.7; Rb^+, –1.4; Ca^{2+}, –1.0; Sr^{2+}, –2.3; H^+, +0.9	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C;	[17]
	Mg^{2+}-26 (w = 1 %), PVC (w = 33 %), ETH 5373 (w = 65 %), KTpClPB (x_i = 155 %)	Li^+, –4.9; Na^+, –4.5; K^+, –3.3; Rb^+, –2.2; Ca^{2+}, –1.3; Sr^{2+}, –2.7; H^+, +1.5	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[17]
	Mg^{2+}-26 (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, –4.6; Na^+, –4.2; K^+, –2.7; Ca^{2+}, –1.0; Sr^{2+}, –2.3; H^+, +0.9	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
	Mg^{2+}-26 (w = 1 %), KTpClPB (x_i = 155 %), oNPOE (w = 55 %), PVC (w = 43 %)	Li^+, –4.9; Na^+, –4.7; K^+, –2.9; Ca^{2+}, –1.2	–	–	–	29	–	37 ± 0.5 °C	[18]
Mg^{2+}-27	**Mg^{2+}-27** (w = 1 %), oNPOE (w = 59 %), KTpClPB (x_i = 155 %), ETH 500 (w = 3 %), PVC (w = 36 %)	Li^+, –4.7; Na^+, –4.8; K^+, –3.8; NH_4^+, –3.9; Ca^{2+}, –1.5; Sr^{2+}, –2.7; H^+, –0.6	SSM	0.1	0.1	29.23 ± 0.5	–	21.5 ± 1 °C; $c_{dl} = 10^{-5}$ M; $t_{90} < 30$ s; r.o.o.g.	[11]
	Mg^{2+}-27 (w = 1 %), KTpClPB (x_i = 155 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –4.6; Na^+, –4.1; K^+, –3.0; Rb^+, –2.1; Ca^{2+}, –1.4; Sr^{2+}, –2.6; H^+, –1.0	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[17]
	Mg^{2+}-27 (w = 1 %), PVC (w = 33 %), ETH 5373 (w = 65 %), KTpClPB (x_i = 155 %)	Li^+, –5.4; Na^+, –5.0; K^+, –3.8; Rb^+, –3.0; Ca^{2+}, –1.7; Sr^{2+}, –2.9; H^+, –0.3	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[17]
Mg^{2+}-28	**Mg^{2+}-28** (w = 1 %), KTpClPB (x_i = 155 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, –4.3; Na^+, –4.2; K^+, –2.0; Rb^+, –0.8; Ca^{2+}, –1.2; Sr^{2+}, –2.3; H^+, +1.9	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C; $\lg P_{TLC}$ = 7.1 ± 1.2	[17]
	Mg^{2+}-28 (w = 1 %), PVC (w = 33 %), ETH 5373 (w = 66 %), KTpClPB (x_i = 155 %)	Li^+, –4.4; Na^+, –4.0; K^+, –3.1; Rb^+, –2.0; Ca^{2+}, –1.6; Sr^{2+}, –2.8; H^+, +2.3	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[17]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-29	**Mg^{2+}-29** (w = 1 %), PVC (w = 33 %), KTpClPB (x_i = 155 %), oNPOE (w = 65 %)	Li^+, –4.7; Na^+, –4.4; K^+, –2.7; Rb^+, –1.6; Ca^{2+}, –1.7; Sr^{2+}, –2.8; H^+, +0.1	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C; lg P_{TLC} = 8.1 ± 1.2	[17]
	Mg^{2+}-29 (w = 1 %), PVC (w = 33 %), ETH 5373 (w = 65 %), KTpClPB (x_i = 155 %)	Li^+, –4.8; Na^+, –4.7; K^+, –3.7; Rb^+, –2.8; Ca^{2+}, –1.9; Sr^{2+}, –3.1; H^+, +0.9	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[17]
Mg^{2+}-30	**Mg^{2+}-30** (w = 1 %), KTpClPB (x_i = 70 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.4; Na^+, –3.0; K^+, –2.0; Ca^{2+}, 0.0; Sr^{2+}, –0.4; H^+, +2.1	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[9]
Mg^{2+}-31	**Mg^{2+}-31** (w = 1 %), KTpClPB (x_i = 70 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.9; Na^+, –2.6; K^+, –2.1; Ca^{2+}, +0.8; Sr^{2+}, +0.8; H^+, +3.5	SSM	0.1	0.1	29.2 ± 0.5	–	21 ± 1 °C	[9]
Mg^{2+}-32	**Mg^{2+}-32** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.5; Na^+, –3.4; K^+, –2.7; Ca^{2+}, –0.7; Sr^{2+}, –1.8; H^+, +1.7	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-33	**Mg^{2+}-33** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.6; Na^+, –3.5; K^+, –2.2; Ca^{2+}, –0.8; Sr^{2+}, –2.1; H^+, +1.4	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-34	**Mg^{2+}-34** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.2; Na^+, –3.2; K^+, –1.4; Ca^{2+}, –0.9; Sr^{2+}, –2.0; H^+, +0.5	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-35	**Mg^{2+}-35** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.9; Na^+, –3.7; K^+, –2.0; Ca^{2+}, –0.9; Sr^{2+}, –2.1; H^+, +0.2	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-36	**Mg^{2+}-36** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.9; Na^+, –3.7; K^+, –2.3; Ca^{2+}, –0.8; Sr^{2+}, –1.9; H^+, +0.2	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-37	**Mg^{2+}-37** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.3; Na^+, –2.7; K^+, +1.5; Ca^{2+}, –0.4; Sr^{2+}, –1.4; H^+, +1.3	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-38	**Mg^{2+}-38** (w = 1 %), KTpClPB (x_i = 155 ± 5 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.3; Na^+, –2.9; K^+, –0.2; Ca^{2+}, –0.6; Sr^{2+}, –1.8; H^+, –0.1	SSM	0.1	0.1	N	–	21 ± 1 °C	[9]
Mg^{2+}-39	**Mg^{2+}-39** (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Na^+, –2.0; K^+, –2.1; Ca^{2+}, –1.6	MSM	–	–	23.0	–	25 ± 1 °C; c_{dl} = 2.0 × 10^{-5} M	[19]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-40	**Mg^{2+}-40** (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Na^+, –2.5; K^+, –2.7; Ca^{2+}, –2.2	MSM	–	–	27.0	–	25 ± 1 °C; $c_{dl} = 9.5 \times 10^{-6}$ M	[19]
Mg^{2+}-41	**Mg^{2+}-41** (w = ? %), DBP (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %)	Na^+, –0.3; K^+, –0.2; Ca^{2+}, –0.5	MSM	–	–	11.5	–	25 ± 1 °C; $c_{dl} = 3.6 \times 10^{-3}$ M	[19]
	Mg^{2+}-41 (w = ? %), BEHS (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %)	Na^+, –0.5; K^+, –0.4; Ca^{2+}, –0.8	MSM	–	–	13.6	–	25 ± 1 °C; $c_{dl} = 2.5 \times 10^{-3}$ M	[19]
	Mg^{2+}-41 (w = ? %), TEHP (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %)	Na^+, –0.8; K^+, –0.9; Ca^{2+}, –1.2	MSM	–	–	16.2	–	25 ± 1 °C; $c_{dl} = 1.3 \times 10^{-3}$ M	[19]
	Mg^{2+}-41 (w = ? %), DOPP (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %)	Na^+, –1.6; K^+, –1.8; Ca^{2+}, –1.9	MSM	–	–	22.4	–	25 ± 1 °C; $c_{dl} = 2.2 \times 10^{-5}$ M	[19]
	Mg^{2+}-41 (w = ? %), DPE (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %)	Na^+, –1.2; K^+, –1.4; Ca^{2+}, –1.5	MSM	–	–	18.8	–	25 ± 1 °C; $c_{dl} = 6.5 \times 10^{-3}$ M	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Na^+, –3.1; K^+, –3.3; Ca^{2+}, –2.8	MSM	–	–	30.0	–	25 ± 1 °C; $c_{dl} = 6.3 \times 10^{-6}$ M	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPPE (w = ? %)	Na^+, –3.0; K^+, –3.1; Ca^{2+}, –2.2	MSM	–	–	24.5	–	25 ± 1 °C; $c_{dl} = 3.0 \times 10^{-5}$ M	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 45 %)	Ca^{2+}, –0.6	MSM	–	–	7	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 47 %)	Ca^{2+}, –1.0	MSM	–	–	10	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 50 %)	Ca^{2+}, –1.5	MSM	–	–	15	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 52 %)	Ca^{2+}, –1.9	MSM	–	–	19	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 56 %)	Ca^{2+}, –2.4	MSM	–	–	24	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %),	Ca^{2+}, –2.7	MSM	–	–	27	–	25 ± 1 °C; r.o.o.g.	[19]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 60 %)								
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 64 %)	Ca^{2+}, –2.8	MSM	–	–	30	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 66 %)	Ca^{2+}, –2.8	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 69 %)	Ca^{2+}, –2.5	MSM	–	–	27	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = 72 %)	Ca^{2+}, –2.3	MSM	–	–	25	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 0.5 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.3	MSM	–	–	15	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 1.0 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.7	MSM	–	–	19	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 1.5 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.2	MSM	–	–	25	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 2.0 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.5	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 2.3 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.7	MSM	–	–	30	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 2.6 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.8	MSM	–	–	30	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 3.0 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.8	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 3.3 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.6	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Mg^{2+}-41 (w = 4.0 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.3	MSM	–	–	28	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 4.3 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.1	MSM	–	–	27	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 5.1 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.0	MSM	–	–	27	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 6.3 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.9	MSM	–	–	26	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 7.7 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.8	MSM	–	–	26	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 8.4 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.7	MSM	–	–	25	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 10 %), KTpClPB (x_i = ? %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.7	MSM	–	–	24	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 10 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –1.6	MSM	–	–	22	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 20 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.1	MSM	–	–	25	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 30 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.4	MSM	–	–	27	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 40 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.7	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 50 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.8	MSM	–	–	30	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 60 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.8	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 70 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.7	MSM	–	–	28	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 84 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.6	MSM	–	–	26	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 100 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.5	MSM	–	–	25	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 120 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.3	MSM	–	–	23	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 135 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.2	MSM	–	–	21	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = 150 %), PVC (w = ? %), oNPOE (w = ? %)	Ca^{2+}, –2.0	MSM	–	–	19	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = 32 %), oNPOE (w = ? %)	Ca^{2+}, –2.8	MSM	–	–	30	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = 37 %) oNPOE (w = ? %),	Ca^{2+}, –2.7	MSM	–	–	29	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = 42 %), oNPOE (w = ? %)	Ca^{2+}, –2.6	MSM	–	–	28	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = 45 %), oNPOE (w = ? %)	Ca^{2+}, –2.5	MSM	–	–	27	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = ? %), KTpClPB (x_i = ? %), PVC (w = 48 %), oNPOE (w = ? %)	Ca^{2+}, –2.1	MSM	–	–	25	–	25 ± 1 °C; r.o.o.g.	[19]
	Mg^{2+}-41 (w = 2.66 %), KTpClPB (x_i = 50 %), oNPOE (w = 64 %), PVC (w = 32 %)	Li^+, –3.8; Na^+, –3.1; K^+, –3.3; Cs^+, –3.2; NH_4^+, –3.4; Ca^{2+}, –2.8; Sr^{2+}, –3.6; Ba^{2+}, –3.2; Co^{2+}, –3.7; Ni^{2+}, –4.0; Cu^{2+}, –4.1; Cd^{2+}, –3.9; Al^{3+}, –3.9	MSM	–	–	30	3.2 $\times 10^{-5}$ –10^{-1}	25 ± 1 °C; c_{dl} = 6.3 $\times 10^{-6}$ M	[19]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-42	**Mg^{2+}-42** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.8; Na^+, –1.6; K^+, +0.5; Rb^+, +1.6; Cs^+, +2.8; NH_4^+, +0.1; Ca^{2+}, –0.8; Sr^{2+}, –1.0; Ba^{2+}, –0.4; H^+, –0.2	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 7.4 ± 0.4	[20]
Mg^{2+}-43	**Mg^{2+}-43** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –2.6; Na^+, –1.8; K^+, –0.4; Rb^+, –0.4; Cs^+, 0.0; NH_4^+, +0.8; Ca^{2+}, +1.7; Sr^{2+}, +0.1; Ba^{2+}, 0.0; H^+, –0.6	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 6.9 ± 0.4	[20]
Mg^{2+}-44	**Mg^{2+}-44** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –2.7; Na^+, –2.4; K^+, –1.7; Rb^+, –1.2; Cs^+, –0.5; NH_4^+, –2.0; Ca^{2+}, –1.2; Sr^{2+}, –1.6; Ba^{2+}, –1.7; H^+, –1.0	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 15.0 ± 0.3	[20]
Mg^{2+}-45	**Mg^{2+}-45** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.8; Na^+, –1.2; K^+, –1.4; Rb^+, –1.5; Cs^+, –1.5; NH_4^+, –1.5; Ca^{2+}, 0.0; Sr^{2+}, –0.7; Ba^{2+}, –0.7; H^+, –1.2	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 4.5 ± 0.2	[20]
Mg^{2+}-46	**Mg^{2+}-46** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –3.1; Na^+, –3.8; K^+, –3.1; Rb^+, –2.4; Cs^+, –2.4; NH_4^+, –2.9; Ca^{2+}, +0.8; Sr^{2+}, –0.1; Ba^{2+}, –0.7	SSM	0.1	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[20]
	Mg^{2+}-46 (w = 2 %), KTpClPB (x_i = 75 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –3.1; Na^+, –3.9; K^+, –2.9; Rb^+, –2.5; Cs^+, –2.0; NH_4^+, –2.9; Ca^{2+}, +0.7; Sr^{2+}, –0.3; Ba^{2+}, –1.0	SSM	0.1	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[20]
	Mg^{2+}-46 (w = 2 %), KTpClPB (x_i = 85 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –3.6; Na^+, –3.4; K^+, –2.0; Rb^+, –0.9; Cs^+, –0.5; NH_4^+, –2.4; Ca^{2+}, –0.1; Sr^{2+}, –2.0; Ba^{2+}, –1.5	SSM	0.1	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[20]
	Mg^{2+}-46 (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –3.8; Na^+, –3.2; K^+, –1.5; Rb^+, –0.6; Cs^+, +0.7; NH_4^+, –2.0; Ca^{2+}, –2.5; Sr^{2+}, –3.0; Ba^{2+}, –2.3; H^+, –0.7	SSM	0.1	0.1	N	2 × 10^{-5} –10^{-1}	25 ± 0.5 °C; lg $P_{o/w}$ = 3.0 ± 0.4	[20]
	Mg^{2+}-46 (w = 2 %), KTpClPB (x_i = 125 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –2.7; Na^+, –1.9; K^+, +0.3; Rb^+, +0.8; Cs^+, +1.7; NH_4^+, –0.4; Ca^{2+}, –2.0; Sr^{2+}, –2.4; Ba^{2+}, –1.8	SSM	0.1	0.1	–	–	25 ± 0.5 °C; r.o.o.g.	[20]
Mg^{2+}-47	**Mg^{2+}-47** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.1; Na^+, –1.4; K^+, –1.9; Rb^+, –2.0; Cs^+, –1.6; NH_4^+, –2.5; Ca^{2+}, –0.5; Sr^{2+}, –1.4; Ba^{2+}, –1.8; H^+, –0.9	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 3.4 ± 0.4	[20]

Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Mg^{2+},B}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Mg^{2+}-48	**Mg^{2+}-48** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –0.7; Na^+, –0.6; K^+, +3.7; Rb^+, +4.7; Cs^+, +6.1; NH_4^+, +3.1; Ca^{2+}, 0.0; Sr^{2+}, +0.2; Ba^{2+}, +0.6; H^+, +1.6	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 1.8 ± 0.2	[20]
Mg^{2+}-49	**Mg^{2+}-49** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –2.8; Na^+, +0.8; K^+, +2.8; Rb^+, +4.1; Cs^+, +4.3; NH_4^+, +2.5; Ca^{2+}, +0.7; Sr^{2+}, +0.6; Ba^{2+}, +1.1; H^+, +1.1	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 2.3 ± 0.2	[20]
Mg^{2+}-50	**Mg^{2+}-50** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –0.2; Na^+, –0.6; K^+, –0.5; Rb^+, –0.3; Cs^+, +0.5; NH_4^+, –0.1; Ca^{2+}, –0.9; Sr^{2+}, –1.2; Ba^{2+}, –1.2; H^+, 0.0	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 5.1 ± 0.4	[20]
Mg^{2+}-51	**Mg^{2+}-51** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.3; Na^+, –1.5; K^+, –0.8; Rb^+, –0.1; Cs^+, 1.3; NH_4^+, 0.3; Ca^{2+}, –0.5; Sr^{2+}, –0.7; Ba^{2+}, –0.6; H^+, –0.2	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 3.2 ± 0.3	[20]
Mg^{2+}-52	**Mg^{2+}-52** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, +4.6; Na^+, +1.7; K^+, +4.9; Rb^+, +5.9; Cs^+, +7.1; NH_4^+, +4.5; Ca^{2+}, +0.5; Sr^{2+}, +0.6; Ba^{2+}, +1.1; H^+, +1.3	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 4.0 ± 0.3	[20]
Mg^{2+}-53	**Mg^{2+}-53** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.1; Na^+, –1.6; K^+, 0.0; Rb^+, +0.5; Cs^+, +1.2; NH_4^+, –0.9; Ca^{2+}, –0.3; Sr^{2+}, –1.0; Ba^{2+}, –1.0; H^+, +0.3	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 4.6 ± 0.4	[20]
Mg^{2+}-54	**Mg^{2+}-54** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.3; Na^+, –1.9; K^+, –1.0; Rb^+, –0.6; Cs^+, 0.0; NH_4^+, –1.4 ; Ca^{2+}, +0.2; Sr^{2+}, –0.1; Ba^{2+}, –0.4; H^+, –0.1	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 6.1 ± 0.4	[20]
Mg^{2+}-55	**Mg^{2+}-55** (w = 2 %), KTpClPB (x_i = 100 %), oNPOE (w = 66 %), PVC (w = 31 %)	Li^+, –1.9; Na^+, –3.2; K^+, –2.6; Rb^+, –2.3; Cs^+, –1.6; NH_4^+, –3.0 ; Ca^{2+}, –0.7; Sr^{2+}, –1.2; Ba^{2+}, –1.5; H^+, –1.0	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 7.6 ± 0.4	[20]
Mg^{2+}-56	**Mg^{2+}-56** (w = 2 %), oNPOE (w = 66 %), KTpClPB (x_i = 100 %), PVC (w = 31 %)	Li^+, –1.1; Na^+, –0.4; K^+, +1.6; Rb^+, +2.5; Cs^+, +3.5; NH_4^+, +1.3 ; Ca^{2+}, +0.9; Sr^{2+}, +0.8; Ba^{2+}, +1.3; H^+, +0.9	SSM	0.1	0.1	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 6.2 ± 0.4	[20]

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Table 8: Mg^{2+}-Selective Electrodes (*Continued*)

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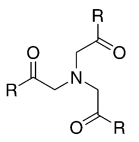
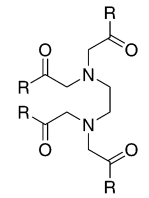
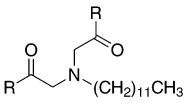


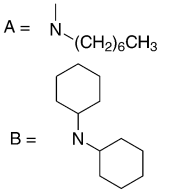
Mg^{2+}-1 (M_r = 524.83): R = A

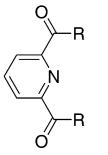


Mg^{2+}-2 (M_r = 737.16): R = A

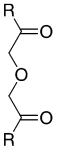


Mg^{2+}-3 (M_r = 523.88): R = A

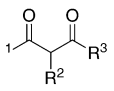




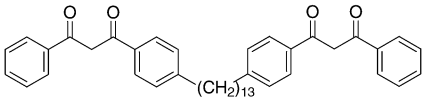
Mg^{2+}-4 (M_r = 389.58): R = A
Mg^{2+}-5 (M_r = 493.73): R = B



Mg^{2+}-6 (M_r = 460.69): R = B

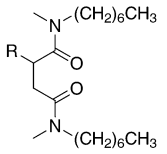


Mg^{2+}-7 (M_r = 224.26): R^1 = R^3 = phenyl, R^2 = H
Mg^{2+}-8 (ETH 245, M_r = 258.71): R^1 = phenyl, R^2 = H, R^3 = *p*-Cl-phenyl
Mg^{2+}-9 (ETH 248, M_r = 293.15): R^1 = R^3 = *p*-Cl-phenyl, R^2 = H
Mg^{2+}-19 (M_r = 154.09): R^1 = phenyl, R^2 = H, R^3 = CF_3
Mg^{2+}-20 (M_r = 176.21): R^1 = R^3 = CH_3, R^2 = phenyl

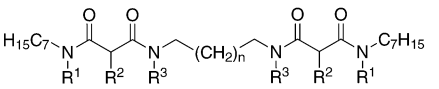


Mg^{2+}-10 (ETH 1224, M_r = 628.86)

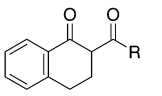
Table 8: Mg^{2+}-Selective Electrodes (*Continued*)



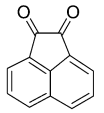
Mg^{2+}-11 (ETH 1117, M_r = 340.54): R = H
Mg^{2+}-12 (ETH 2220, M_r = 355.57): R = NH_2



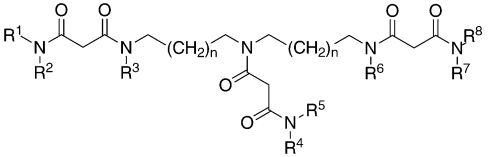
Mg^{2+}-13 (M_r = 484.73): n = 2, R^1 = CH_3, R^2 = H, R^3 = H
Mg^{2+}-14 (M_r = 512.78): n = 4, R^1 = CH_3, R^2 = H, R^3 = H
Mg^{2+}-15 (ETH 4030, M_r = 540.83): n = 6, R^1 = CH_3, R^2 = H, R^3 = H
Mg^{2+}-16 (M_r = 568.89): n = 8, R^1 = CH_3, R^2 = H, R^3 = H
Mg^{2+}-17 (ETH 5214, M_r = 568.89): n = 6, R^1 = CH_3, R^2 = CH_3, R^3 = H
Mg^{2+}-24 (ETH 5220, M_r = 512.78): n = 6, R^1 = H, R^2 = H, R^3 = H
Mg^{2+}-30 (ETH 4083, M_r = 540.84): n = 6, R^1 = H, R^2 = H, R^3 = CH_3
Mg^{2+}-31 (ETH 5222, M_r = 568.89): n = 6, R^1 = CH_3, R^2 = H, R^3 = CH_3

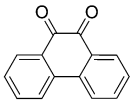


Mg^{2+}-18 (M_r = 188.23): R = CH_3
Mg^{2+}-21 (M_r = 272.39): R = $(CH_2)_6CH_3$



Mg^{2+}-22 (M_r = 182.17)





Mg^{2+}-23 (M_r = 208.21)

Mg^{2+}-25 (ETH 5282, M_r = 807.22): n = 4, R^1, R^4, R^7 = CH_3, R^2, R^5, R^8 = $(CH_2)_6CH_3$, R^3, R^6 = H
Mg^{2+}-26 (ETH 7025, M_r = 863.33): n = 6, R^1, R^5, R^8 = $(CH_2)_6CH_3$, R^2, R^4, R^7 = CH_3, R^3, R^6 = H
Mg^{2+}-28 (ETH 7160, M_r = 971.42): n = 6, R^1, R^4, R^7 = CH_3, R^2, R^8 = 1-adamantyl, R^3, R^6 = H, R^5 = $(CH_2)_6CH_3$
Mg^{2+}-32 (ETH 8020, M_r = 891.37): n = 6, R^1, R^5, R^8 = $(CH_2)_6CH_3$, R^2, R^3, R^4, R^6, R^7 = CH_3
Mg^{2+}-33 (ETH 8092,M_r = 877.35): n = 6, R^1, R^5, R^8 = $(CH_2)_6CH_3$, R^2, R^3, R^4, R^7 = CH_3, R^6 = H
Mg^{2+}-34 (ETH 4310, M_r = 863.32): n = 6, R^1, R^8 = $(CH_2)_6CH_3$, R^2, R^7 = CH_3, R^3, R^4, R^6 = H, R^5 = $(CH_2)_7CH_3$
Mg^{2+}-35 (ETH 8091, M_r = 877.35): n = 6, R^1, R^5 = $(CH_2)_7CH_3$, R^2, R^4, R^6 = H, R^3, R^7 = CH_3, R^8 = $(CH_2)_6CH_3$
Mg^{2+}-36 (ETH 8026, M_r = 891.38): n = 6, R^1, R^5, R^8 = $(CH_2)_7CH_3$, R^2, R^4, R^7 = H, R^3, R^6 = CH_3
Mg^{2+}-37 (ETH 4328, M_r = 863.32): n = 6, R^1, R^8 = $(CH_2)_7CH_3$, R^2, R^3, R^6, R^7 = H, R^4 = CH_3, R^5 = $(CH_2)_6CH_3$
Mg^{2+}-38 (ETH 4320, M_r = 863.32): n = 6, R^1, R^5, R^8 = $(CH_2)_7CH_3$, R^2, R^3, R^4, R^6, R^7 = H

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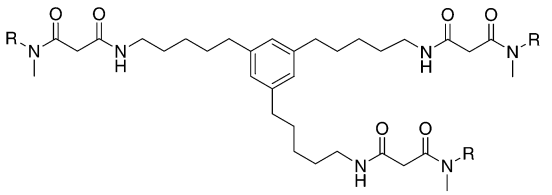
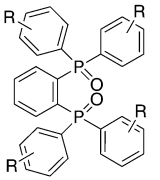
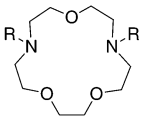
Table 8: Mg^{2+}-Selective Electrodes (*Continued*)



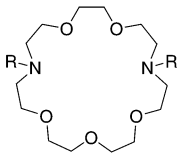
Mg^{2+}-27 (ETH 3832, M_r = 925.39): R = $(CH_2)_6CH_3$
Mg^{2+}-29 (ETH 5506, M_r = 1033.49): R = 1-adamantyl



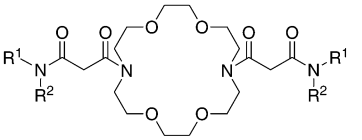
Mg^{2+}-39 (M_r = 658.46): R = NO_2
Mg^{2+}-40 (M_r = 478.46): R = H
Mg^{2+}-41 (M_r = 534.58): R = CH_3



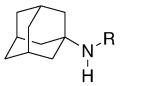
Mg^{2+}- 42 (K21B, M_r = 725.07): R = C



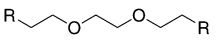
Mg^{2+}- 43 (K23B, M_r = 813.18): R = C



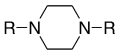
Mg^{2+}-44 (K22B1, M_r = 937.45): R^1 = H, R^2 = $(CH_2)_{17}CH_3$
Mg^{2+}-45 (K22B4, M_r = 761.06): R^1 = R^2 = cyclohexyl
Mg^{2+}-46 (K22B5, M_r = 700.92): R^1 = H, R^2 = 1-adamantyl
Mg^{2+}-47 (K22B6, M_r = 706.97): R^1 = H, R^2 = 4-*tert*-butylcyclohexyl
Mg^{2+}-48 (K22B7, M_r = 584.68): R^1 = H, R^2 = C_6H_5
Mg^{2+}-49 (K22B8, M_r = 736.87): R^1 = R^2 = C_6H_5



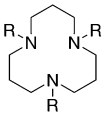
Mg^{2+}- 50 (Basic-B5, M_r = 370.54): R = D



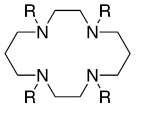
Mg^{2+}-51 (K2B5, M_r = 556.75): R = D



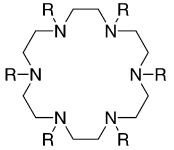
Mg^{2+}- 52 (6A2B5, M_r = 524.71): R = D



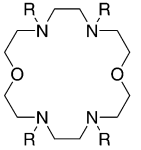
Mg^{2+}- 53 (12A3B5, M_r = 829.15): R = D



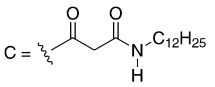
Mg^{2+}- 54 (14A4B5, M_r = 1077.47): R = D



Mg^{2+}- 55 (18A6B5, M_r = 1574.13): R = D



Mg^{2+}-56 (18A4O2B5, M_r = 1137.53): R = D



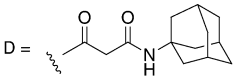


Table 9: Ca^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ca^{2+}-1	**Ca^{2+}-1** (w = 9.0 %), KTpClPB (x_i = 43 %), crosslinking agent (w = 8.6 %), silicone rubber (w = 74.9 %), DOS (w = 9.0 %)	H^+, –4.1; Na^+, –7.6; K^+, –6.9; Mg^{2+}, –5.9	SSM	10^{-1}	10^{-1}	29.5 ± 0.1	$10^{-5.3}$–10^{-1}	20 °C	[1]
	Ca^{2+}-1 (w = 4.7 %), KTpClPB (x_i = 26 %), crosslinking agent (w = 11.2 %), silicone rubber (w = 78.9 %)	H^+, –2.2; Na^+, –4.7; K^+, –4.7; Mg^{2+}, –5.2	SSM	10^{-1}	10^{-1}	31.3 ± 0.3	10^{-5}–10^{-1}	20 °C	[1]
	Ca^{2+}-1 (w = 1 %), PVC (w = 33.0 %), KTpClPB (x_i = 97 %), oNPOE (w = 65.3 %)	Na^+, –3.6†, –5.5††; K^+, –3.7†, –5.6††; Mg^{2+}, –4.2†, –5.9††	SSM	0.1† 0.01††	0.1† 0.01††	29.2††† 28.7††††	–	c_{dl} = $10^{-5.8}$ M†††	[2]
	Ca^{2+}-1 (w = 3.4 %), KTpClPB (x_i = 81 %), DOS (w = 62.9 %), PVC (w = 31.7 %)	Na^+, –3.1†, –3.5††; K^+, –3.2†, –3.7††; Mg^{2+}, –4.1†, –5.7††	SSM	0.1	0.1	29.6††† 28.8††††	–	c_{dl} = $10^{-5.7}$ M†††	[2]
	Ca^{2+}-1 (w = 4.2 %), PVC (w = 29.0 %), bis(1,1',3,3'-tetramethylbutyl)phenyl-phosphoric acid (w = 3.0 %), DOPP (w = 63.8 %)	Li^+, –2.28; Na^+, –3.06; K^+, –3.33; Rb^+, –3.29; Cs^+, –3.23; NH_4^+, –2.85; H^+, +0.30; Mg^{2+}, –2.62; Sr^{2+}, –1.51; Ba^{2+}, –2.31	FIM	–	0.15	–	–	–	[3]
	Ca^{2+}-1 (w = 3.5 %), KTpClPB (x_i = 83 %), DOPP (w = 65.4 %), PVC (w = 29.0 %)	Li^+, –1.55; Na^+, –2.26; K^+, –2.68; Rb^+, –2.75; Cs^+, –2.80; $NH4^+$, –2.00; H^+, –0.66; Mg^{2+}, –3.20; Sr^{2+}, –1.42; Ba^{2+}, –1.39	FIM	–	0.15	–	–	–	[3]
	Ca^{2+}-1 (w = 10.0 %), phthalic acid polyester (w = 59.0 %), KTpClPB (x_i = 28 %), PVC (w = 29.0 %)	Li^+, –3.70; Na^+, –4.00; K^+, –4.09; Rb^+, –3.96; Cs^+, –4.85; NH_4^+, –4.05; H^+, –4.20; Mg^{2+}, –5.06; Sr^{2+}, –1.96; Ba^{2+}, –2.96	FIM	–	0.15	29.6	10^{-6}–10^{-2}	c_{dl} = $10^{-6.3}$ M	[3]
	Ca^{2+}-1 (w = 5.0 %), KTpClPB (x_i = 86 %),	Li^+, –3.68; Na^+, –4.00; K^+, –4.09; Rb^+, –3.96 ;	FIM	–	0.15	–	–	–	[3]

† without EGTA.
†† with 4×10^{-4} M EGTA.
††† at pH 9.5.
†††† in unbuffered solution.

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	BEHS (w = 62.9 %), PVC (w = 29.0 %)	Cs^+, –3.85; NH_4^+, –4.05; H^+, –4.44; Mg^{2+}, –5.12; Sr^{2+}, –2.07; Ba^{2+}, –3.34							
	Ca^{2+}-1 (w = 10.0 %), tri-*p*-cresyl phosphate (w = 59.0 %), KTpClPB (x_i = 28 %), PVC (w = 29.0 %)	Li^+, –3.17; Na^+, –3.80; K^+, –4.04; Rb^+, –4.08; Cs^+, –3.89; NH_4^+, –3.96; H^+, –3.60; Mg^{2+}, –5.31; Sr^{2+}, –1.89; Ba^{2+}, –2.74	FIM	–	0.15	–	–		[3]
	Ca^{2+}-1 (w = 10.0 %), KTpClPB (x_i = 28 %), didodecyl phthalate (w = 59.0 %), PVC (w = 29.0 %)	Li^+, –3.41; Na^+, –3.74; K^+, –3.92; Rb^+, –3.92; Cs^+, –3.85; NH_4^+, –3.89; H^+, –4.36; Mg^{2+}, –5.02; Sr^{2+}, –2.10; Ba^{2+}, –2.82	FIM	–	0.15	–	–		[3]
	Ca^{2+}-1 (w = 6.0 %), KTpClPB (x_i = 23 %), BEHS (w = 66.0 %), PVC (w = 29.0 %)	Li^+, –3.48; Na^+, –3.74; K^+, –3.60; Rb^+, –4.04; Cs^+, –4.15; NH_4^+, –3.74; H^+, –3.74; Mg^{2+}, –5.17; Sr^{2+}, –2.06; Ba^{2+},– 2.93	FIM	–	0.15	–	–	–	[3]
	Ca^{2+}-1 (w = 10.0 %), BEHS (w = 59.0 %), KTpClPB (x_i = 28 %), PVC (w = 29.0 %)	Li^+, –3.30; Na^+, –3.57; K^+, –3.85; Rb^+, –4.00; Cs^+, –4.00; NH_4^+, –3.85; H^+, –3.70; Mg^{2+}, –6.40; Sr^{2+}, –1.89; Ba^{2+}, –2.70	FIM	–	0.15	–	–	–	[3]
	Ca^{2+}-1 (w = 10.0 %), KTpClPB (x_i = 14 %), didodecyl phthalate (w = 60.0 %), PVC (w = 29.0 %)	Li^+, –3.26; Na^+, –3.57; K^+, –3.82; Rb^+, –4.00; Cs^+, –4.00; NH_4^+, –3.85; H^+, –3.80; Mg^{2+}, –5.64; Sr^{2+}, –2.00; Ba^{2+},–2.80	FIM	–	0.15	–	–		[3]
	Ca^{2+}-1 (w = 10.0 %), KTpClPB (x_i = 14 %), phthalic acid polyester (w = 60.0 %), PVC (w = 29.0 %)	Li^+, –3.28 ; Na^+, –3.60; K^+, –3.77; Rb^+, –1.85; Cs^+, –3.80; NH_4^+, –3.77; H^+, –3.55; Mg^{2+}, –5.00; Sr^{2+}, –1.85; Ba^{2+}, –2.70	FIM	–	0.15	–	–		[3]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Ca^{2+}-1 (w = 0.8 %), silicone rubber (w = 78.0 %), DOS (w = 21.2 %)	Li^+, –0.41; Na^+, –0.06; K^+, –0.64; Mg^{2+}, –5.00	SSM ($E_A = E_B$)	–	10^{-1}	27.4	10^{-5}–10^{-2}	Ag CWE; $c_{dl} < 10^{-6}$ M	[4]
	Ca^{2+}-1 (w = 0.8 %), silicone rubber (w = 77.2 %), KTpClPB (x_i = 21.0 %), DOA (w = 21.6 %), ETH 500 (x_i = 21.0 %)	Li^+, <–5.00; Na^+, <–5.00; K^+, <–5.00; Mg^{2+}, <–5.00	SSM ($E_A = E_B$)	–	10^{-1}	28.5 ± 0.5	10^{-5}–10^{-2}	Ag CWE; $c_{dl} = 10^{-6.54 \pm 0.32}$ M	[4]
		Na^+, –4.3	FIM	–	10^{-1}				
	Ca^{2+}-1 (w = 1.6 %), NaTPB (x_i = 120 %), oNPOE (w = 23.4 %), fluorosilicone rubber (w = 61.4 %)	Na^+, –3.6; K^+, –3.7; Mg^{2+}, –4.4	FIM	–	10^{-1}	30.56 ± 0.68	$10^{-5.2}$–10^{-1}	$c_{dl} = 10^{-5.8}$ M; ISFET	[5]
	Ca^{2+}-1 (w = 1.8 %), KTpClPB (x_i = 69 %), DOS (w = 10 %), silicone rubber (w = 87.3 %)	Na^+, –3.4; K^+, –3.4	FIM	–	10^{-1}	22	–	22 ± 2 °C; τ > 14 d	[6]
	Ca^{2+}-1 (w = 1.0 %), KTFPB (x_i = 68 %), silicone rubber (w = 98.1 %)	Na^+, –3.6; K^+, –3.8	FIM	–	10^{-1}	27.6	–	22 ± 2 °C	[6]
	Ca^{2+}-1 (w = 1.0 %), KTFPB (x_i = 68 %), DOS (w = 10 %), silicone rubber (w = 88.1 %)	Na^+, –3.6; K^+, –3.7	FIM	–	10^{-1}	28.1	–	22 ± 2 °C	[6]
	Ca^{2+}-1 (w = 1.0 %), KTFPB (x_i = 15 %), DOS (w = 8 %), silicone rubber (w = 90.8 %)	Na^+, –2.9; K^+, –3.0	FIM	–	10^{-1}	29.0	–	22 ± 2 °C	[6]
	Ca^{2+}-1 (w = 1.0 %), DOS (w = 10 %), silicone rubber (w = 89.0 %)	Na^+, –0.7; K^+, –0.4	FIM	–	10^{-1}	26	–	22 ± 2 °C	[6]
	Ca^{2+}-1 (w = 1.8 %), KTpClPB (x_i = 77 %), silicone rubber (w = 97.2 %)	Na^+ –2.8	FIM	–	10^{-1}	18	–	22 ± 2 °C; ISFET	[6]
	Ca^{2+}-1 (w = 1.0 %), KTFPB (x_i = 68 %), silicone rubber (w = 98.1 %)	Na^+, –3.7; K^+, –3.8	FIM	–	10^{-1}	28.6	–	22 ± 2 °C; ISFET	[6]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Ca^{2+}-1 (w = 1.0 %), KTFPB (x_i = 68 %), DOS (w = 4.6 %), silicone rubber (w = 93.5 %)	Na^+, –3.7; K^+, –3.8	FIM	–	10^{-1}	28.5	–	22 ± 2 °C; ISFET	[6]
	Ca^{2+}-1, KTpClPB (x_i = 70 %), oNPOE/ PVC–COOH (2:1 by weight) (weight ratio not reported)	Li^+, –2.79 ± 0.03; Na^+, –2.92 ± 0.01; K^+ –3.03 ± 0.03; NH_4^+, –3.14 ± 0.10; Mg^{2+}, –3.66 ± 0.11	SSM	10^{-1}	10^{-1}	29.7 ± 0.21	10^{-5}–10^{-1}	microelec.; 24.5 ± 0.5 °C; Ag/AgCl CWE	[7]
	Ca^{2+}-1, KTpClPB (x_i = 70 %), oNPOE/aliphatic polyurethane (2:1 by weight), (weight ratio not reported)	Li^+ –2.97 ± 0.10; Na^+, –2.83 ± 0.04; K^+, –2.88 ± 0.04; NH_4^+, –3.11 ± 0.12; Mg^{2+}, –3.37 ± 0.12	SSM	10^{-1}	10^{-1}	28.7 ± 0.3	10^{-5}–10^{-1}	microelec.; 24.5 ± 0.5 °C; Ag/AgCl CWE	[7]
	Ca^{2+}-1, KTpClPB (x_i = 70 %), DOS/PVC–COOH (2:1) (weight ratio not reported)	Li^+, –1.98 ± 0.16; Na^+, –2.09 ± 0.14; K^+, –2.49 ± 0.18; NH_4^+, –2.65 ± 0.19; Mg^{2+} –3.49 ± 0.17	SSM	10^{-1}	10^{-1}	29.0 ± 0.1	10^{-5}–10^{-1}	Ag/AgCl CWE; 24.5 ± 0.5 °C	[7]
Ca^{2+}-2	**Ca^{2+}-2**, covalently attached to polysiloxane	Na^+ <–2.6; K^+ <–2.6; NH_4^+,<–2.6; Mg^{2+} <–3.7	MSM	–	–	–	–	ISFET; Poly(hydroxyethyl methacrylate) was covalently attached to SiO_2 FET gate.	[8]
Ca^{2+}-3	**Ca^{2+}-3** (w = 2.5 %), KTPB (x_i = 44 %), PVC (w = 30 %), dinonyl sebacate (w = 66.8 %)	Na^+, –4.2; K^+, –4.4 ; Mg^{2+}, –4.6; Sr^{2+}, –3.1; Ba^{2+}, –3.3; Fe^{2+}, –2.6; Co^{2+}, –3.1; Ni^{2+}, –2.8; Cu^{2+}, –4.1; Zn^{2+}, –2.1; Cd^{2+}, –2.9; Pb^{2+}, –2.7	FIM	–	0.5 Zn^{2+}, 0.1	28.8	$10^{-7.50}$ –10^{-1}	τ > 240 d; 3.5 < pH < 12.3; $c_{dl} = 10^{-8.0}$ M; t_{resp} = 10–30 s	[9]
	Ca^{2+}-3 (w = 2.5 %), KTPB (x_i = 44 %), PVC (w = 30 %), trioctyl phosphate (w = 66.8 %),	Na^+, –3.9; K^+, –4.1; Mg^{2+}, –3.6; Ba^{2+}, –2.5; Zn^{2+},–2.6	FIM	–	0.5 Zn^{2+}, 0.1	–	–		[9]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ca^{2+}-4	**Ca^{2+}-4** (w = 0.56–1 %), oNPOE (w = 66 %), NaTPB (x_i = 16 %), PVC (w = 33 %)	Li^+, –3.30; Na^+, –3.38 K^+, –4.00; NH_4^+, –3.28; Mg^{2+}, –3.12; Sr^{2+}, –3.07; Ba^{2+}, –3.03; Mn^{2+}, –1.00; Co^{2+}, –3.04; Ni^{2+}, –3.06; Zn^{2+},–0.82; Cd^{2+},–2.30	FIM or SSM	– 0.1	0.1 0.1	–	–	25 ± 1 °C	[10]
	Ca^{2+}-4 (w = 0.56–1 %), oNPOE (w = 66 %), NaTPB (x_i = 82 %), PVC (w = 33 %)	Li^+, –4.07; Na^+, –4.0 5; K^+, –4.10; NH_4^+, –3.96; Mg^{2+}, –3.30; Sr^{2+}, –3.24; Ba^{2+}, –3.14; Mn^{2+}, –1.02; Co^{2+}, –3.20; Ni^{2+},–3.14; Zn^{2+}, –1.05; Cd^{2+}, –3.00	FIM or SSM	– 0.1	0.1 0.1	29.0 ± 0.21	10^{-5}–10^{-1}	25 ± 1 °C ; $c_{dl} = 10^{-5.3}$ M; τ = 180 d; 4.2 < pH < 10.8	[10]
	Ca^{2+}-4 (w = 0.56–1 %), oNPOE (w = 66 %), NaTPB (w = 164 %), PVC (w = 33 %)	Li^+, –2.00; Na^+, –1.66; K^+, –1.85; NH_4^+, –1.96; Mg^{2+}, –2.99; Sr^{2+}, –2.80; Ba^{2+}, –2.55; Mn^{2+}, –0.68; Co^{2+}, –2.51; Ni^{2+}, –2.38; Zn^{2+}, –0.49; Cd^{2+}, –1.71	FIM or SSM	– 0.1	0.1 0.1	–	–	25 ± 1 °C	[10]
	Ca^{2+}-4 (w = 0.56–1 %), oNPOE (w = 66 %), NaTpClPB (x_i = 12 %), PVC (w = 33 %)	Li^+, –3.42 ; Na^+, –3.64; K^+, –2.03; NH_4^+, –3.51; Mg^{2+}, –3.19; Sr^{2+}, –3.15; Ba^{2+}, –3.10; Mn^{2+}, –1.02; Co^{2+}, –3.07; Ni^{2+}, –3.07; Zn^{2+},–0.96; Cd^{2+}, –2.38	FIM or SSM	0.1 0.1	– 0.1	–	–	25 ± 1 °C	[10]
	Ca^{2+}-4 (w = 0.56–1 %), oNPOE (w = 66 %), NaTpClPB (x_i = 58 %), PVC (w = 33 %)	Li^+, –4.21; Na^+, –4.1 4; K^+, –4.17; NH_4^+, –4.55; Mg^{2+}, –3.70; Sr^{2+}, –3.43; Ba^{2+},–3.25; Mn^{2+}, –2.66; Co^{2+}, –3.23; Ni^{2+}, –3.25; Zn^{2+}, –1.22; Cd^{2+}, –2.52	FIM or SSM	0.1 0.1	– 0.1	–	–	25 ± 1 °C	[10]
	Ca^{2+}-4 (w = 0.56–1 %), oNPOE (w = 66 %), NaTpClPB (x_i = 120 %), PVC (w = 33 %)	Li^+, –2.38; Na^+, –2.68; K^+, –2.96; NH_4^+, –2.24; Mg^{2+}, –3.28; Sr^{2+}, –3.28; Ba^{2+}, –3.12; Mn^{2+}, –1.30;	FIM or SSM	0.1 0.1	– 0.1	–	–	25 ± 1 °C	[10]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Co^{2+}, –3.16; Ni^{2+}, –3.16; Zn^{2+}, –1.03; Cd^{2+}, –2.42							
	Ca^{2+}-4, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	K^+, –2.28; Mg^{2+},–2.20; Sr^{2+}, –1.72; Ba^{2+}, –1.49	MSM	–	0.1	19.7	$>10^{-4.7}$	–	[11]
Ca^{2+}-5	**Ca^{2+}-5** (w = 4.6 %), KTpClPB (x_i = 48 %), oNPPE (w = 70.8 %), PVC (w = 23.3 %)	Na^+, –3.3; K^+, –2.6; Mg^{2+}, –2.8	MSM	–	Na^+, K^+, 0.2; Mg^{2+}, 0.1	29.8	10^{-5}–10^{-2}	25 °C	[12]
Ca^{2+}-6	**Ca^{2+}-6**(w = 2 %), oNPOE (w = 64 %), PVC (w = 34 %)	Li^+, –1.2; Na^+, –1.3; K^+, –0.8; NH_4^+, –0.1; Mg^{2+}, –1.1	SSM	0.1	0.1	–	–	room temp.; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
	Ca^{2+}-6 (w = 2.1 %), oNPOE (w = 63.3 %), KTpClPB (x_i = 30 %), PVC (w = 33.7 %)	Li^+, –1.3; Na^+, –1.9; K^+, –0.4; NH_4^+, –0.3; Mg^{2+}, 0.0	SSM	0.1	0.1	–	–	room temp.; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
	Ca^{2+}-6 (w = 2.1 %), oNPOE (w = 62.7 %), KTpClPB (x_i = 70 %), PVC (w = 33.4 %)	Li^+, –2.2; Na^+, –2.7; K^+, –1.0; NH_4^+, –1.1; Mg^{2+}, –0.1	SSM	0.1	0.1	28.6	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-5.0}$ M; 5 mM Tris–HCl, pH = 8.8	[13]
	Ca^{2+}-6 (w = 2.1 %), oNPOE (w = 62.6 %), KTpClPB (x_i = 80 %), PVC (w = 33.5 %)	Li^+, –0.9; Na^+, +0.3; K^+, +3.8; NH_4^+, +3.6; Mg^{2+}, –0.3	SSM	0.1	0.1	–	–	room temp.; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
	Ca^{2+}-6 (w = 2.1 %), oNPOE (w = 62.0 %), KTpClPB (x_i = 120 %), PVC (w = 33.1 %)	Li^+, –0.3; Na^+, +1.2; K^+, +3.8; NH_4^+, +3.0; Mg^{2+}, –0.3	SSM	0.1	0.1	–	–	room temp.;[13] 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	
	Ca^{2+}-6 (w = 2.1 %), CP (w = 32.1 %), KTpClPB (x_i = 70 %), PVC (w = 34.2 %), oNPOE (w = 32.1 %)	Li^+, –1.1; Na^+, –1.7; K^+, –1.0; NH_4^+, –0.6; Mg^{2+}, –0.2	SSM	0.1	0.1	25.67	–	room temp.; t_{90} = 5817 ms; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Ca^{2+}-6 (w = 2.1 %), CP (w = 64.2 %), PVC (w = 34.2 %), KTpClPB (x_i = 70 %)	Li^+, –1.0; Na^+, –1.8; K^+, –1.0; NH_4^+, –0.4; Mg^{2+}, –0.3	SSM	0.1	0.1	19.66	–	room temp.; t_{90} = 9229 ms; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-7	**Ca^{2+}-7** (w = 2.1 %), oNPOE (w = 62.4 %), KTpClPB (x_i = 70 %), PVC (w = 33.3 %)	Li^+, –2.6; Na^+, –3.3; K^+, –1.8; NH_4^+, –2.4; Mg^{2+}, –2.2	SSM	0.1	0.1	26.2	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.9}$ M; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-8	**Ca^{2+}-8** (w = 2.1 %), oNPOE (w = 62.4 %), KTpClPB (x_i = 70 %), PVC (w = 35.4 %)	Li^+, –1.8; Na^+, –1.2; K^+, +1.5; NH_4^+, +1.0; Mg^{2+}, –1.2	SSM	0.1	0.1	25.7	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.8}$ M; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-9	**Ca^{2+}-9** (w = 2.1 %), oNPOE (w = 62.3 %), KTpClPB (x_i = 70 %), PVC (w = 33.2 %)	Li^+, –2.9; Na^+, –3.0; K^+, –2.4; NH_4^+, –2.5; Mg^{2+}, –4.0	SSM	0.1	0.1	26.0	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.9}$ M; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-10	**Ca^{2+}-10** (w = 2.1 %), oNPOE (w = 62.6 %), KTpClPB (x_i = 70 %), PVC (w = 33.4 %)	Li^+, –2.9; Na^+, –2.4; K^+, –2.3; NH_4^+, –2.4; Mg^{2+}, –3.7	SSM	0.1	0.1	25.8	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.9}$ M; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-11	**Ca^{2+}-11** (w = 2.1 %), oNPOE (w = 63.1 %), KTpClPB (x_i = 70 %), PVC (w = 33.6 %)	Li^+, –2.6; Na^+, –2.7; K^+, –2.2; NH_4^+, –2.5; Mg^{2+}, –3.6	SSM	0.1	0.1	25.8	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.8}$ M; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-12	**Ca^{2+}-12** (w = 2.1 %), oNPOE (w = 63.1 %), KTpClPB (x_i = 70 %), PVC (w = 33.4 %)	Li^+, 1.4; Na^+, –2.0; K^+, –1.1; NH_4^+, –1.5; Mg^{2+}, –2.6	SSM	0.1	0.1	24.8	10^{-5}–10^{-1}	room temp.; $c_{dl} = 10^{-4.7}$ M; 5 mM Tris–HCl, pH = 8.8; r.o.o.g.	[13]
Ca^{2+}-13	**Ca^{2+}-13** (w = 1.6 %), NaTPB(x_i = 60 ± 5 %), oNPOE (w = 65.2 %),	Li^+, –4.2; K^+, –3.7; NH_4^+,–5.3; Mg^{2+} –4.0; Sr^{2+}, –0.52; Ba^{2+}, –1.2;	MSM	–	Li^+, NH_4^+, 0.1; K^+, Mg^{2+}, 10^{-2};	34 ± 4	10^{-6}–10^{-2}		[14]

† without EGTA.
†† with 4×10^{-4} M EGTA.
††† at pH 9.5.
†††† in unbuffered solution.

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 32.6 %)	Na^+, –4.7†,–4.4††			Sr^{2+},Ba^{2+}, 10^{-3}; Na^+, †0.1, ††10^{-2}				
	Ca^{2+}-13 (w = 1.6 %), oNPOE (w = 65.2 %), 3,3-como-bis(undecahydro-1,2-dicarba -3-cobalta-closododecaborate (x_i = 60 ± 5 %), PVC (w = 32.6 %)	Li^+, –4.0; K^+, –3.2; Mg^{2+}, –3.0; Sr^{2+}–1.0; Ba^{2+}, –1.2; Na^+, –3.8†, –3.3††, –1.6†††	MSM	–	Li^+, 0.1; K^+, Mg^{2+}, 10^{-2} ; Sr^{2+}, Ba^{2+}, 10^{-3}; Na^+, †10^{-1}, ††10^{-2}, †††10^{-3}	43	$10^{-4.2}$–10^{-2}		[14]
	Ca^{2+}-13 (w = 1.6 %), pNPOE (w = 65.2 %), NaTPB (x_i = 60 ± 5 %), PVC (w = 32.6 %)	Li^+, –4.1; Na^+, –4.7; K^+, –4.5; NH_4^+, –5.2; Mg^{2+}, –3.5; Sr^{2+}, –0.46	MSM	–	Li^+, NH_4^+, 0.1; K^+, Mg^{2+}, 10^{-2} ; Sr^{2+}, 10^{-3}	38	$10^{-4.4}$–10^{-2}		[14]
	Ca^{2+}-13, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, –2.5; K^+, –3.0; Mg^{2+}, –4.8; Sr^{2+}, –0.38; Ba^{2+} –1.4	MSM	–	0.1	24.0	–	c_{dl} = $10^{-5.7}$ M	[11]
Ca^{2+}-14	**Ca^{2+}-14**, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, –0.2; Na^+, –1.1; K^+, –1.0; Mg^{2+}, –0.5; Sr^{2+} –0.7; Ba^{2+}, –0.8	MSM	–	0.1	–	–	r.o.o.g.	[11]
Ca^{2+}-15	**Ca^{2+}-15**, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, –0.7; Na^+, –2.7; K^+, –2.9; Mg^{2+}, –1.0; Sr^{2+}, –1.7; Ba^{2+}, –2.0	MSM	–	0.1	–	–	r.o.o.g.	[11]
Ca^{2+}-16	**Ca^{2+}-16**, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, –0.8; Na^+, –0.2; K^+, –0.2; Mg^{2+}, –1.3; Sr^{2+}, –0.8; Ba^{2+}, –1.0	MSM	–	0.1	–	–	r.o.o.g.	[11]
Ca^{2+}-17	**Ca^{2+}-17**, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, –1.9; Na^+, –2.8; K^+, –2.5; Mg^{2+} –1.3; Sr^{2+}, –0.8; Ba^{2+}, –1.5	MSM	–	0.1	–	–	r.o.o.g.	[11]

† without EGTA.
†† with 4×10^{-4} M EGTA.
††† at pH 9.5.
†††† in unbuffered solution.

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ca^{2+}-18	**Ca^{2+}-18**, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, –2.0; Na^+, –2.8; K^+, –2.6; Mg^{2+}, –1.2; Sr^{2+}, –0.7; Ba^{2+}, –1.2	MSM	–	0.1	–	–	r.o.o.g.	[11]
Ca^{2+}-19	**Ca^{2+}-19**, oNPOE, NaTPB or KTpClPB or NaTpClPB, PVC (weight ratio not reported)	Li^+, 2.0; Na^+, –2.8; K^+, –2.5; Mg^{2+}, –1.2; Sr^{2+}, –0.9; Ba^{2+}, –1.2	MSM	–	0.1	–	–	r.o.o.g.	[11]
Ca^{2+}-20	**Ca^{2+}-20** (w = 1.0 %), silicone rubber (w = 99.0 %)	Li^+, –2.16; Na^+, –2.61; K^+, –2.73; Mg^{2+}, –2.88	SSM ($E_A = E_B$)	–	–	41.0	10^{-4}–10^{-2}	Ag CWE	[4]
	Ca^{2+}-20 (w = 0.8 %), silicone rubber (w = 78.0 %), DOA (w = 21.2 %)	Li^+, –2.17; Na^+, –2.10; K^+, –3.63; Mg^{2+}, –4.41	SSM ($E_A = E_B$)	–	–	44.0	10^{-4}–10^{-2}	Ag CWE	[4]
	Ca^{2+}-20 (w = 0.8 %), silicone rubber (w = 78.0 %), BEHS (w = 21.2 %)	Li^+, –1.80; Na^+, –2.40; K^+, <–5.00; Mg^{2+}, <–5.00	SSM ($E_A = E_B$)	–	–	39.6	10^{-4}–10^{-2}	Ag CWE	[4]
	Ca^{2+}-20 (w = 0.8 %), silicone rubber (w = 77.9 %), KTpClPB (x_i = 14.0 %) DOA (w = 21.2 %)	Li^+, –2.30; Na^+, –3.80; K^+, –4.70; Mg^{2+}, –3.10	SSM ($E_A = E_B$)	–	–	28.8	10^{-5}–10^{-2}	Ag CWE; $c_{dl} < 10^{-6}$ M	[4]
	Ca^{2+}-20 (w = 0.8 %), silicone rubber (w = 77.2 %), KTpClPB (x_i = 14.0 %), ETH 500 (x_i = 14.0 %), DOA (w = 21.6 %)	Li^+, <–5.00; Na^+, <–5.00; K^+, <–5.00; Mg^{2+},<–5.00	SSM ($E_A = E_B$)	–	–	28.3 ± 0.5	10^{-5}–10^{-2}	c_{dl} = $10^{-6.57 \pm 0.32}$ M	[4]
		Na^+, –4.3	FIM	–	10^{-1}	–	–		
	Ca^{2+}-20 (10 mmol/kg), NaTFPB (x_i = 50 %), PVC/BEHS (1:2 by weight)	Na^+, –6.2 ± 0.4; K^+, –7.7 ± 0.4; Mg^{2+}, –9.7 ± 0.3	SSM	10^{-2}	10^{-2}	33.2 ± 0.2	10^{-3}–10^{-1}	membranes conditioned in 0.01M NaCl; 21.5 ± 0.5 °C	[15]
	Ca^{2+}-20 (10 mmol/ kg %), NaTFPB (w = 50 %), PVC/DOS (1:2 by weight)	Na^+, –3.6 ± 0.1; K^+ –4.0 ± 0.1; Mg^{2+}, –4.9 ± 0.1	SSM	10^{-2}	10^{-2}	34.9 ± 0.1	10^{-3}–10^{-1}	membranes conditioned in 0.01M $CaCl_2$; 21.5 ± 0.5 °C;	[15]
	Ca^{2+}-20 (membrane composition not reported)	Na^+, –3.1; K^+, –2.8; NH_4^+, <–6.0	–	10^{-4}–10^{-2}	10^{-4}–10^{-3}	41.0	–	FIA K was calculated with generic algorithm.	[16]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Ca^{2+}-20 (w = 24.8 %), KTpClPB (x_i = 55 %), silicone rubber (w = 96.0 %)	Li^+, –4.8; Na^+, –4.9; K^+, –5.0; Mg^{2+}, –5.0	SSM	1.0	10^{-1}	26.95 ± 0.74	$10^{-5.3}$–10^{-1}	$c_{dl} = 10^{-6}$ M	[5]
Ca^{2+}-21	**Ca^{2+}-21** (w = 2.0 %), KTpClPB (x_i = 50 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, +1.8; Na^+, –0.8; K^+, +1.8; Rb^+, +2.7; Cs^+, +4.2; NH_4^+, +1.9; H^+, +1.8; Mg^{2+}, –1.1; Sr^{2+}, –0.4; Ba^{2+}, –0.1	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; $\lg P_{o/w}$ = 2.9 ± 0.2	[17]
	Ca^{2+}-21 (w = 2.0 %), KTpClPB (x_i = 50 %), DOS ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, +2.5; Na^+, +2.3; K^+, +3.3; Rb^+, +3.8; Cs^+, +4.8; NH_4^+, +3.6; H^+, +4.5; Mg^{2+}, –0.4; Sr^{2+}, –0.2; Ba^{2+}, +0.5	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C	[17]
Ca^{2+}-22	**Ca^{2+}-22** (w = 2.0 %), KTpClPB (x_i = 50 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, +1.8; Na^+, –0.6; K^+, +1.6; Rb^+, +2.9; Cs^+, +4.4; NH_4^+, +2.0; H^+, +1.5; Mg^{2+}, –1.3; Sr^{2+}, –0.6; Ba^{2+}, +0.2	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; $\lg P_{o/w}$ = 2.0 ± 0.2	[13]
Ca^{2+}-23	**Ca^{2+}-23** (w = 2.0 %), KTPClPB (x_i = 50 %), oNPOE (w = 66 %), PVC (w = 32 %)	Li^+, –0.4 Na^+, +1.0; K^+, +4.1; Rb^+, +5.3; Cs^+, +6.6; NH_4^+, +3.4; H^+, +1.4; Mg^{2+}, –0.1; Sr^{2+}, +0.1; Ba^{2+}, +0.7	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; $\lg P_{o/w}$ = 2.6 ± 0.2	[17]
Ca^{2+}-24	**Ca^{2+}-24** (w = 2.0 %), KTpClPB (x_i = 50 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, +1.8; Na^+, +0.8; K^+, +3.9; Rb^+, +5.0; Cs^+, +6.4; NH_4^+, +3.3; H^+, +1.8; Mg^{2+}, –0.3; Sr^{2+}, +0.1; Ba^{2+}, +0.6	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; $\lg P_{o/w}$ = 3.1 ± 0.3	[17]
Ca^{2+}-25	**Ca^{2+}-25** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –0.5; Na^+, –1.6; K^+, –1.6; Rb^+, –1.2; Cs^+, –0.3; NH_4^+, –1.6; H^+, +1.7; Mg^{2+}, –2.1; Sr^{2+}, –0.7; Ba^{2+}, –0.5	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; $\lg P_{o/w}$ = 8.1 ± 0.4	[17]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ca^{2+}-26	**Ca^{2+}-26** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –2.0 Na^+, –0.8; K^+, +0.6; Rb^+, +1.7; Cs^+, +3.0; NH_4^+, +0.3; H^+, +1.1; Mg^{2+}, +1.3; Sr^{2+}, –0.7; Ba^{2+}, –0.5	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 7.1 ± 0.4	[17]
Ca^{2+}-27	**Ca^{2+}-27** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –2.6; Na^+, –3.4; K^+, –3.1; Rb^+, –2.9; Cs^+, –2.3; NH_4^+, –2.7; H^+, +2.8; Mg^{2+}, –2.1; Sr^{2+}, –0.5; Ba^{2+}, –0.4	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 6.9 ± 0.4	[17]
Ca^{2+}-28	**Ca^{2+}-28** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –1.7; Na^+, –2.8; K^+, –2.5; Rb^+, –2.6; Cs^+, –2.5; NH_4^+, –2.8; H^+, +1.7; Mg^{2+}, –2.5; Sr^{2+}, –0.9; Ba^{2+}, –0.3	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 6.8 ± 0.4	[17]
Ca^{2+}-29	**Ca^{2+}-29** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –2.8; Na^+, –2.7; K^+, –3.3; Rb^+, –3.2; Cs^+, –3.2; NH_4^+, –3.0; H^+, –2.2; Mg^{2+}, –4.0; Sr^{2+}, –0.4; Ba^{2+}, –0.8	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 7.4 ± 0.4	[17]
Ca^{2+}-30	**Ca^{2+}-30** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –2.7; Na^+, –3.1; K^+, –3.6; Rb^+, –3.5; Cs^+, –3.4; NH_4^+, –3.4; H^+, –2.7; Mg^{2+}, –4.1; Sr^{2+}, –0.8; Ba^{2+}, –1.6	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 7.0 ± 0.4	[17]
Ca^{2+}-31	**Ca^{2+}-31** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.0; Na^+, –3.8; K^+, –4.0; Rb^+, –3.8; Cs^+, –2.7; NH_4^+, –3.8; H^+, –2.5; Mg^{2+}, –4.2; Sr^{2+}, –0.8; Ba^{2+}, –1.4	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 6.9 ± 0.3	[17]
Ca^{2+}-32	**Ca^{2+}-32** (w = 2.0 %), KTpClPB (x_i = 50 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –5.0; Na^+, –2.0; K^+, –1.5; Rb^+, –1.7; Cs^+, –1.7; NH_4^+, –2.5; H^+, –1.5; Mg^{2+}, –3.8; Sr^{2+}, –0.6; Ba^{2+}, –1.4	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 4.1 ± 0.3	[17]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ca^{2+}-33	**Ca^{2+}-33** (w = 2.0 %), KTpClPB (x_i = 50 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –3.8; Na^+, –3.4; K^+, –1.4; Rb^+, –0.2; Cs^+, +0.9; NH_4^+, –1.5; H^+, +0.2; Mg^{2+}, –3.6; Sr^{2+}, –1.0; Ba^{2+}, –1.8	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 7.7 ± 0.4	[17]
Ca^{2+}-34	**Ca^{2+}-34** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –3.5; Na^+, –3.6; K^+, –3.8; Rb^+, –4.0; Cs^+, –3.5; NH_4^+, –4.1; H^+, –3.3; Mg^{2+}, –4.2; Sr^{2+}, –1.0; Ba^{2+}, –3.0	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 14.4 ± 0.4	[17]
Ca^{2+}-35	**Ca^{2+}-35** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.1; Na^+, –4.1; K^+, –4.4; Rb^+, –4.2; Cs^+, –4.0; NH_4^+, –4.2; H^+, –3.6; Mg^{2+}, –5.0; Sr^{2+}, –1.0; Ba^{2+}, –2.1	SSM	10^{-1}	10^{-1}	29†	10^{-5}–10^{-1}	25 ± 0.5 °C; lg $P_{o/w}$ = 14.6 ± 0.4	[17]
	Ca^{2+}-35 (w = 2.0 %), KTpClPB (x_i = 50 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.2; Na^+, –3.8; K^+, –4.0; Rb^+, –4.0; Cs^+, –3.8; NH_4^+, –4.1; H^+, –3.7; Mg^{2+}, –4.2; Sr^{2+}, –1.1; Ba^{2+}, –2.2	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C	[17]
	Ca^{2+}-35 (w = 2.0 %), KTpClPB (x_i = 75 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.2; Na^+, –3.9; K^+, –4.1; Rb^+, –4.0; Cs^+, –3.9; NH_4^+, –4.1; H^+, –3.7; Mg^{2+}, –4.8; Sr^{2+}, –1.1; Ba^{2+}, –2.2	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C	[17]
	Ca^{2+}-35 (w = 2.0 %), KTpClPB (x_i = 125 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.1; Na^+, –3.2; K^+, –1.2; Rb^+, –0.2; Cs^+, +1.2; NH_4^+, –1.9; H^+, +1.0; Mg^{2+}, –3.4; Sr^{2+}, –0.6; Ba^{2+}, +0.7	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C	[17]
Ca^{2+}-36	**Ca^{2+}-36** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %),	Li^+, –2.4; Na^+, –2.4; K^+, –3.1; Rb^+, –3.0; Cs^+, –3.0; NH_4^+, –3.0;	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 9.5 ± 0.2	[17]

† background, 150 mM Na^+, 5 mM K^+, 0.8 mM Mg^{2+}.

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 32 %)	H^+, –3.1; Mg^{2+}, –3.9; Sr^{2+}, –0.9; Ba^{2+}, –2.6							
Ca^{2+}-37	**Ca^{2+}-37** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.2; Na^+, –4.3; K^+, –3.3; Rb^+, –3.3; Cs^+, –1.6; NH_4^+, –4.0; H^+, –2.6; Mg^{2+}, –3.3; Sr^{2+}, –1.6; Ba^{2+}, –1.6	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 2.9 ± 0.2	[17]
Ca^{2+}-38	**Ca^{2+}-38** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –3.5; Na^+, –3.7; K^+, –4.3; NH_4^+, –3.9; H^+, –3.1; Mg^{2+}, –4.5; Sr^{2+}, –1.0; Ba^{2+}, –3.3	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 5.2 ± 0.2	[17]
Ca^{2+}-39	**Ca^{2+}-39** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –3.8; Na^+, –3.9; K^+, –4.3; Rb^+, –4.1; Cs^+, –3.6; NH_4^+ –4.2; H^+, –2.9; Mg^{2+}, –3.6; Sr^{2+}, –0.6; Ba^{2+}, –2.9	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 3.3 ± 0.2	[17]
Ca^{2+}-40	**Ca^{2+}-40** (w = 2.0 %), KTpClPB (x_i = 100 %), oNPOE ($w \approx$ 66 %), PVC (w = 32 %)	Li^+, –4.9; Na^+, –4.8; K^+, –4.8; Rb^+, –4.6; Cs^+, –3.9; NH_4^+, –4.4; H^+, –3.4; Mg^{2+}, –5.1; Sr^{2+}, –1.0; Ba^{2+}, –2.3	SSM	10^{-1}	10^{-1}	–	–	25 ± 0.5 °C; lg $P_{o/w}$ = 3.1 ± 0.2	[17]
Ca^{2+}-41	**Ca^{2+}-41** (w = 1.3 %), KTpClPB (x_i = 50 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	Na^+, –3.5; K^+, –3.5; Mg^{2+}, –3.1	FIM	–	10^{-1}	–	10^{-6}–10^{-3}	37 °C; $c_{dl} < 10^{-3.9}$ M	[18]
	Ca^{2+}-42 (w = 1.3 %), KTpClPB (x_i = 50 %), BBPA (w = 65.4 %), PVC (w = 32.8 %)	Na^+, –2.8; K^+, –2.7; Mg^{2+}, –3.3	FIM	–	10^{-1}	–	–	37 °C	[18]
Ca^{2+}-42	**Ca^{2+}-42** (w = 1.3 %), KTpClPB (x_i = 53 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	Na^+, –2.3; K^+, –3.2; Mg^{2+}, –4.8	FIM	–	10^{-1}	25	10^{-6}–10^{-3}	37 °C; $c_{dl} < 10^{-4.0}$ M	[18]
Ca^{2+}-43	**Ca^{2+}-43** (w = 1.3 %), KTpClPB (x_i = 37 %),	Na^+, –0.1; K^+, –0.1; Mg^{2+}, –3.4	FIM	–	10^{-1}	–	–	37 °C	[18]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 65.4 %), PVC (w = 32.8 %)								
Ca^{2+}-44	**Ca^{2+}-44** (w = 1.3 %), KTpClPB (x_i = 57 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	Na^+, –1.2; K^+, –2.1; Mg^{2+}, –1.5	FIM	–	10^{-1}	–	–	37 °C	[18]
Ca^{2+}-45	**Ca^{2+}-45** (w = 1.3 %), KTpClPB (x_i = 40 %), oNPOE (w = 65.4 %), PVC (w = 32.8 %)	Na^+, –0.1; K^+, –0.1; Mg^{2+}, –3.8	FIM	–	10^{-1}	–	–	37 °C	[18]
Ca^{2+}-46	**Ca^{2+}-46** (w = 0.66 %), KTpClPB (x_i = 33 %), oNPOE (w = 66.18 %), PVC (w = 33.09 %)	Li^+, –1.6; Na^+, –2.2; K^+, –2.7; NH_4^+, –2.0; Mg^{2+}, –2.6	SSM	10^{-2}	10^{-2}	26.3	10^{-4}–10^{-1}	τ = 42 d	[19]
Ca^{2+}-47	**Ca^{2+}-47**, KTpClPB, oNPOE, PVC (weight ratio not reported)	Li^+, –2.2; Na^+, –2.4; K^+, –2.0; Mg^{2+}, –3.6; Zn^{2+}, –2.4	FIM	–	–	N	10^{-5}–10^{-1}	lg $P_{o/w}$ = 4.0	[20]
Ca^{2+}-48	**Ca^{2+}-48,** KTpClPB, oNPOE, PVC (weight ratio not reported)	Li^+, –2.5; Na^+, –2.4; K^+, –1.9; Mg^{2+}, –3.1; Zn^{2+}, –2.1	FIM	–	–	N	10^{-5}–10^{-1}	lg $P_{o/w}$ = 6.6	[20]
Ca^{2+}-49	**Ca^{2+}-49**, KTpClPB, oNPOE, PVC (weight ratio not reported)	Li^+, –3.0; Na^+, –2.5; K^+, –2.1; Mg^{2+}, –3.0; Zn^{2+}, –2.6	FIM	–	–	N	10^{-5}–10^{-1}	lg $P_{o/w}$ = 6.5	[20]
Ca^{2+}-50	**Ca^{2+}-50**, KTpClPB, oNPOE, PVC (weight ratio not reported)	Li^+, –2.3; Na^+, –2.1; K^+, –1.7; Mg^{2+}, –3.2; Zn^{2+}, –2.4	FIM	–	–	–	–	lg $P_{o/w}$ = 5.6	[20]
Ca^{2+}-51	**Ca^{2+}-51** (w = 3 %), oNPOE (w = 65 %), PVC (w = 32 %)	Li^+, –0.3; Na^+, +2.0; K^+, –0.5; Rb^+, –1.6; Sr^{2+}, –0.5	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 0.22 %), oNPOE (w = 65 %), PVC (w = 32 %)	Li^+, –0.8; Na^+, +1.8; K^+, –1.0; Rb^+, –2.2; Sr^{2+}, –0.5	SSM	–	–	–	–	22 ± 1 °C ; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 0.58 %),	Li^+, –1.2; Na^+, +1.5; K^+, –1.4; Rb^+, –2.4;	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 65 %), PVC (w = 32 %)	Sr^{2+}, –0.5							
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 1.2 %), oNPOE (w = 65 %), PVC (w = 32 %)	Li^+, –1.5; Na^+, +1.2; K^+, –1.6; Rb^+, –2.6; Sr^{2+}, –0.5	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 2.85 %), oNPOE (w = 65 %), PVC (w = 32 %)	Li^+, –1.8; Na^+, +0.7; K^+, –1.9; Rb^+, –2.7; Sr^{2+}, –0.5	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 0.025 %), oNPOE (w = 65 %), aliphatic polyurethane (w = 32 %)	K^+, –0.7	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 0.05 %), oNPOE (w = 65 %), aliphatic polyurethane (w = 32 %)	K^+, –1.0	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 0.1 %), oNPOE (w = 65 %), aliphatic polyurethane (w = 32 %)	K^+, –1.3	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
	Ca^{2+}-51 (w = 3 %), KTpClPB (x_i = 0.2 %), oNPOE (w = 65 %), aliphatic polyurethane (w = 32 %)	K^+, –1.6	SSM	–	–	–	–	22 ± 1 °C; r.o.o.g.	[21]
Ca^{2+}-52	**Ca^{2+}-52** in DOPP (100 µL), ethylene-vinyl acetate (350 mg), DOP (1 mL), nitrobenzene (1 mL)	Li^+, <–4; Na^+, <–4; K^+, <–4; Mg^{2+}, –1.4; Sr^{2+}, –1.3; Ba^{2+}, –0.35; Mn^{2+}, –0.52; Fe^{2+}, <–4; Co^{2+}, –1.5; Ni^{2+}, –1.6; Cu^{2+}, –1.7; Zn^{2+}, –1.5; Cd^{2+}, –1.3; Sn^{2+}, –1.5; Hg^{2+}, –2.2; Pb^{2+}, –1.6	FIM	–	Fe^{2+}, Pb^{2+}, Sn^{2+}, Cd^{2+}, 10^{-3}; others, 10^{-2}	26	10^{-5}–10^{-1}	room temp.; τ > 180 d; 8 < pH < 11	[22]
		Li^+, <–4; Na^+, <–4; K^+, < –4; Mg^{2+}, –1.7; Sr^{2+}, –2.3; Ba^{2+}, –1.5;	SSM ($E_A = E_B$)	–	–	–	–		

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Mn^{2+}, –0.57; Fe^{2+}, <–4; Co^{2+}, –2.3; Ni^{2+}, –2.1; Cu^{2+}, –2.4; Zn^{2+}, –1.6; Cd^{2+}, –3.0; Sn^{2+}, <–4; Hg^{2+}, –2.3; Pb^{2+}, –3.2							
	Ca^{2+}-52 in DOPP (100 μL), PVC (300 mg), DOP (1mL), nitrobenzene (1mL)	Na^+, < –4; K^+, –2.2; Mg^{2+}, –1.6; Mn^{2+}, –0.70; Cu^{2+}, +1.0; Zn^{2+}, –1.4; Hg^{2+}, –2.0	FIM	–	10^{-3}	24	–	8 < pH < 11	[22]
		Na^+, <–4; K^+, <–4: Mg^{2+}, <–3; Mn^{2+}, –0.40; Zn^{2+}, –1.5; Hg^{2+}, –0.52	SSM ($E_A = E_B$)	–	10^{-3}	–	–	–	
Ca^{2+}-53	**Ca^{2+}-53**, DOPP, PVC (weight ratio not reported)	Na^+, –2.7; K^+, –3.0; Mg^{2+}, –3.1; Ba^{2+}, –2.1; Fe^{2+}, –1.3; Cu^{2+}, –2.1	FIM	–	–	26.8 ± 2.2	–	ISFET, Ta_2O_5 gate; τ > 120 d; 5 < pH < 9	[23]
Ca^{2+}-54	**Ca^{2+}-54** (w = 6.0 %), KTpClPB (x_i = 8 %), aromatic epoxyacrylate (w = 44.8 %), copolymerizable benzophenone photo-initiator (w = 5.4 %), DOPP (w = 19.9 %), 1,6–hexanediyl diacrylate (w = 22.4 %)	Li^+, –4.9; Na^+, –4.5; K^+, –4.5; NH_4^+, –4.5; Mg^{2+}, –1.7; Sr^{2+}, –1.85; Ni^{2+}, –2.9; Cu^{2+}, –1.9; Ba^{2+}, Zn^{2+}, interfere	FIM	–	–	31.0	10^{-5}–10^{-1}	FIA; photocured membrane; pH > 4	[24]
	Ca^{2+}-54 (w = 6.0 %), DOPP (w = 65.0 %), PVC (w = 29.0 %)	Li^+, –3.14; Na^+, –3.34; K^+, –3.24; Rb^+, –3.18; Cs^+, –3.08; NH_4^+, –3.38; H^+, –1.44; Mg^{2+}, –3.89; Sr^{2+}, –1.64; Ba^{2+}, –3.48	FIM	–	0.15	–	–	–	[25]
	Ca^{2+}-54 (w = 0.20 %), KTFPB (x_i = 70.9 %), oNPOE (w = 66.5 %), PVC (w = 33.0 %)	Li^+, +0.7; Na^+, +2.4; K^+, +6.0; Rb^+, +7.0; Cs^+, +8.0; NH_4^+, +5.0; H^+, +3.0; Mg^{2+}, –0.6; Sr^{2+}, +0.1; Ba^{2+}, +0.9	SSM	10^{-1}	10^{-1}	24.8 ± 0.9	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.21 %), KTFPB (x_i = 29.6 %),	Li^+, +0.3; Na^+, +2.4; K^+, +6.0; Rb^+, +7.0;	SSM	10^{-1}	10^{-1}	25.3 ± 0.3	10^{-4}–10^{-1}	r.o.o.g.; 22 C	[26]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 66.7 %), PVC (w = 33.0 %)	Cs^+, +8.0; NH_4^+, +5.1; H^+, +3.3; Mg^{2+}, –0.5; Sr^{2+}, –0.5; Ba^{2+}, –0.2							
	Ca^{2+}-54 (w = 0.14 %), KTFPB (x_i = 10.5 %), oNPOE (w = 66.8 %), PVC (w = 33.0 %)	Li^+, –0.6; Na^+, +0.6; K^+, +3.8; Rb^+, +5.5; Cs^+, +6.9; NH_4^+, + 3.7; H^+, +4.5; Mg^{2+}, –0.2; Sr^{2+}, +0.3; Ba^{2+}, –0.3	SSM	10^{-1}	10^{-1}	11.2 ± 2.4	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.18 %), oNPOE (w = 66.54 %), PVC (w = 33.28 %)	Li^+, –0.2; Na^+, +0.6; K^+, –0.5; Rb^+, –0.3; Cs^+, 0.7; NH_4^+, –0.5; H^+, +4.5; Mg^{2+}, +0.5; Sr^{2+}, –0.5; Ba^{2+}, +0.5	SSM	10^{-1}	10^{-1}	13.4 ± 0.3	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.10 %), TDDMACl (x_i = 16.3 %), oNPOE (w = 66.9 %), PVC (w = 33.0 %)	Li^+, –2.1; Na^+, –1.9; K^+, –1.7; Rb^+, –1.7; Cs^+, –0.6; NH_4^+, –1.0; H^+, +5.3; Mg^{2+}, –1.0; Sr^{2+}, –0.5; Ba^{2+}, –0.2	SSM	10^{-1}	10^{-1}	23.2 ± 0.4	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.21 %), TDDMACl (x_i = 37.3 %), oNPOE (w = 66.7 %), PVC (w = 33.0 %)	Li^+, –2.3; Na^+, –2.8; K^+, –2.7; Rb^+, –2.6; Cs^+, –2.4; NH_4^+, –2.7; H^+, +3.8; Mg^{2+}, –1.1; Sr^{2+}, –0.3; Ba^{2+}, –0.1	SSM	10^{-1}	10^{-1}	26.8 ± 0.1	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.20 %), TDDMACl (x_i = 79.0 %), oNPOE (w = 66.6 %), PVC (w = 33.0 %)	Li^+, –1.4; Na^+, –1.0; K^+, –0.9; Rb^+, –1.4; Cs^+, –1.9; NH_4^+, –0.7; H^+, +5.3; Mg^{2+}, –0.9; Sr^{2+}, –1.0; Ba^{2+}, –1.1	SSM	10^{-1}	10^{-1}	24.6 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.11 %), KTFPB (x_i = 177.8 %), BEHS (w = 66.5 %), PVC (w = 33.0 %)	Li^+, +4.2; Na^+, +4.9; K^+, +5.8; Rb^+, +5.9; Cs^+, +6.0; NH_4^+, +5.5; H^+ +6.4; Mg^{2+}, –0.5; Sr^{2+}, +0.2; Ba^{2+}, +0.1	SSM	10^{-1}	10^{-1}	23.0 ± 1.3	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.16 %), KTFPB (x_i = 30.3 %),	Li^+, –1.5; Na^+, +2.0; K^+, +4.2; Rb^+, +5.5;	SSM	10^{-1}	10^{-1}	33.8 ± 1.7	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	BEHS (w = 66.75 %), PVC (w = 33.0 %)	Cs^+, +6.0; NH_4^+, +4.8; H^+, +6.3; Mg^{2+}, –3.5; Sr^{2+}, –2.9; Ba^{2+}, –4.0							
	Ca^{2+}-54 (w = 0.10 %), KTFPB (x_i = 20.3 %), BEHS (w = 66.86 %), PVC (w = 33.0 %)	Li^+, –4.3; Na^+, –4.0; K^+, –3.4; Rb^+, –3.3; Cs^+, 2.9; NH_4^+, –3.0; H^+, –2.5; Mg^{2+}, –6.5; Sr^{2+}, –3.0; Ba^{2+}, –4.1	SSM	10^{-1}	10^{-1}	31.9 ± 2.3	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.09 %), KTFPB (x_i = 12.9 %), BEHS (w = 66.89 %), PVC (w = 33.0 %)	Li^+, –4.3; Na^+, –4.1; K^+, –3.3; Rb^+, –2.8; Cs^+, –2.8; NH_4^+, –3.4; H^+, –2.1; Mg^{2+}, –5.5; Sr^{2+}, –3.2; Ba^{2+}, –4.0	SSM	10^{-1}	10^{-1}	36.5 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.19 %), BEHS (w = 66.81 %), PVC (w = 33.0 %)	Li^+, –3.1; Na^+, –3.9; K^+, –3.6; Rb^+, –4.8; Cs^+, –5.2; NH_4^+, –3.6; H^+, –3.7; Mg^{2+}, –2.0; Sr^{2+}, –3.8; Ba^{2+}, –3.9	SSM	10^{-1}	10^{-1}	34.1 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.10 %), TDDMACl (x_i = 15.9 %), BEHS (w = 66.88 %), PVC (w = 33.0 %)	Li^+, –1.0; Na^+, –1.5; K^+, –1.2; Rb^+, –1.6; Cs^+, –1.6; NH_4^+, –1.5; H^+, +4.6; Mg^{2+}, –1.1; Sr^{2+}, +1.0; Ba^{2+}, +1.2	SSM	10^{-1}	10^{-1}	25.3 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.20 %), TDDMACl (x_i = 35.2 %), BEHS (w = 66.72 %), PVC (w = 33.0 %)	Li^+, –2.3; Na^+, –2.5; K^+, –2.5; Rb^+, –2.4; Cs^+, –2.2; NH_4^+, –2.4; H^+, +3.3; Mg^{2+}, –1.8; Sr^{2+}, +0.1; Ba^{2+}, +0.5	SSM	10^{-1}	10^{-1}	24.7 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 0.10 %), TDDMACl (x_i = 81.3 %), BEHS (w = 66.81 %), PVC (w = 33.0 %)	Li^+, –2.0; Na^+, –2.1; K^+, –2.1; Rb^+, –2.4; Cs^+, –2.9; NH_4^+, –1.7; H^+, +5.2; Mg^{2+}, –1.0; Sr^{2+}, –1.4; Ba^{2+}, –1.2	SSM	10^{-1}	10^{-1}	26.7 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), KTFPB (x_i = 70.6 %),	Li^+, +1.5; Na^+, –0.9; K^+, –1.7; Rb^+, –2.0;	SSM	10^{-1}	10^{-1}	29.1 ± 0.4	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	DOPP (w = 63.71 %), PVC (w = 33.0 %)	Cs^+, –2.0; NH_4^+, –0.1; H^+, +3.4; Mg^{2+}, –1.1; Sr^{2+}, –1.3; Ba^{2+}, –1.1							
	Ca^{2+}-54 (w = 0.9 %), KTFPB (x_i = 38.2 %), DOPP (w = 64.45 %), PVC (w = 33.0 %)	Li^+, +0.4; Na^+, –2.0; K^+, –2.8; Rb^+, –3.0; Cs^+, –3.0; NH_4^+, –1.0; H^+, +2.1; Mg^{2+}, –1.5; Sr^{2+}, –1.5; Ba^{2+}, –1.5	SSM	10^{-1}	10^{-1}	29.2 ± 0.6	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), KTFPB (x_i = 19.9 %), DOPP (w = 64.63 %), PVC (w = 33.0 %)	Li^+, –1.6; Na^+, –2.8; K^+,, –4.0; Rb^+, –4.0; Cs^+, –4.5; NH_4^+ –2.8; H^+, +0.3; Mg^{2+}, –3.0; Sr^{2+}, –1.8; Ba^{2+}, –3.0	SSM	10^{-1}	10^{-1}	29.5 ± 0.1	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), KTFPB (x_i = 11.7 %), DOPP (w = 64.78 %), PVC (w = 33.0 %)	Li^+, –2.0; Na^+,–4.0; K^+, –4.6; Rb^+, –4.7; Cs^+, –4.7; NH_4^+, –3.0; H^+, +0.1; Mg^{2+}, –3.2; Sr^{2+}, –1.9; Ba^{2+}, –3.2	SSM	10^{-1}	10^{-1}	29.5 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), DOPP (w = 66.0 %), PVC (w = 33.0 %)	Li^+, –2.3; Na^+, –4.4; K^+, –4.0; Rb^+, –4.8; Cs^+, –4.3; NH_4^+, –3.0; H^+, +0.2; Mg^{2+}, –3.2; Sr^{2+}, –1.9; Ba^{2+}, –3.2	SSM	10^{-1}	10^{-1}	29.4 ± 0.1	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), TDDMACl (x_i = 10.5 %), DOPP (w = 65.88 %), PVC (w = 33.0 %)	Li^+, –2.4; Na^+, –4.0; K^+, –3.7; Rb^+, –3.8; Cs^+, –3.7; NH_4^+ –2.8; H^+, +1.4; Mg^{2+}, –2.8; Sr^{2+}, –1.9; Ba^{2+}, –3.0	SSM	10^{-1}	10^{-1}	29.0 ± 0.4	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), KTFPB (x_i = 32.2 %), DOPP (w = 65.62 %), PVC (w = 33.0 %)	Li^+, –2.1; Na^+, –3.8; K^+, –3.4; Rb^+, –4.2; Cs^+, –3.0; NH_4^+, –2.8; H^+, +2.2; Mg^{2+}, –2.6; Sr^{2+}, –2.0; Ba^{2+}, –2.8	SSM	10^{-1}	10^{-1}	27.2 ± 0.1	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-54 (w = 1.0 %), KTFPB (x_i = 60.8 %),	Li^+, –2.0; Na^+, –3.0; K^+, –2.9; Rb^+, –3.1;	SSM	10^{-1}	10^{-1}	28.0 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	DOPP (w = 65.39 %), PVC (w = 33.0 %)	Cs^+, –3.0; NH_4^+, –2.5; H^+, +2.6; Mg^{2+}, –2.2; Sr^{2+}, –1.9; Ba^{2+}, –2.5							
	Ca^{2+}-54 (w = 1.0 %), KTFPB (x_i = 87.2 %), DOPP (w = 64.97 %), PVC (w = 33.0 %)	Li^+, –0.7; Na^+, –1.5; K^+, –1.5; Rb^+, –2.3; Cs^+, –1.4; NH_4^+, –1.3; H^+, +2.5; Mg^{2+}, –1.5; Sr^{2+}, –1.4; Ba^{2+}, –2.0	SSM	10^{-1}	10^{-1}	23.7 ± 1.0	10^{-4}–10^{-1}	r.o.o.g.; 25 ± 0.1 °C	[26]
Ca^{2+}-55	**Ca^{2+}-55** (w = 6.3 %), oNPOE (w = 63.2 %), PVC (w = 30.5 %)	Li^+, –3.80; Na^+, –4.10 ; K^+, –3.50; NH_4^+, –2.90; Mg^{2+}, –2.10; Sr^{2+}, –1.60; Ba^{2+}, –1.50; Co^{2+}, –0.88; Cu^{2+}, +0.09; Zn^{2+}, –1.60	SSM	–	–	30.03	10^{-4}–10^{-1}	25 ± 0.1 °C; CWE; τ = 90–120 d	[27]
	Ca^{2+}-55 (w = 6.3 %), TBEP* (w = 63.2 %), PVC (w = 30.5 %)	Li^+, –2.80; Na^+, –2.80; K^+, –3.10; NH_4^+, –2.20; Mg^{2+}, –1.60; Sr^{2+} –1.70; Ba^{2+}, –0.56; Co^{2+}, –0.63; Cu^{2+}, –0.43; Zn^{2+}, –1.40	SSM	–	–	29.88	10^{-5}–10^{-1}	25 ± 0.1 °C; CWE; τ = 90–120 d * tributoxy-ethyl phosphate	[27]
Ca^{2+}-56	**Ca^{2+}-56** (w = 3.4 %), DOPP (w = 73.4 %), PVC (w = 23.0 %)	Mg^{2+},–2.35; Ba^{2+}, –2.19; Ni^{2+}, –2.52; Cu^{2+}, –1.37; Zn^{2+}, –1.15; Pb^{2+}, –0.74;	SSM	10^{-2}	10^{-2}	–	–	CWE	[28]
	Ca^{2+}-56 (w = 3.4 %), DOPP (w = 88.1 %), ferrocene (w = 0.8 %), PVC (w = 22.8 %)	Mg^{2+}, –1.72; Ba^{2+}, –1.70; Ni^{2+}, –2.03; Cu^{2+}, –0.22; Zn^{2+}, +0.49; Pb^{2+}, +0.32	SSM	10^{-2}	10^{-2}	-	-	CWE	[28]
Ca^{2+}-57	**Ca^{2+}-57** (w = 1.1 %), KTFPB (x_i = 48.7 %), BEHS (w = 64.9 %), PVC (w = 33.0 %)	Li^+, +2.6; Na^+, +3.0; K^+, +4.0; Rb^+, +4.2; Cs^+, +4.3; NH_4^+, +3.9; H^+, +4.8	SSM	10^{-1}	10^{-1}	27.8 ± 0.1	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-57 (w = 1.1 %), KTFPB (x_i = 9.1 %), BEHS (w = 65.7 %), PVC (w = 33.0 %)	Li^+, +0.3; Na^+, +0.5; K^+, +1.4; Rb^+, +1.9; Cs^+, +2.0; NH_4^+, +1.4; H^+ +2.1	SSM	10^{-1}	10^{-1}	30.0 ± 0.2	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-57 (w = 1.1 %),	Li^+, –1.4; Na^+ –1.3;	SSM	10^{-1}	10^{-1}	29.4 ± 0.5	10^{-4}–10^{-1}	r.o.o.g.;	[26]

Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ca^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	BEHS (w = 65.9 %), PVC (w = 33.0 %)	K^+, –0.7; Rb^+, –0.6; Cs^+, –0.2; NH_4^+, –0.6; H^+, –1.3						22 °C	
	Ca^{2+}-57 (w = 1.0 %), TDDMACl (x_i = 9.5 %), BEHS (w = 65.9 %), PVC (w = 33.0 %)	Li^+, –1.0; Na^+, –0.8; K^+, –0.2; Rb^+, –0.1; Cs^+, 0.0; NH_4^+, –0.1; H^+, +0.2	SSM	10^{-1}	10^{-1}	29.1 ± 0.6	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-57 (w = 1.1 %), TDDMACl (x_i = 47.9 %), BEHS(w = 65.4 %), PVC (w = 33.0 %)	Li^+, –2.3; Na^+ –1.4; K^+, –1.0; Rb^+, –1.0; Cs^+, –1.0; NH_4^+, –0.9; H^+, +1.0	SSM	10^{-1}	10^{-1}	29.2 ± 0.3	10^{-4}–10^{-1}	r.o.o.g.; 22 °C	[26]
	Ca^{2+}-57 (w = 1.0 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, –1.3; Na^+, –0.8; K^+, +0.2; Rb^+, +0.7; Cs^+, +1.4; Mg^{2+}, –0.4; Sr^{2+}, +0.1; Ba^{2+}, +0.4	SSM	10^{-1}	10^{-1}	24.8 ± 0.9	10^{-4}–10^{-1}	22 ± 1 °C; τ > 30 d; r.o.o.g.	[29]
	Ca^{2+}-57 (w = 1.0 %), TDDMACl (x_i = 9.1 %), oNPOE (w = 65.9 %), PVC (w = 33 %)	Li^+, –1.5; Na^+, –1.1; K^+, –0.6; Rb^+, –0.4; Cs^+, –0.2; Mg^{2+}, –0.5; Sr^{2+}, +0.2; Ba^{2+}, +0.5	SSM	10^{-1}	10^{-1}	28.2 ± 0.2	10^{-4}–10^{-1}	22 ± 1 °C; τ > 30 d; r.o.o.g.	[29]
	Ca^{2+}-57 (w = 1.0 %), TDDMACl (x_i = 47.6 %), oNPOE (w = 65.4 %), PVC (w = 33 %)	Li^+, –1.7; Na^+, –1.4; K^+, –1.1; Rb^+, –0.9; Cs^+, –0.7; Mg^{2+}, –0.5; Sr^{2+}, –0.1; Ba^{2+}, +0.4	SSM	10^{-1}	10^{-1}	28.6 ± 0.2	10^{-4}–10^{-1}	22 ± 1 °C; τ > 30 d; r.o.o.g.	[29]

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Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

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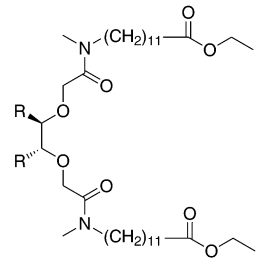
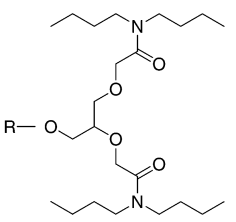
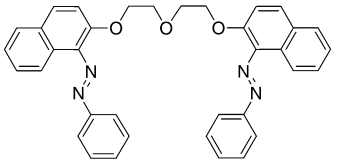


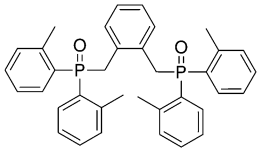
Ca^{2+}-1 (ETH 1001, M_r = 685.00): R = CH_3



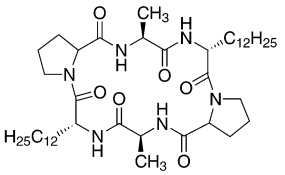
Ca^{2+}-2: R = polysiloxane



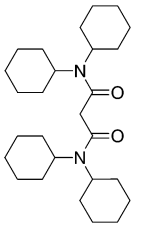
Ca^{2+}-3 (M_r = 566.66)



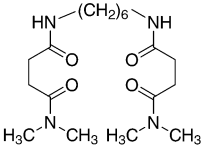
Ca^{2+}-4 (M_r = 562.63)



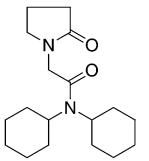
Ca^{2+}-5 (M_r = 787.14)



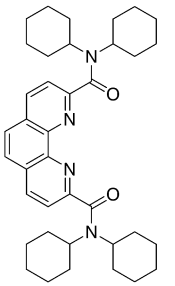
Ca^{2+}-6 (M_r = 430.67)



Ca^{2+}-7 (M_r = 370.49)

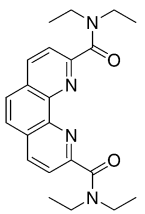


Ca^{2+}-8 (M_r = 306.45)

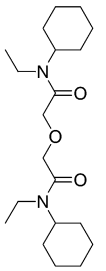


Ca^{2+}-9 (M_r = 594.84)

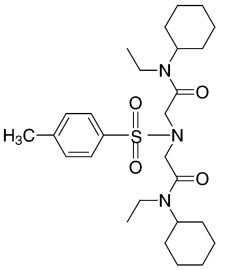
Table 9: Ca^{2+}-Selective Electrodes (*Continued*)



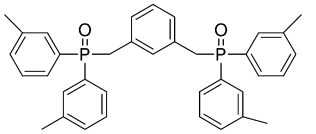
Ca^{2+}-10 (M_r = 378.47)



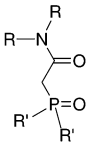
Ca^{2+}-11 (M_r = 352.52)



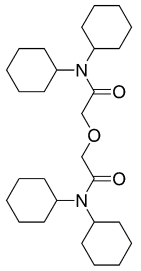
Ca^{2+}-12 (M_r = 505.71)



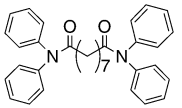
Ca^{2+}-13 (M_r = 562.63)



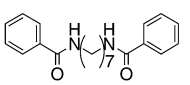
Ca^{2+}-14 (M_r = 214.31): R=C_2H_5, R'=C_2H_5
Ca^{2+}-15 (M_r = 270.41): R=C_4H_9, R'=C_2H_5
Ca^{2+}-16 (M_r = 302.41): R=OC_4H_9, R'=C_2H_5
Ca^{2+}-17 (M_r = 310.39): R=C_6H_5, R'=C_2H_5
Ca^{2+}-18 (M_r = 366.50): R=C_6H_5, R'=C_4H_9
Ca^{2+}-19 (M_r = 478.72): R=C_6H_5, R'=C_8H_{17}



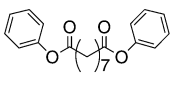
Ca^{2+}-20 (ETH 129, M_r = 460.70)



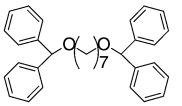
Ca^{2+}-21 (M_r = 490.64)



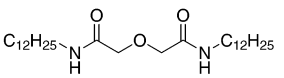
Ca^{2+}-22 (M_r = 338.45)



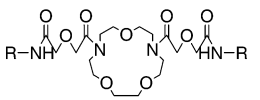
Ca^{2+}-23 (M_r = 340.42)



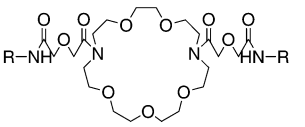
Ca^{2+}-24 (M_r = 464.45)



Ca^{2+}-33 (M_r = 468.76)



Ca^{2+}-29 (M_r = 785.12): R=$C_{12}H_{25}$
Ca^{2+}-34 (M_r = 997.49): R=$C_{18}H_{37}$



Ca^{2+}-31 (M_r = 873.22): R=$C_{12}H_{25}$
Ca^{2+}-35 (M_r = 1041.54): R=$C_{18}H_{37}$
Ca^{2+}-40 (M_r = 873.22): R=$C_{10}H_{15}$ (adamantyl)

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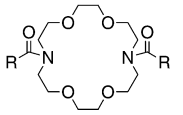
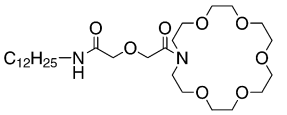
Table 9: Ca^{2+}-Selective Electrodes (*Continued*)

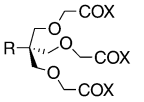


Ca^{2+}-25 (M_r = 655.01): R=$C_{12}H_{25}$
Ca^{2+}-26 (M_r = 769.12): R=$CH_2CONHC_{12}H_{25}$
Ca^{2+}-27 (M_r = 797.17): R=$C_2H_4CONHC_{12}H_{25}$
Ca^{2+}-28 (M_r = 825.22): R=$C_3H_6CONHC_{12}H_{25}$
Ca^{2+}-30 (M_r = 829.17): R=$CH_2OCH_2CONHC_{12}H_{25}$
Ca^{2+}-36 (M_r = 941.38): R=$CH_2OCH_2CON(C_8H_{17})_2$
Ca^{2+}-37 (M_r = 652.78): R=$CH_2OCH_2CONC_6H_{10}NC_6H_{10}$; NC_6H_{10} =

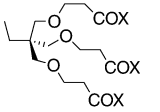
Ca^{2+}-38 (M_r = 821.11): R=$CH_2OCH_2CON(C_6H_{11})_2C_6H_{11}$
Ca^{2+}-39 (M = 760.97): R=CH OCH CONHC H (adamantyl)



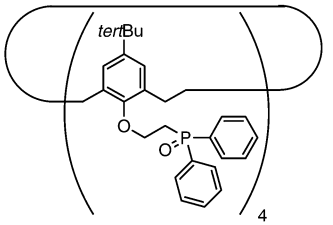
Ca^{2+}-32 (M_r = 546.74)



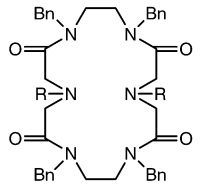
Ca^{2+}-41 (M_r = 641.97): R=Et, X=NBu_2
Ca^{2+}-42 (M_r = 690.02): R=Ph, X=NBu_2
Ca^{2+}-43 (M_r = 476.61): R=Et, X=OBu



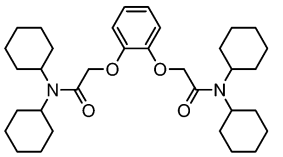
Ca^{2+}-44 (M_r = 684.05): X=NBu_2
Ca^{2+}-45 (M_r = 518.69): X=OBu



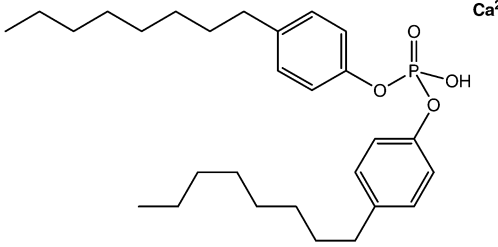
Ca^{2+}-46 (M_r = 1617.95)



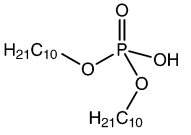
Ca^{2+}-47 (M_r = 818.97): R=COO(tBu)Boc
Ca^{2+}-48 (M_r = 646.79): R=Me
Ca^{2+}-49 (M_r = 788.94): R=CH_2CONMe_2
Ca^{2+}-50 (M_r = 800.96): R=CH_2Py



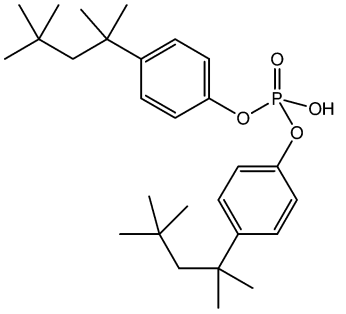
Ca^{2+}-51 (M_r = 552.80)



Ca^{2+}-53 (M_r = 474.62)

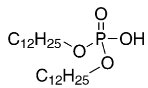


Ca^{2+}-52 (M_r = 378.53)

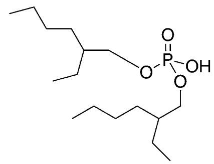


Ca^{2+}-54 (M_r = 474.62)

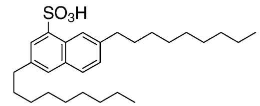
Table 9: Ca^{2+}-Selective Electrodes (*Continued*)



Ca^{2+}-55 (M_r = 434.64)



Ca^{2+}-56 (M_r = 322.42)



Ca^{2+}-57 (M_r = 460.30)

Table 10: Sr^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Sr^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Sr^{2+}-1	0.2–0.5g Sr·Igepal CO-880·2B(C_6H_5)$_4$ in 5 mL 4-ethylnitrobenzene (Igepal CO-880: nonylphenoxy-poly(ethyleneoxy)ethanol)	Li^+, –2.7; Na^+, –2.7; K^+, –2.1; Cs^+, +2.3; NH_4^+, –2.7; H^+, –3.3; Mg^{2+}, –3.2; Ca^{2+}, –2.7; Al^{3+}, –2.7; Ba^{2+}, +2.5; Mn^{2+}, –3.2; Fe^{2+}, –3.1; Fe^{3+}, –2.4; Co^{2+}, –3.1; Ni^+, –3.0; Zn^{2+}, –2.7; $(CH_3)_4N^+$, >3.0;	SSM	0.1	0.1	27	$>10^{-5}$	23 °C; 4 < pH < 10	[1]
		Ca^{2+}, –2.1		0.01	0.01				
		Ca^{2+}, –1.3		0.001	0.001				
		Ca^{2+}, –0.5		0.0001	0.0001				
Sr^{2+}-2	strontium doped poly(dibenzo-18-crown-6) film electrode	Li^+, –2.38; Na^+, –2.57; K^+, –2.96; Rb^+, –2.33; Cs^+, –2.49; NH_4^+, –1.63; Mg^{2+}, –2.64; Ca^{2+}, –2.99; Ba^{2+}, –0.32	SSM	0.01	0.01	59	10^{-5}–10^{-1}	25 ± 0.5 °C; t_{resp} = 25–30 s; $c_{dl} = 2.9 \times 10^{-5}$ M; 3.0 < pH < 7.0; τ = 60 d	[2]
Sr^{2+}-3	**Sr^{2+}-3** (w =1.5 %), oNPOE (w =65 %), KTpClPB (x_i =21 %), PVC (w =33 %)	Mg^{2+}, –0.57; Ca^{2+}, –0.57	MPM		Mg^{2+}, 0.05, 0.1; Ca^{2+}, 0.005, 0.1	–		140 mM NaCl background	[3]
Sr^{2+}-4	**Sr^{2+}-4** (w =1.5 %), oNPOE (w =65 %), KTpClPB (x_i =23 %), PVC (w =33 %)	Mg^{2+}, –1.07; Ca^{2+}, –0.80	MPM		Mg^{2+}, 0.05, 0.1; Ca^{2+}, 0.005, 0.1	–		140 mM NaCl background	[3]
Sr^{2+}-5	**Sr^{2+}-5** (w =1.5 %), oNPOE (w =65 %), KTpClPB (x_i =24 %), PVC (w =33 %)	Mg^{2+}, –1.24; Ca^{2+}, –0.70	MPM		Mg^{2+}, 0.05, 0.1; Ca^{2+}, 0.005, 0.1	–		140 mM NaCl background	[3]
Sr^{2+}-6	**Sr^{2+}-6** (w =1.5 %), oNPOE (w =65 %), KTpClPB (x_i =27 %), PVC (w =33 %)	Mg^{2+}, –2.43; Ca^{2+}, –2.00	MPM		Mg^{2+}, 0.05, 0.1; Ca^{2+}, 0.005, 0.1	–		140 mM NaCl background	[3]
Sr^{2+}-7	**Sr^{2+}-7** (w =1.5 %), oNPOE (w =65 %), KTpClPB (x_i =30 %), PVC (w =33 %)	Mg^{2+}, –2.51; Ca^{2+}, –2.00	MPM		Mg^{2+}, 0.05, 0.1; Ca^{2+}, 0.005, 0.1	–		140 mM NaCl background	[3]
Sr^{2+}-8	**Sr^{2+}-8** (w =1.5 %), oNPOE (w =65 %),	Mg^{2+}, –2.80; Ca^{2+}, –1.82	MPM		Mg^{2+}, 0.05, 0.1;	–		140 mM NaCl background	[3]

Table 10: Sr^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Sr^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KTpClPB (x_i =33 %), PVC (w =33 %)				Ca^{2+}, 0.005, 0.1				

(1) E.W. Baumann, *Anal. Chem.*, **47**, 959–961 (1975).
(2) N. Akmal, H. Zimmer, H.B. Mark, *Anal. Lett.*, **24**, 1431–1443 (1991).
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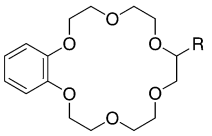

Sr^{2+}-3 (M_r = 312.36): R = H
Sr^{2+}-4 (M_r = 342.39): R = CH_2OH
Sr^{2+}-5 (M_r = 356.41): R = CH_2OCH_3
Sr^{2+}-6 (M_r = 400.47): R = $CH_2OCH_2CH_2OCH_3$
Sr^{2+}-7 (M_r = 444.47): R = $CH_2O(CH_2CH_2O)_2CH_3$
Sr^{2+}-8 (M_r = 488.47): R = $CH_2O(CH_2CH_2O)_3CH_3$

Table 11: Ba^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Ba^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ba^{2+}-1	**Ba^{2+}-1** (w = 1.1 %), oNPOE (w = 65.9 %), PVC (w = 33.0 %)	H^+, +1.4 ; Li^+, –3.0; Na^+, –2.1; K^+, –1.0; Rb^+, –1.3; Cs^+, –1.8; NH_4^+, –1.8; Mg^{2+}, –5.2; Ca^{2+}, –3.8; Sr^{2+}, –1.6	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-2	**Ba^{2+}-2** (w = 1.1 %), oNPOE (w = 65.9 %), PVC (w = 33.0 %)	H^+, +5.3 ; Li^+, –1.0; Na^+,+0.5; K^+, –1.8; Rb^+, +1.7; Cs^+, +1.6; NH_4^+, +0.6; Mg^{2+}, –2.2; Ca^{2+}, –1.3; Sr^{2+}, –0.7	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
	Ba^{2+}-2 (w = 1.1 %), oNPOE (w = 66.3 %), KTpClPB (x_i = 66 %), PVC (w = 32.1 %)	H^+, –2.5 ; Li^+, –3.0; Na^+,–2.5; K^+, –1.8; Rb^+, –1.6; Cs^+, –1.3; NH_4^+, –2.4; Mg^{2+}, –7.0; Ca^{2+}, –1.6; Sr^{2+}, –0.4	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-3	**Ba^{2+}-3** (w = 1.4 %), oNPOE (w = 65.5 %), PVC (w = 33.1 %)	H^+, +6.5 ; Li^+, –0.6; Na^+,+2.0; K^+, +3.3 Rb^+, +3.5; Cs^+, +3.7; NH_4^+, +2.2; Mg^{2+}, –0.9; Ca^{2+}, –0.8; Sr^{2+}, –0.3	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
	Ba^{2+}-3 (w = 1.4 %), oNPOE (w = 65.1 %), KTpClPB (x_i = 75 %), PVC (w = 32.7 %)	H^+, –1.5 ; Li^+, –1.7; Na^+,–1.5; K^+, –0.3; Rb^+, –0.9; Cs^+, –0.4; NH_4^+, –1.3; Mg^{2+}, –4.3; Ca^{2+}, –1.9; Sr^{2+}, –1.0	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-4	**Ba^{2+}-4** (w = 1.2 %), oNPOE (w = 65.8 %), PVC (w = 33.0 %)	H^+, +4.2 ; Li^+, –1.6; Na^+,–0.5; K^+, –0.7; Rb^+, –0.9; Cs^+, –1.0; NH_4^+, –1.3; Mg^{2+}, –4.3; Ca^{2+}, –1.8; Sr^{2+}, +0.2	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
	Ba^{2+}-4 (w = 1.2 %), oNPOE (w = 65.2 %), KTpClPB (x_i = 65 %), PVC (w = 32.9 %)	H^+, –1.7 ; Li^+, –3.3; Na^+,–2.7; K^+, –2.7; Rb^+, –2.9; Cs^+, –2.9; NH_4^+, –3.3; Mg^{2+}, –7.8; Ca^{2+}, –1.8; Sr^{2+}, –0.2	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-5	**Ba^{2+}-5** (w = 1.2 %), oNPOE (w = 65.9 %), PVC (w = 33.2 %)	H^+, +3.1 ; Li^+, –2.7; Na^+,+0.2; K^+, +0.9 ; Rb^+, +0.2; Cs^+, –0.6;	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]

Table 11: Ba^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ba^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		NH_4^+, –0.8; Mg^{2+}, –4.6; Ca^{2+}, –1.7; Sr^{2+}, –0.3							
	Ba^{2+}-5 (w = 1.2 %), oNPOE (w = 65.0 %), KTpClPB (x_i = 67 %), PVC (w = 33.1 %)	H^+, –2.7 ; Li^+, –3.3; Na^+,–2.5; K^+, –2.7; Rb^+, –2.9; Cs^+, –3.0; NH_4^+, –3.3; Mg^{2+}, –7.5; Ca^{2+}, –1.5; Sr^{2+}, +0.3	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-6	**Ba^{2+}-6** (w = 1.2 %), oNPOE (w = 65.6 %), PVC (w = 33.2 %)	H^+, +3.0; Li^+, –2.4; Na^+, +0.2; K^+, +1.8 ; Rb^+, +1.2; Cs^+, +0.2; NH_4^+, –0.3; Mg^{2+}, –4.5; Ca^{2+}, –1.9; Sr^{2+}, +0.2	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
	Ba^{2+}-6 (w = 1.7 %), oNPOE (w = 64.8 %), KTpClPB (x_i = 63 %), PVC (w = 32.6 %)	H^+, –3.0 ; Li^+, –3.1; Na^+,–2.7; K^+, –2.9; Rb^+, –3.0; Cs^+, –2.9; NH_4^+, –3.5; Mg^{2+}, –4.8; Ca^{2+}, –1.5; Sr^{2+}, +0.6	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-7	**Ba^{2+}-7** (w = 1.0 %), oNPOE (w = 66.2 %), PVC (w = 32.8 %)	H^+, +3.6 ; Li^+, –1.9; Na^+,+0.5; K^+, +1.3; Rb^+, +0.7; Cs^+, +0.1; NH_4^+, –0.1; Mg^{2+}, –4.3; Ca^{2+}, –3.0; Sr^{2+}, –2.5	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
	Ba^{2+}-7 (w = 1.2 %), oNPOE (w = 65.0 %), KTpClPB (x_i = 64 %), PVC (w = 33.1 %)	H^+, –3.0; Li^+, –2.9; Na^+,–1.9; K^+, –1.6; Rb^+, –2.0; Cs^+, –2.5; NH_4^+, –2.4; Mg^{2+}, –7.5; Ca^{2+}, –3.3; Sr^{2+}, –2.7	SSM	0.1	0.1	nN	–	20 °C; r.o.o.g.	[1]
Ba^{2+}-8	**Ba^{2+}-8** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+,–0.3; Na^+, +0.7; K^+, +3; Mg^{2+}, –1.9; Ca^{2+}, –1.6	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-9	**Ba^{2+}-9** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+,–0.3; Na^+, +4; K^+, +7; Mg^{2+}, –1.6; Ca^{2+}, –1.9	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-10	**Ba^{2+}-10** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+,+0.4; Na^+, +1; K^+, +6; Mg^{2+}, –1.9; Ca^{2+}, –1.3	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]

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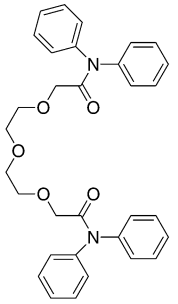
Table 11: Ba^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ba^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ba^{2+}-11	**Ba^{2+}-11** (w = 0.5 %), oNPPE (x_i = 67.6 %), PVC (w = 31.9 %)	Li^+,+0.4; Na^+, +1.3; K^+, +2.5; Mg^{2+}, –1.0; Ca^{2+}, –0.7	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-12	**Ba^{2+}-12** (0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+, –1.4; Na^+, +0.2; K^+, +2.5; Mg^{2+}, –3.7; Ca^{2+}, –3.2	SSM	10^{-2}	10^{-2}	–	2.6×10^{-3} –4.3×10^{-2}	r.o.o.g.	[2]
Ba^{2+}-13	**Ba^{2+}-13** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+, –1.5; Na^+, +0.2; K^+, +2.2; Mg^{2+}, –2.9 Ca^{2+}, –2.5	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-14	**Ba^{2+}-14** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+, +0.4; Na^+, +0.5; K^+, +2.7; Rb^+, +2.1; Cs^+, +1.8; Mg^{2+}, –1.8; Ca^{2+}, –1.2	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-15	**Ba^{2+}-15** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+, –0.4; Na^+, +0.7; K^+, +1.4; Mg^{2+}, –2.0; Ca^{2+}, –1.6	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-16	**Ba^{2+}-16** (w = 0.5 %), oNPPE (w = 67.6 %), PVC (w = 31.9 %)	Li^+, +0.3; Na^+, +0.5; K^+, +1.6; Rb^+, +1.5; Cs^+, +1.5; Mg^{2+}, –1.8; Ca^{2+}, –1.3	SSM	10^{-2}	10^{-2}	–	–	r.o.o.g.	[2]
Ba^{2+}-17	**Ba^{2+}-17** (7 mg), oNPOE (1 mL), poly(ethylene)–poly(vinyl acetate) (30 mg), NaTPB (x_i = 12–24 %)	Li^+, –3.6; Na^+, –2.4; K^+, –2.1; Rb^+, –2.5; Cs^+, –2.1; NH_4^+, –2.4; Mg^{2+}, –4.7; Ca^{2+}, –2.5; Sr^{2+}, –1.9; Mn^{2+}, –4.7 Cu^{2+}, –4.5; Zn^{2+}, –4.5	SSM	0.1	0.1	30.0	3×10^{-6} –10^{-1}	τ > 150 d; 1.6 < pH < 8.1; $c_{dl} = 2 \times 10^{-6}$ M; r.o.o.g.	[3]
		Li^+, –3.6; Na^+, –2.2; K^+, –1.4; Rb^+, –2.0; Cs^+, –2.1; NH_4^+, –2.1; Mg^{2+}, –4.6; Ca^{2+}, –2.4; Sr^{2+}, –1.5; Mn^{2+}, –4.6; Cu^{2+}, –4.5; Zn^{2+}, –4.1	FIM	–	–			r.o.o.g	[3]
	Ba^{2+}-17 (3 mg), oNPOE (1 mL), ethylene-vinyl acetate (30 mg), NaTPB (x_i = 28–56 %)	Li^+, –2.0; Na^+, –1.1; K^+, –0.4; NH_4^+, +0.0; Ca^{2+}, –0.9; Sr^{2+}, –2.4; Mn^{2+}, –3.0	SSM	0.1	0.1	–	–	r.o.o.g.	[3]

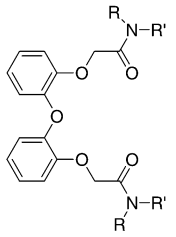
Table 11: Ba^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ba^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Ba^{2+}-17 (7 mg?), nitrobenzene (1 mL), ethylene-vinyl acetate (30 mg), NaTPB (x_i = 12–24 %?)	Na^+, –1.6; K^+, –1.4; Rb^+, –1.8; Ca^{2+}, –2.3; Sr^{2+}, –1.3; Mn^{2+}, –4.5	SSM	0.1	0.1	–	–	short lifetime; r.o.o.g.	[3]
	Ba^{2+}-17 (7 mg?), DOPP (1 mL), ethylene-vinyl acetate (30 mg), NaTPB (x_i = 12–24 %?)	Li^+,+1.0; Na^+, –0.6; K^+, –0.4; NH_4^+, 0.8; Ca^{2+}, +0.2; Sr^{2+}, +0.0; Mn^{2+}, –1.6	SSM	0.1	0.1	–	–	r.o.o.g.	[3]

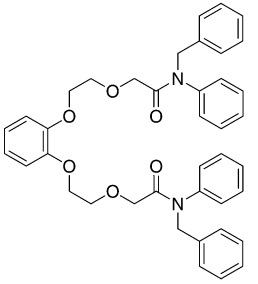
(1) T.Kleiner, F. Bongardt, F. Vögtle, M.W. Läubli, O. Dinten, W. Simon, *Chem. Ber.*, **118,** 1071–1077 (1985).
(2) Y.P. Feng, G. Goodlet, N.K. Harris, M.M. Islam, G.J. Moody, J.D.R. Thomas, *Analyst*, **116**, 469–472 (1991).
(3) A.A. Bouklouze, J.-C. Viré, V. Cool, *Anal. Chem. Acta,* **273**, 153–163 (1993).



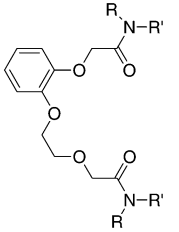
Ba^{2+}-1 (M_r = 524.62)



Ba^{2+}-2 (M_r = 648.76): R = C_6H_5, R' = $CH_2C_6H_5$
Ba^{2+}-3 (M_r = 620.71): R = R' = C_6H_5
Ba^{2+}-4 (M_r = 644.90): R = R' = cyclohexyl



Ba^{2+}-7 (M_r = 644.77)



Ba^{2+}-5 (M_r = 600.72): R= C_6H_5, R'= $CH_2C_6H_5$
Ba^{2+}-6 (M_r = 572.62): R= R'= C_6H_5

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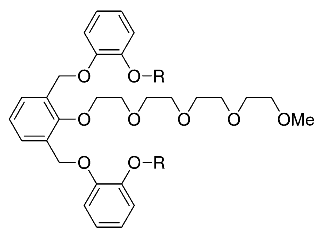
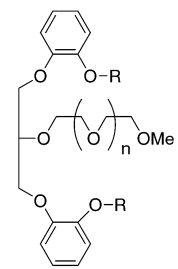
Table 11: Ba^{2+}-Selective Electrodes (*Continued*)



Ba^{2+}-8 (M_r = 740.86): R= C_6H_4 OCH_3
Ba^{2+}-9 (M_r = 680.80): R= C_6H_5



Ba^{2+}-10 (M_r = 646.78): R=Benzyl, n=3

Ba^{2+}-11 (M_r = 422.48): R=H, n=2

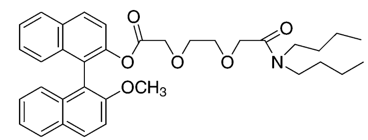
Ba^{2+}-12 (M_r = 466.53): R=H, n=3

Ba^{2+}-13 (M_r = 510.59): R=H, n=4

Ba^{2+}-14 (M_r = 554.64): R=H, n=5

Ba^{2+}-15 (M_r = 582.61): R=CH_2COOH, n=3

Ba^{2+}-16 (M_r = 626.66): R=CH_2COOH, n=4



Ba^{2+}-17 (M_r = 571.72)

Table 12 Cu^{2+} Selective Electrodes

ionophore	membrane composition	$\lg K_{Cu^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Cu^{2+}-1	**Cu^{2+}-1** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Na^+, +1.7; Co^{2+}, +0.0; Ni^{2+}, +0.4; Zn^{2+}, –2.2; Cd^{2+}, +0.6; Pb^{2+}, +0.8	FIM	–	10^{-2}	–	–	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
Cu^{2+}-2	**Cu^{2+}-2** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Na^+, –1.3; Co^{2+}, –1.4; Ni^{2+}, –1.0; Zn^{2+}, –1.5; Cd^{2+}, –1.5; Pb^{2+}, –1.0	FIM	–	10^{-2}	39.6	10^{-5} –5×10^{-3}	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
Cu^{2+}-3	**Cu^{2+}-3** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+}, –2.7; Ni^{2+}, –2.1; Zn^{2+}, –3.4; Cd^{2+}, –2.8; Pb^{2+}, –2.9	FIM	–	10^{-2}	–	–	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
Cu^{2+}-4	**Cu^{2+}-4** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+},–2.0; Ni^{2+}, –2.3; Zn^{2+}, –1.2; Cd^{2+}, –1.2; Pb^{2+}, +2.1	FIM	–	10^{-2}	29.0	10^{-5} –10^{-2}	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
Cu^{2+}-5	**Cu^{2+}-5** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+}, –1.3; Ni^{2+}, –1.7; Zn^{2+}, –1.3; Cd^{2+}, +0.3; Pb^{2+}, +2.3	FIM	–	10^{-2}	30.0	10^{-6} –10^{-1}	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
Cu^{2+}-6	**Cu^{2+}-6** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Ni^{2+}, –1.1; Co^{2+}, –1.6; Zn^{2+}, –1.7; Cd^{2+}, –1.7; Pb^{2+}, –1.0	FIM	–	10^{-2}	–	10^{-4} –5×10^{-2}	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
	Cu^{2+}-6 (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Ni^{2+}, –0.2; Co^{2+}, –2.2; Zn^{2+}, –1.0; Cd^{2+}, –0.9; Pb^{2+}, +0.2	FIM	–	10^{-2}	17.5	10^{-5} –10^{-2}	internal solution, 10^{-2} M $Cu(NO_3)_2$; pH = 4	[2]
Cu^{2+}-7	**Cu^{2+}-7** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+}, –1.4; Ni^{2+}, –1.4; Zn^{2+}, –1.0; Cd^{2+}, –0.4; Pb^{2+}, +1.9	FIM	–	10^{-2}	34.2	10^{-4} –5×10^{-2}	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]
Cu^{2+}-8	**Cu^{2+}-8** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+}, –1.5; Ni^{2+}, –1.5; Zn^{2+}, –1.0; Cd^{2+}, –0.5; Pb^{2+}, +2.0	FIM	–	10^{-2}	33.6	10^{-4} –5×10^{-2}	20 °C; 4.0 < pH < 5.0; r.o.o.g.	[1]

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Table 12 Cu^{2+} Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Cu^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Cu^{2+}-9	**Cu^{2+}-9** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+}, –1.0; Ni^{2+}, –1.4; Zn^{2+}, –2.2; Cd^{2+}, –1.5; Pb^{2+}, +0.1	FIM	–	10^{-2}	22.3	10^{-5} –10^{-1}	internal solution, [2] 10^{-2} M $Cu(NO_3)_2$; pH = 4; r.o.o.g	
Cu^{2+}-10	**Cu^{2+}-10** (w = 1 %), KTpClPB (x_i = 70 %), DDP (w = 67.7 %), PVC (w = 30 %)	Co^{2+}, –1.5; Ni^{2+}, –1.5; Zn^{2+}, –1.3; Cd^{2+}, –1.0; Pb^{2+}, –0.2	FIM	–	10^{-2}	25.1	10^{-6} –10^{-1}	internal solution, [2] 10^{-2} M $Cu(NO_3)_2$; pH = 4; r.o.o.g.	
	Cu^{2+}-10 (w = 2 %), KTpClPB (x_i = 70 %), DDP (w = 65.3 %), PVC (w = 30 %)	Co^{2+}, –2.0; Ni^{2+}, –2.0; Zn^{2+}, –1.8; Cd^{2+}, –1.0; Pb^{2+}, –0.2	FIM	–	10^{-2}	–	–	internal solution, [2] 10^{-2} M $Cu(NO_3)_2$; pH = 4; r.o.o.g.	
	Cu^{2+}-10 (w = 3 %), KTpClPB (x_i = 70 %), DDP (w = 63 %), PVC (w = 30 %)	Co^{2+}, –0.7; Ni^{2+},–2.0; Zn^{2+}, –3.1; Cd^{2+}, –2.0; Pb^{2+}, –1.2	FIM	–	10^{-2}	29.6	10^{-5} –10^{-2}	internal solution, [2] 10^{-2} M $Cu(NO_3)_2$; pH = 4; r.o.o.g.	
	Cu^{2+}-10 (w = 4 %), KTpClPB (x_i = 70 %), DDP (w = 60.6%), PVC (w = 30 %)	Co^{2+}, –3.1; Ni^{2+}, –3.0; Zn^{2+}, –2.9; Cd^{2+}, –1.8; Pb^{2+}, –0.8	FIM	–	10^{-2}	–	–	internal solution, [2] 10^{-2} M $Cu(NO_3)_2$; pH = 4; r.o.o.g.	
Cu^{2+}-11	**Cu^{2+}-11** (w = 1–4 %), KTpClPB (x_i = 70 %), DDP (w = 66–69 %), PVC (w = 30 %)	Co^{2+}, –4.8; Ni^{2+}, –4.8; Zn^{2+}, –5.3; Cd^{2+}, –4.7; Pb^{2+}, +3.5	FIM	–	10^{-2}	33.2	10^{-6} –10^{-2}	internal solution, [2] 10^{-2} M $Cu(NO_3)_2$; pH = 4; r.o.o.g.	
Cu^{2+}-12	**Cu^{2+}-12** (w = 4.1 %), oNPOE (w = 54.8 %), PVC (w = 41.1 %)	Na^+, –3.7; K^+, –3.7; Ca^{2+}, –1.9; Mg^{2+}, –4.0; Sr^{2+}, –4.0; Mn^{2+}, –3.7; Ni^{2+}, –3.8; Co^{2+}, –3.8; Zn^{2+}, –3.9; Cd^{2+}, –4.4; Pb^{2+}, –1.8	MSM	–	–	30	–	25.0 ± 0.1 °C; [3] t_{resp} = 27 s; 3.2 < pH < 5.4; $c_{dl} = 2.0 \times 10^{-8}$ M; r.o.o.g.	
Cu^{2+}-13	**Cu^{2+}-13** (w = 5.4 %), oNPOE (w = 54.1 %), PVC (w = 40.5 %)	Na^+, –3.8; K^+, –3.8; Mg^{2+}, –2.3; Ca^{2+}, –2.6; Sr^{2+}, –2.8; Mn^{2+}, –3.1; Ni^{2+}, –2.6; Co^{2+}, –3.6; Zn^{2+}, –1.5; Cd^{2+}, –2.6; Pb^{2+}, –3.4	MSM	–	–	31	–	25.0 ± 0.1 °C; [3] $c_{dl} = 1.0 \times 10^{-8}$ M; t_{resp} = 10 s; 3.0 < pH < 6.5; r.o.o.g.	
Cu^{2+}-14	**Cu^{2+}-14** (w = 5.4 %), oNPOE (w = 54.1 %),	Na^+, –1.5; K^+, –0.8; Mg^{2+}, –2.6; Ca^{2+}, –3.2;	MSM	–	–	31	–	25.0 ± 0.1 °C; [3] $c_{dl} = 4.0 \times 10^{-7}$ M;	

Table 12 Cu^{2+} Selective Electrodes (*Continued*)

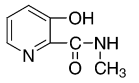
ionophore	membrane composition	$\lg K_{Cu^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 40.5 %)	Sr^{2+}, –2.7; Mn^{2+}, –2.5; Ni^{2+}, –2.3; Co^{2+}, –2.8; Zn^{2+}, –1.0; Cd^{2+}, –4.3; Pb^{2+}, –0.9						t_{resp} = 6 s; 3.7 < pH < 6.3; r.o.o.g.	
Cu^{2+}-15	**Cu^{2+}-15** (w = 6.9 %), oNPOE (w = 34.3 %), KTpClPB (x_i = 24 %), PVC (w = 57.2 %)	Na^+, –2.7; K^+, –2.3; Mg^{2+}, –3.6; Ca^{2+}, –3.6; Sr^{2+}, –3.7; Mn^{2+}, –2.5; Ni^{2+}, –3.2; Co^{2+}, –4.0; Zn^{2+}, –2.2; Cd^{2+}, –4.4; Pb^{2+}, –0.7	FIM	–	10^{-1} (Na^+, K^+) 10^{-2} (other cations)	29	–	25.0 ± 0.1 °C; $c_{dl} = 4.0 \times 10^{-7}$ M; t_{resp} = 9 s; 3.2 < pH < 5.5; r.o.o.g.	[4]
Cu^{2+}-16	**Cu^{2+}-16** (w = 5.8 %), oNPOE (w = 46.6 %), PVC (w = 41.7 %), NaTFPB (x_i = 14 %)	Na^+, –2.5; K^+, –2.0; Mg^{2+}, –2.7; Ca^{2+}, –3.0; Sr^{2+}, –2.8; Mn^{2+}, –2.4; Ni^{2+}, –3.2; Co^{2+}, –3.2; Zn^{2+}, –2.3; Cd^{2+}, –2.8; Pb^{2+}, –0.9	FIM	–	10^{-1} (Na^+, K^+) 10^{-2} (other cations)	28	–	25.0 ± 0.1 °C; $c_{dl} = 3.9 \times 10^{-7}$ M; t_{resp} = 31 s; 3.4 < pH < 6.1; r.o.o.g.	[4]
	Cu^{2+}-16 (w = 5.4 %), oNPOE (w = 54.1 %), PVC (w = 40.5 %)	Mg^{2+}, –2.8; Ca^{2+}, –3.3; Mn^{2+}, –2.4; Ni^{2+}, –3.0; Co^{2+}, –1.9; Cd^{2+}, –2.1	FIM	–	10^{-2}	29	–	25.0 ± 0.1 °C; $c_{dl} = 4.0 \times 10^{-7}$ M; t_{resp} = 20 s; 3.4 < pH < 6.1; r.o.o.g.	[4]
Cu^{2+}-17	**Cu^{2+}-17** (w = 7 %), DOP (w = 31 %), PVC (w = 62 %)	Ni^{2+}, –1.0; Co^{2+}, –1.0	–	–	–	28	–	t_{resp} < 10 s; $c_{dl} = 10^{-6}$ M;	[5]
Cu^{2+}-18	**Cu^{2+}-18** (w = 2.6 %), DOP (w = 64 %), KTpClPB (x_i = 128 %), PVC (w = 32 %)	K^+, interferes; Ca^{2+}, –1.7; Cd^{2+}, –2.0; Pb^{2+}, –1.6	FIM	–	0.1 0.01	31	–		[6]
Cu^{2+}-19	**Cu^{2+}-19** (w = 9.2 %), DOP (w = 60 %), KTpClPB (x_i = 19 %), PVC (w = 30 %)	K+, interferes Ca^{2+}, –1.9; Cd^{2+}, –2.1; Pb^{2+}, –1.7	FIM	–	0.1 0.01	54–59	–		[6]

(1) Z. Brzózka, *Analyst*, **113**, 891-893 (1988).
(2) Z. Brzózka, *Analyst*, **113**, 1803-1805 (1988).
(3) S. Kamata, A. Bhale, Y. Fukunaga, H. Murata, *Anal. Chem*., **60**, 2464-2467 (1988).
(4) S. Kamata, Y. Kubo, H. Murata, A. Bhale, *Analyst*, **114,** 1029-1031 (1989).

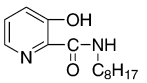
continues on next page

Table 12 Cu^{2+} Selective Electrodes (*Continued*)

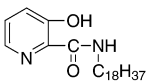
(5) J. Casabó, L. Escriche, S. Algret, C. Jaime, C. Pérez-Jiménez, L. Mestres, J. Rius, E. Molins, C. Miravitlles, F. Teixidor, *Inorg. Chem.*, **30**, 1893-1898 (1991).
(6) P.L.H.M. Cobben, R.J.M. Egberink, J.G. Bomer, P. Bergved, W. Verboom, D.N. Reinhoudt, *J. Am. Chem. Soc.*, **114**, 10573-10582 (1992).



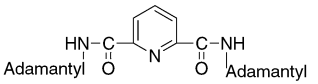
Cu^{2+}-1 (M_r = 152.15)



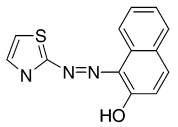
Cu^{2+}-2 (M_r = 250.34)



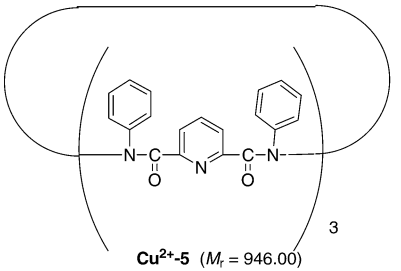
Cu^{2+}-3 (M_r = 390.61)



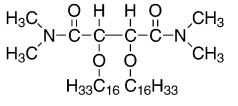
Cu^{2+}-4 (M_r = 439.65)



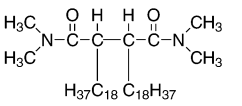
Cu^{2+} -6 (M_r = 255.30)



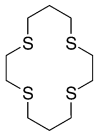
Cu^{2+}-5 (M_r = 946.00)



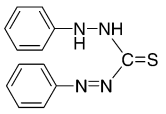
Cu^{2+}-7 (M_r = 653.09)



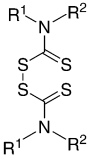
Cu^{2+}-8 (M_r = 677.20)

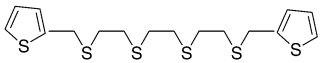


Cu^{2+} -9 (M_r = 268.51)



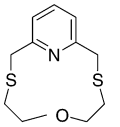
Cu^{2+} -10 (M_r = 256.33)



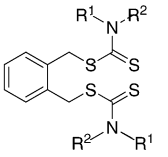


Cu^{2+} -11 (M_r = 406.71)

Cu^{2+} -12 (M_r = 296.52): R^1=R^2=C_2H_5
Cu^{2+} -13 (M_r = 408.74): R^1=R^2=C_4H_9
Cu^{2+} -14 (M_r = 717.34): R^1=CH_3, R^2=$C_{18}H_{37}$

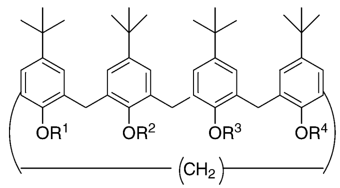


Cu^{2+}-17
(M_r = 241.36)



Cu^{2+} -15 (M_r = 512.89): R^1=R^2=*i*-C_4H_9
Cu^{2+} -16 (M_r = 821.49): R^1=CH_3,
R^2= $C_{18}H_{37}$

Table 12 Cu^{2+} Selective Electrodes (*Continued*)



Cu^{2+} -18 (M_r = 1294.06):
$R^1=R^2=R^3=R^4=CH_2CH_2SCH_2C(S)N(CH_3)_2$
Cu^{2+} -19 (M_r = 1055.66): $R^1=R^3$= propyl,
$R^2=R^4=CH_2CH_2SCH_2C(S)N(CH_3)_2$

Table 13: Ag^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-1	**Ag^+-1** (w = 2.8 %), dipicrylamine sodium salt (x_i = 16 %), PVC (w = 27.6 %), DOP (w = 69.1 %)	Li^+, –4.3; Na^+, –4.0; K^+, –4.5; NH_4^+, –4.3; Mg^{2+}, –4.9; Ca^{2+}, –4.7; Fe^{3+}, –3.7; Ni^{2+}, –4.8; Cu^{2+}, –4.2; Zn^{2+}, –4.1; Cd^{2+}, –4.6; Hg^{2+}, –1.8; Tl^+, –3.4	FIM	–	–	59	10^{-5}–10^{-2}	$t_{resp} < 30$ s; $\tau > 90$ d; r.o.o.g.	[1]
	Ag^+-1 (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), DOP (w = 68.9 %)	Li^+, –4.7; Na^+, –4.9; K^+, –4.6; NH_4^+, –4.6; H^+, –3.6; Mg^{2+}, –4.8; Ca^{2+}, –4.6; Fe^{3+}, –3.8; Co^{2+}, –4.1; Ni^{2+}, –4.0; Cu^{2+}, –3.9; Zn^{2+}, –3.5; Cd^{2+}, –4.2; Hg^{2+}, –2.0; Tl^+, –3.3; Pb^{2+}, –3.7	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	N	10^{-5}–10^{-2}	25 °C; r.o.o.g.	[2]
	Ag^+-1 (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), BEHS (w = 68.9 %)	Li^+, –4.4; Na^+, –4.4; K^+, –4.7; NH_4^+, –4.2; H^+, –3.2; Mg^{2+}, –4.8; Ca^{2+}, –4.8; Fe^{3+}, –3.8; Co^{2+}, –4.2; Ni^{2+}, –3.5; Cu^{2+}, –4.2; Zn^{2+}, –3.5; Cd^{2+}, –4.4; Hg^{2+}, –2.1; Tl^+, –3.4; Pb^{2+}, –4.2	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	59	10^{-5}–10^{-2}	25 °C; $t_{resp} < 30$ s; r.o.o.g.	[3]
	Ag^+-1 (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), DOP (w = 68.9 %)	Li^+, –4.7; Na^+, –4.9; K^+, –4.6; NH_4^+, –4.6; H^+, –3.6; Mg^{2+}, –4.8; Ca^{2+}, –4.7; Fe^{3+}, –3.8; Co^{2+}, –4.1; Ni^{2+}, –4.0; Cu^{2+}, –3.9; Zn^{2+}, –3.5; Cd^{2+}, –4.2; Hg^{2+}, –2.1; Tl^+, –3.3; Pb^{2+}, –3.7	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	59	10^{-5}–10^{-2}	25 °C; $t_{resp} < 30$ s; r.o.o.g.	[3]
	Ag^+-1 (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), oNPOE (w = 68.9 %)	Li^+, –4.4; Na^+, –4.8; K^+, –4.2; NH_4^+, –4.5; H^+, –3.2; Mg^{2+}, –4.7; Ca^{2+}, –4.7; Fe^{3+}, –3.8; Co^{2+}, –4.0; Ni^{2+}, –3.8; Cu^{2+}, –3.9; Zn^{2+}, –3.3;	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions,	59	10^{-5}–10^{-2}	25 °C; $t_{resp} < 30$ s; r.o.o.g.	[3]

Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Cd^{2+}, –4.2; Hg^{2+}, –2.5; Tl^+, –3.4; Pb^{2+}, –4.1			0.5				
	Ag^+-1 (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), TEHP (w = 68.9 %)	Li^+, –3.5; Na^+, –3.9; K^+, –4.3; NH_4^+, –3.5; H^+, –1.6; Mg^{2+}, –4.3; Ca^{2+}, –4.0; Fe^{3+}, –2.8; Co^{2+}, –4.2; Ni^{2+}, –3.3; Cu^{2+}, –3.9; Zn^{2+}, –3.5; Cd^{2+}, –4.0; Hg^{2+}, –2.4; Tl^+, –3.1; Pb^{2+}, –4.0	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	59	10^{-5}–10^{-2}	25 °C; t_{resp} < 30 s; r.o.o.g.	[3]
Ag^+-2	**Ag^+-2** (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), DOP (w = 68.9 %)	Li^+, –4.8; Na^+, –5.1; K^+, –4.7; NH_4^+, –4.9; H^+, –3.6; Mg^{2+}, –4.9; Ca^{2+}, –4.6; Fe^{3+}, –3.9; Co^{2+}, –4.1; Ni^{2+}, –4.2; Cu^{2+}, –4.2; Zn^{2+}, –3.3; Cd^{2+}, –4.4; Hg^{2+}, –2.2; Tl^+, –3.9; Pb^{2+}, –3.8	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	N	10^{-5}–10^{-2}	25 °C; r.o.o.g.	[2]
Ag^+-3	**Ag^+-3** (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), DOP (w = 68.9 %)	Li^+, –4.8; Na^+, –5.0; K^+, –4.8; NH_4^+, –4.8; H^+, –3.2; Mg^{2+}, –4.7; Ca^{2+}, –4.8; Fe^{3+}, –3.6; Co^{2+}, –4.4; Ni^{2+}, –4.2; Cu^{2+}, –4.3; Zn^{2+}, –3.2; Cd^{2+}, –4.4; Hg^{2+}, –1.5; Tl^+, –3.8; Pb^{2+}, –3.9	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	N	10^{-5}–10^{-2}	25 °C; r.o.o.g.	[2]
Ag^+-4	**Ag^+-4** (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt (x_i = 10 %), PVC (w = 27.5 %), DOP (w = 68.9 %)	Li^+, –4.8; Na^+, –4.9; K^+, –4.8; NH_4^+, –4.7; H^+, –3.5; Mg^{2+}, –4.9; Ca^{2+}, –4.6; Fe^{3+}, –3.7; Co^{2+}, –4.1; Ni^{2+}, –4.0; Cu^{2+}, –4.0; Zn^{2+}, –3.3; Cd^{2+}, –4.4; Hg^{2+}, –1.8; Tl^+, –3.6; Pb^{2+}, –3.8	FIM	–	Hg^{2+}, 5×10^{-5}; H^+ and heavy metal ions, 0.05; other ions, 0.5	N	10^{-5}–10^{-2}	25 °C; r.o.o.g.	[2]
Ag^+-5	**Ag^+-5** (Ag^+-complex, w = 3.3 %), dipicrylamine sodium salt	Li^+, –5.0; Na^+, –4.7; K^+, –4.9; NH_4^+, –4.5;	FIM	–	Hg^{2+}, 5×10^{-5};	N	10^{-5}–10^{-2}	25 °C; r.o.o.g.	[2]

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Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	(x_i = 10 %), PVC (w = 27.5 %), DOP (w = 68.9 %)	H^+, –3.4; Mg^{2+}, –4.8; Ca^{2+}, –4.6; Fe^{3+}, –3.7; Co^{2+}, –4.1; Ni^{2+}, –4.1; Cu^{2+}, –4.1; Zn^{2+}, –3.4; Cd^{2+}, –4.6; Hg^{2+}, –1.6; Tl^+, –3.6; Pb^{2+}, –3.8			H^+ and heavy metal ions, 0.05; other ions, 0.5				
Ag^+-6	**Ag^+-6** (w = 7 %), DOP (w = 31 %), PVC (w = 62 %)	Na^+, –4.89; K^+, –4.77; Mg^{2+}, –5.31; Ca^{2+}, –4.96; Sr^{2+}, –5.00; Co^{2+}, –5.60; Ni^{2+}, –4.35; Cu^{2+}, –4.89; Zn^{2+}, –5.57; Cd^{2+}, –5.41; Hg^{2+}, –2.30; Pb^{2+}, –4.92	FIM	–	Hg^{2+}, 10^{-5}; other ions, 0.1	59	10^{-6}–10^{-1}	25.0 ± 0.1 °C; t_{resp} < 10 s; $c_{dl} = 3 \times 10^{-7}$ M; τ > 120 d	[4]
		Na^+, –4.89; K^+, –4.77; Mg^{2+}, –5.31; Ca^{2+}, –4.96; Sr^{2+}, –5.00; Co^{2+}, –5.60; Ni^{2+}, –5.74; Cu^{2+}, –5.10; Zn^{2+}, –5.57; Cd^{2+}, –4.41; Hg^{2+}, –2.30; Tl^+, –4.89; Pb^{2+}, –4.92	FIM	–	–	59	10^{-7}–10^{-2}	25.0 ± 0.1 °C; t_{resp} < 5 s; $c_{dl} = 3.0 \times 10^{-7}$ M; τ > 390 d; 2.5 < pH < 8.5	[5]
Ag^+-7	**Ag^+-7** (w = 7 %), DOP (w = 31 %), PVC (w = 62 %)	Na^+, –4.89; K^+, –4.24; Mg^{2+}, –5.26; Ca^{2+}, –4.74; Sr^{2+}, –4.80; Co^{2+}, –4.82; Ni^{2+}, –5.01; Cu^{2+}, –4.51; Zn^{2+}, –5.92; Cd^{2+}, –4.26; Hg^{2+}, –2.10; Tl^+, –3.85; Pb^{2+}, –5.10	FIM	–	–	59	10^{-7}–10^{-2}	25.0 ± 0.1 °C; t_{resp} < 10 s; $c_{dl} = 1.4 \times 10^{-6}$ M; τ > 240 d; 2.5 < pH < 8.3	[5]
Ag^+-8	**Ag^+-8** (w = 7 %), DOP (w = 31 %), PVC (w = 62 %)	Na^+, –5.13; K^+, –4.92; Mg^{2+}, –5.36; Ca^{2+}, –5.44; Sr^{2+}, –5.34; Co^{2+}, –4.85; Ni^{2+}, –5.31; Cu^{2+}, –5.05; Zn^{2+}, –5.41; Cd^{2+}, –5.03; Hg^{2+}, –2.64; Tl^+, –4.35; Pb^{2+}, –5.20	FIM	–	–	56	10^{-7}–10^{-2}	25.0 ± 0.1 °C; t_{resp} < 5 s; $c_{dl} = 6.7 \times 10^{-7}$ M; τ > 270 d; 1.8 < pH < 8.5	[5]
	Ag^+-8 (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –5.1; Ca^{2+}, –5.4; Co^{2+}, –4.9; Ni^{2+}, –5.3; Cu^{2+}, –5.0; Zn^{2+}, –5.4; Cd^{2+}, –5.0; Pb^{2+}, –5.2	FIM	–	0.1	56	–	t_{resp} < 5 s; $c_{dl} = 6.7 \times 10^{-7}$ M; τ > 270 d; 1.8 < pH < 8.5	[6]

Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-9	**Ag^+-9** (w = 0.66 %), KTpClPB (x_i = 72 %), oNPOE (w = 65.84 %), PVC (w = 33.33 %)	Na^+, +0.06; K^+, –1.95; Co^{2+}, –3.10; Ni^{2+}, –3.72; Cu^{2+}, –3.38; Hg^{2+}, +0.39; Pb^{2+}, –0.55	SSM	0.1	0.1	38.26	$10^{-3.8}$–$10^{-1.8}$	25 °C; $c_{dl} = 10^{-3.8}$ –10^{-4} M	[7, 8]
Ag^+-10	**Ag^+-10** (w = 0.66 %), KTpClPB (x_i = 61 %), oNPOE (w = 65.84 %), PVC (w = 33.33 %)	Na^+, +0.27; K^+, –1.97; Co^{2+}, –2.84; Ni^{2+}, –3.25; Cu^{2+}, –2.80; Hg^{2+}, +1.65; Pb^{2+}, –1.68	SSM	0.1	0.1	45.67	$10^{-3.8}$–$10^{-1.0}$	25 °C; $c_{dl} = 10^{-3.8}$ –10^{-4} M;	[7, 8]
Ag^+-11	**Ag^+-11** (w = 0.66 %), KTpClPB (x_i = 55 %), oNPOE (w = 65.84 %), PVC (w = 33.33 %)	Na^+, +0.73; K^+, –2.29; Co^{2+}, –3.58; Ni^{2+}, –3.36; Cu^{2+}, –3.67; Cd^{2+}, –3.29; Hg^{2+}, +0.62; Pb^{2+}, –3.19	SSM	0.1	0.1	47.64	$10^{-4.0}$–$10^{-1.0}$	25 °C; $c_{dl} = 10^{-3.8}$ –10^{-4} M;	[7, 8]
Ag^+-12	**Ag^+-12** (w = 0.66 %), KTpClPB (x_i = 61 %), oNPOE (w = 65.84 %), PVC (w = 33.33 %)	Na^+, –1.16; K^+, –2.01; Co^{2+}, –3.08; Ni^{2+}, –3.08; Cu^{2+}, –3.3; Cd^{2+}, –2.57; Hg^{2+}, +1.93; Pb^{2+}, –1.81	SSM	0.1	0.1	50.01	$10^{-4.0}$–$10^{-1.0}$	25 °C; $c_{dl} = 10^{-4}$ M; t_{resp} = 3 s	[7, 8]
		Na^+, –1.21; K^+, –2.14; Co^{2+}, –3.02; Ni^{2+}, –3.02; Cu^{2+}, –2.59; Hg^{2+}, +1.79; Pb^{2+}, –1.86	SSM	0.1	0.1	51.74	–	25 °C; $c_{dl} = 10^{-4}$ M; t_{resp} = 2 s; on glassy carbon	[7]
Ag^+-13	**Ag^+-13** (w = 2 %), KTpClPB (x_i = 10 %), oNPOE (w = 65 %), PVC (w = 33 %)	K^+, –2.2; Ca^{2+}, –3.5; Cu^{2+}, –3.2; Cd^{2+}, –3.2; Pb^{2+}, –3.2	FIM	–	0.01	–		CHEMFET; r.o.o.g.	[9]
	Ag^+-13 (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 64 %), PVC (w = 32 %)	K^+, –2.6; Ca^{2+}, –3.4; Cu^{2+}, –3.9; Cd^{2+}, –3.7; Hg^{2+}, –1.0; Pb^{2+}, –3.6	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-14	**Ag^+-14** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	K^+, –2.0; Ca^{2+}, –2.8; Cu^{2+}, –3.2; Cd^{2+}, –3.1; Pb^{2+}, –3.0	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
	Ag^+-14 (w = 2 %), KTpClPB (x_i = 10 %), oNPOE (w = 65 %), PVC (w = 33 %)	K^+, –2.3; Ca^{2+}, –4.6; Cu^{2+}, –3.6; Cd^{2+}, –3.6; Pb^{2+}, –3.8	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
	Ag^+-14 (w = 2 %), KTpClPB (x_i = 50 %),	K^+, –2.9; Ca^{2+}, –4.4; Cu^{2+}, –4.1; Cd^{2+}, –4.5;	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]

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Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	oNPOE (w = 64 %), PVC (w = 32 %)	Pb^{2+}, –4.5							
	Ag^+-14 (w = 1.9 %), KTpClPB (x_i = 100 %), oNPOE (w = 63 %), PVC (w = 32 %)	K^+, –3.0; Ca^{2+}, –4.3; Cu^{2+}, –4.0; Cd^{2+}, –4.3; Pb^{2+}, –4.3	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-15	**Ag^+-15** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 64 %), PVC (w = 32 %)	K^+, –3.2; Ca^{2+}, –4.5; Cu^{2+}, –4.8; Cd^{2+}, –4.8; Pb^{2+}, –4.7	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-16	**Ag^+-16** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 64 %), PVC (w = 32 %)	K^+, –2.8; Ca^{2+}, –4.1 (–4.2) Cu^{2+}, –4.1; Cd^{2+}, –4.1 (–4.2) Pb^{2+}, –4.1	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-17	**Ag^+-17** (w = 2 %), KTpClPB (x_i = 10 %), oNPOE (w = 65 %), PVC (w = 33 %)	K^+, –2.9; Ca^{2+}, –4.1 Cu^{2+}, –4.3; Cd^{2+}, –4.0; Hg^{2+}, –1.8; Pb^{2+}, –4.2	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
	Ag^+-17 (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 63 %), PVC (w = 33 %)	K^+, –3.1; Ca^{2+}, –4.1 Cu^{2+}, –4.3; Cd^{2+}, –4.1; Hg^{2+}, –1.3; Pb^{2+}, –4.2	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-18	**Ag^+-18** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 64 %), PVC (w = 33 %)	K^+, –3.0; Ca^{2+}, –4.0 Cu^{2+}, –4.1; Cd^{2+}, –4.3; Pb^{2+}, –4.3	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-19	**Ag^+-19** (w = 2 %), KTpClPB (x_i = 50 %), oNPOE (w = 64 %), PVC (w = 32 %)	K^+, –2.8; Ca^{2+}, –3.3 Cu^{2+}, –3.9; Cd^{2+}, –3.8; Pb^{2+}, –4.1	FIM	–	0.01	–	–	CHEMFET; r.o.o.g.	[9]
Ag^+-20	**Ag^+-20** (w =7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.721; K^+, –4.770; Mg^{2+}, –5.553; Ca^{2+}, –5.094; Sr^{2+}, –5.387; Co^{2+}, –5.060; Ni^{2+}, –5.602; Cu^{2+}, –4.770; Zn^{2+}, –5.114; Cd^{2+}, –5.155; Hg^{2+}, –3.013; Tl^+, –4.959; Pb^{2+}, –5.056	FIM	–	–	59.1 ± 0.7	10^{-7}–10^{-2}	25.0 ± 0.1 °C; $t_{resp} < 5$ s; $c_{dl} = 5.60 \times 10^{-7}$ M; $\tau > 270$ d	[10]

Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-21	**Ag^+-21** (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.833; K^+, –4.983; Mg^{2+}, –5.458; Ca^{2+}, –5.344; Sr^{2+}, –5.389; Co^{2+}, –5.259; Ni^{2+}, –5.658; Cu^{2+}, –5.055; Zn^{2+}, –5.412; Cd^{2+}, –5.556; Hg^{2+}, –2.983; Tl^+, –4.845; Pb^{2+}, –5.453	FIM	–	–	59.5 ± 0.1	10^{-7}–10^{-2}	25.0 ± 0.1 °C; t_{resp} < 4 s; $c_{dl} = 7 \times 10^{-7}$ M; τ > 210 d	[10]
Ag^+-22	**Ag^+-22** (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.921; K^+, –4.886; Mg^{2+}, –5.260; Ca^{2+}, –5.347; Co^{2+}, –5.009; Ni^{2+}, –5.367; Cu^{2+}, –4.959; Zn^{2+}, –5.367; Cd^{2+}, –5.456; Hg^{2+}, –2.745; Tl^+, –4.638; Pb^{2+}, –4.237	FIM	–	–	60.5 ± 0.5	10^{-7}–10^{-2}	25.0 ± 0.1 °C; t_{resp} < 5 s; $c_{dl} = 1.26 \times 10^{-6}$ M; τ > 210 d	[10]
Ag^+-23	**Ag^+-23** (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.585; K^+, –4.319; Mg^{2+}, –5.161; Ca^{2+}, –5.041; Co^{2+}, –4.854; Ni^{2+}, –5.409; Cu^{2+}, –5.056; Zn^{2+}, –4.770; Cd^{2+}, –4.921; Hg^{2+}, –2.796; Tl^+, –4.244; Pb^{2+}, –5.004	FIM	–	–	57.9 ± 0.5	10^{-7}–10^{-2}	25.0 ± 0.1 °C; t_{resp} < 10 s; $c_{dl} = 1.58 \times 10^{-6}$ M; τ > 120 d	[10]
Ag^+-24	**Ag^+-24** (w = 1 %), KTpClPB (x_i = 75 %), BBPA (w = 65–66 %), PVC (w = 33 %)	Li^+, –5.0; Na^+, –5.0; K^+, –4.8; NH_4^+, –5.0; Mg^{2+}, –5.4; Ca^{2+}, –5.4; Ba^{2+}, –5.4; Co^{2+}, –5.4; Ni^{2+}, –5.4; Cu^{2+}, –5.2; Zn^{2+}, –5.4; Cd^{2+}, –5.2; Hg^{2+}, –2.2 (pH 2); Pb^{2+}, –4.7	FIM	–	0.1 Hg^{2+}, 10^{-4}	54.7	< 10^{-3}	20 °C; t_{95} < 15 s; $c_{dl} = 10^{-5.5}$ M; pH > 3; drift of –0.02 mV/day	[11]
Ag^+-25	**Ag^+-25** (w = 1 %), KTpClPB (x_i = 75 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	Li^+, –4.9; Na^+, –4.9; K^+, –4.9; NH_4^+, –5.2; Mg^{2+}, –5.5; Ca^{2+}, –5.5; Ba^{2+}, –5.7; Co^{2+}, –5.5; Ni^{2+}, –5.7; Cu^{2+}, –5.3; Zn^{2+}, –5.5; Cd^{2+}, –4.6; Hg^{2+}, –1.4 (pH 2); Pb^{2+}, –4.6	FIM	–	0.1 Hg^{2+}, 10^{-4}	53.7	< $10^{-2.5}$	20 °C; t_{95} < 10 s; $c_{dl} = 10^{-6.0}$ M; pH > 2.5; drift of –1.0 mV/day	[11]

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Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$lgK_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Ag^+-25 (w = 1 %), KTpClPB (x_i = 75 %), BBPA (w = 65–66 %), PVC (w = 33 %)	Li^+, –5.3; Na^+, –5.0; K^+, –4.6; NH_4^+, –5.3; Mg^{2+}, –5.5; Ca^{2+}, –5.5; Ba^{2+}, –5.5; Co^{2+}, –5.5; Ni^{2+}, –5.0; Cu^{2+}, –5.3; Zn^{2+}, –5.5; Cd^{2+}, –5.3; Hg^{2+}, –2.5 (pH 2); Pb^{2+}, –4.6	FIM	–	0.1 Hg^{2+}, 10^{-4}	56.7	$< 10^{-1.0}$	20 °C; $t_{95} < 10$ s; $c_{dl} = 10^{-5.4}$ M; pH > 2.5; drift of –0.36 mV/day	[11]
	Ag^+-25 (w = 1.9 %), KTFPB (x_i = 50 %), polysiloxane functionalized with 10 % 3-cyanopropyl group (w = 96.9 %)	K^+, –4.7; H^+, –2.5; Ca^{2+}, –4.3; Cu^{2+}, –4.4; Cd^{2+}, –4.0; Hg^{2+}, –2.4	FIM	–	0.1 K^+, 1 H^+, $10^{-2.5}$	–	–	CHEMFET	[12]
	Ag^+-25 (w = 1.9 %), KTFPB (x_i = 50 %), polysiloxane functionalized with 10 % 3-(*p*-acetylphenoxy)propyl group (w = 96.9 %), dimethoxy-2-phenyl-acetophenone (w = 0.5 %)	K^+, –3.8; H^+, –2.5; Ca^{2+}, –4.2; Cu^{2+}, –4.4; Cd^{2+}, –4.0; Hg^{2+}, –2.0	FIM	–	0.1 K^+, 1 H^+, $10^{-2.5}$ Hg^{2+}, 10^{-4}	–	–	CHEMFET	[12]
	Ag^+-25 (w = 1.9 %), KTFPB (x_i = 50 %), polysiloxane functionalized with 10 % 3-acetoxypropyl group (w = 96.9 %), dimethoxy-2-phenylacetophenone (w = 0.5 %)	K^+, –5.3; H^+, –2.3; Ca^{2+}, –3.9; Cu^{2+}, –4.4; Cd^{2+}, –3.9; Hg^{2+}, –2.1 Hg^{2+}, 10^{-4}	FIM	–	0.1 K^+, 1 H^+, $10^{-2.5}$	–	–	CHEMFET	[12]
Ag^+-26	**Ag^+-26** (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.8; Ca^{2+}, –5.4; Co^{2+}, –5.6; Ni^{2+}, –5.5; Cu^{2+}, –5.0; Zn^{2+}, –5.7; Cd^{2+}, –5.6; Pb^{2+}, –5.4	FIM	–	0.1	62	–	$t_{resp} < 10$ s; $c_{dl} = 6.6 \times 10^{-7}$ M; $\tau > 270$ d	[6]
Ag^+-27	**Ag^+-27** (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.9; Ca^{2+}, –5.4; Co^{2+}, –5.9; Ni^{2+}, –5.6; Cu^{2+}, –4.2; Zn^{2+}, –5.5; Cd^{2+}, –5.6; Pb^{2+}, –6.0	FIM	–	0.1	62	–	$t_{resp} < 5$ s; $c_{dl} = 4.0 \times 10^{-7}$ M; $\tau > 270$ d	[6]
Ag^+-28	**Ag^+-28** (w = 7 %), DOP (w = 62 %), PVC (w = 31 %)	Na^+, –4.9; Ca^{2+}, –5.3; Co^{2+}, –5.9; Ni^{2+}, –5.5; Cu^{2+}, –4.2; Zn^{2+}, –5.4; Cd^{2+}, –5.5; Pb^{2+}, –5.8	FIM	–	0.1	62	–	$t_{resp} < 6$ s; $c_{dl} = 4.6 \times 10^{-7}$ M; $\tau > 270$ d	[6]
		Na^+, –4.6; Ca^{2+}, –4.5; Hg^{2+}, –1.9; Tl^+, –4.5;	FIM	–	0.1; Hg^{2+}, 0.001	56–62	–	CHEMFET; $\tau > 42$ d	[13]

Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-29	**Ag^+-29** (w = 1 %), KTpClPB (x_i = 20 %), DBS (w = 66 %), PVC (w = 33 %)	Li^+, –2.6; Na^+, –2.5; K^+, –2.1; Rb^+, –2.0; Cs^+, –1.9; NH_4^+, –2.2; H^+, –2.1; Mg^{2+}, –4.8; Ca^{2+}, –4.4; Sr^{2+}, –4.2; Ba^{2+}, –4.2; Al^{3+}, –3.5; Cr^{3+}, –3.6; Mn^{2+}, –3.9; Fe^{3+}, –3.4; Co^{2+}, –4.1; Ni^{2+}, –4.2; Cu^{2+}, –3.2; Zn^{2+}, –4.4; Cd^{2+}, –3.6; Tl^+, –0.9; Pb^{2+}, –3.2	SSM	0.01	0.01	56–59	–	r.o.o.g; t_{resp} of a few sec; $c_{dl} = 10^{-4.5}$ $-10^{-5.3}$ M; .	[14]
	Ag^+-29 (w = 1 %), KTpClPB (x_i = 40 %), DBS (w = 65 %), PVC (w = 33 %)	Li^+, –3.1; Na^+, –2.9; K^+, –2.7; Rb^+, –2.6; Cs^+, –2.5; NH_4^+, –2.7; H^+, –1.8; Mg^{2+}, –4.4; Ca^{2+}, –3.9; Sr^{2+}, –3.8; Ba^{2+}, –4.0; Al^{3+}, –3.1; Cr^{3+}, –3.3; Mn^{2+}, –3.5; Fe^{3+}, –3.3; Co^{2+}, –4.0; Ni^{2+}, –3.8; Cu^{2+}, –3.0; Zn^{2+}, –4.2; Cd^{2+}, –3.4; Tl^+, –1.2; Pb^{2+}, –3.1	SSM	0.01	0.01	56–59	–	r.o.o.g.; t_{resp} of a few sec; $c_{dl} = 10^{-4.5}$ $-10^{-5.3}$ M	[14]
Ag^+-30	**Ag^+-30** (w = 2 %), KTpClPB (x_i = 14 %), oNPOE (w = 63.5 %), PVC (w = 34 %)	Li^+, –2.5; Na^+, –2.2; K^+, –2.5; NH_4^+, –2.5; Mg^{2+}, –2.5; Ca^{2+}, –2.5; Sr^{2+}, –2.7; Ba^{2+}, –2.7; Mn^{2+}, –2.5; Fe^{3+}, –2.7; Co^{2+}, –2.5; Ni^{2+}, –2.5; Cu^{2+}, –2.7; Zn^{2+}, –2.8; Cd^{2+}, –2.5; Pb^{2+}, –2.7	MSM	0.001	0.1	58.0	10^{-5}–10^{-1}	r.o.o.g.; t_{resp} < 10 s	[15]
Ag^+-31	**Ag^+-31** (w = 2 %), KTpClPB (x_i = 14 %), oNPOE (w = 63.5 %), PVC (w = 34 %)	Li^+, –3.0; Na^+, –3.0; K^+, –3.0; NH_4^+, –3.5; Mg^{2+}, –4.0; Sr^{2+}, –4.0; Ba^{2+}, –4.0; Al^{3+}, –4.7; Cr^{3+}, –4.0; Ni^{2+}, –4.0; Cu^{2+}, –4.0; Zn^{2+}, –4.0; Cd^{2+}, –5.0	MSM	0.001	0.1	55.0	10^{-4}–10^{-2}	r.o.o.g.	[15]

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Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-32	**Ag^+-32** (w = 2 %), KTpClPB (x_i = 17 %), oNPOE (w = 63.5 %), PVC (w = 34 %)	Li^+, –2.7; Na^+, –2.7; K^+, –2.7; NH_4^+, –3.0; Mg^{2+}, –2.7; Sr^{2+}, –2.7; Ba^{2+}, –3.0; Mn^{2+}, –2.7; Fe^{3+}, –3.4; Co^{2+}, –2.7; Ni^{2+}, –2.7; Cu^{2+}, –2.5; Zn^{2+}, –3.2; Cd^{2+}, –2.7; Pb^{2+}, –2.9	MSM	0.001	0.1	49	10^{-4}–10^{-1}	r.o.o.g.	[15]
Ag^+-33	**Ag^+-33** (w = 1 %), KTpClPB (x_i = 50 %), DOP (w = 65–66 %), PVC (w = 33 %)	K^+, –2.8; Ca^{2+}, –3.9; Cu^{2+}, –3.9; Cd^{2+}, –3.8; Hg^{2+}, –2.6; Pb^{2+}, –3.8	FIM	–	0.01 (pH 4, pH 3 for Hg^{2+})	–	–	r.o.o.g.; 20 °C	[16]
Ag^+-34	**Ag^+-34** (w = 1 %), KTpClPB (x_i = 50 %), DOP (w = 65–66 %), PVC (w = 33 %)	K^+, –2.8; Ca^{2+}, –4.3; Cu^{2+}, –3.9; Cd^{2+}, –3.8; Hg^{2+}, –2.4; Pb^{2+}, –3.9	FIM	–	0.01 (pH 4, pH 3 for Hg^{2+})	–	–	r.o.o.g.; 20 °C	[16]
Ag^+-35	**Ag^+-35** (w = 1 %), KTpClPB (x_i = 50 %), DOP (w = 65–66 %), PVC (w = 33 %)	K^+, –2.6; Ca^{2+}, –3.3; Cu^{2+}, –3.6; Cd^{2+}, –3.5; Hg^{2+}, –1.0; Pb^{2+}, –3.5	FIM	–	0.01 (pH 4, pH 3 for Hg^{2+})	–	–	r.o.o.g.; 20 °C	[16]
Ag^+-36	**Ag^+-36** (w = 1 %), KTpClPB (x_i = 75 %), oNPOE (w = 65–66 %), PVC (w = 33 %),	K^+, –5.4; Ca^{2+}, –6.0; Cu^{2+}, –6.3; Cd^{2+}, –6.6; Hg^{2+}, –2.5; Pb^{2+}, –6.0	SSM	–	0.01 (pH 4, pH 3 for Hg^{2+})	–	–	r.o.o.g.; t_{95} < 10 s; 20 °C	[16]
Ag^+-37	**Ag^+-37** (w = 1 %), KTpClPB (x_i = 75 %), oNPOE (w = 65–66 %), PVC (w = 33 %)	K^+, –3.6; Ca^{2+}, –4.5; Cu^{2+}, –4.3; Cd^{2+}, –4.5; Hg^{2+}, –1.9; Pb^{2+}, –4.0	SSM	–	0.01 (pH 4, pH 3 for Hg^{2+})	–	–	r.o.o.g.; 20 °C; 4 < pH < 8	[16]
Ag^+-38	**Ag^+-38** (w = 1 %), KTpClPB (x_i = 75 %), oNPOE (w = 65–66 %), PVC (w =33 %)	K^+, –3.0; Ca^{2+}, –3.8; Cu^{2+}, –3.8; Cd^{2+}, –3.2; Hg^{2+}, –2.0; Pb^{2+}, –3.5	SSM	–	0.01 (pH 4, pH 3 for Hg^{2+})	–	–	r.o.o.g.; 20 °C	[16]
Ag^+-39	**Ag^+-39** (w = 3 %), KTpClPB (x_i = 21 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, +0.7; Na^+, –1.5; K^+, –2.1; Mg^{2+}, –5.7; Ca^{2+}, –4.6; Cr^{3+}, –5.4; Mn^{2+}, –5.1; Fe^{3+}, –5.2; Co^{2+}, –4.8; Cu^{2+}, –4.6; Zn^{2+}, –4.7; Cd^{2+}, –4.3; Hg^{2+}, –1.2	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]

Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-40	**Ag^+-40** (w = 3 %), KTpClPB (x_i = 22 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –3.6; Na^+, –3.8; K^+, –3.5; Mg^{2+}, –5.4; Ca^{2+}, –5.3; Cr^{3+}, –5.2; Mn^{2+}, –5.2; Fe^{3+}, –5.2; Co^{2+}, –5.5; Cu^{2+}, –4.9; Zn^{2+}, –5.4; Cd^{2+}, –5.1; Hg^{2+}, –2.1	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-41	**Ag^+-41** (w = 3 %), KTpClPB (x_i = 22 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –4.0; Na^+, –4.4; K^+, –4.2; Mg^{2+}, –6.2; Ca^{2+}, –6.4; Cr^{3+}, –5.8; Mn^{2+}, –6.2; Fe^{3+}, –5.4; Co^{2+}, –6.4; Cu^{2+}, –5.6; Zn^{2+}, –6.2; Cd^{2+}, –5.9; Hg^{2+}, –1.5	SSM	0.001	0.001	N	10^{-6}–10^{-2}	25 ± 0.5 °C; r.o.o.g.; t_{95} < 8 s (10^{-2} –10^{-6} M); t_{resp} = 60 s (10^{-2} –10^{-6} M)	[17]
Ag^+-42	**Ag^+-42** (w = 3 %), KTpClPB (x_i = 23 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –9.1; Na^+, –9.0; K^+, –8.6; Cr^{3+}, –11.2; Mn^{2+}, –11.6; Fe^{3+}, –10.2; Co^{2+}, –11.5; Cu^{2+}, –9.6; Zn^{2+}, –11.2; Cd^{2+}, –11.1; Hg^{2+}, –1.8	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.; irreversible response to Ag^+	[17]
Ag^+-43	**Ag^+-43** (w = 3 %), KTpClPB (x_i = 23 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –2.9; Na^+, –2.9; K^+, –2.9; Mg^{2+}, –4.3; Ca^{2+}, –4.4; Cr^{3+}, –4.1; Mn^{2+}, –4.0; Fe^{3+}, –4.5; Co^{2+}, –4.2; Cu^{2+}, –4.1; Zn^{2+}, –4.2; Cd^{2+}, –4.3; Hg^{2+}, –1.3; Pb^{2+}, –4.2;	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-44	**Ag^+-44** (w = 3 %), KTpClPB (x_i = 27 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –3.2; Na^+, –3.4; K^+, –3.4; Mg^{2+}, –5.1; Ca^{2+}, –4.9; Cr^{3+}, –4.5; Mn^{2+}, –5.3; Fe^{3+}, –5.2; Co^{2+}, –5.2; Cu^{2+}, –4.8; Zn^{2+}, –5.3; Cd^{2+}, –5.2; Hg^{2+}, –0.6; Pb^{2+}, –4.8;	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-45	**Ag^+-45** (w = 3 %), KTpClPB (x_i = 28 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –1.8; Na^+, –1.9; K^+, –1.6; Rb^+, –1.6; Cs^+, –1.6; NH_4^+, –1.6; Mg^{2+}, –4.3; Ca^{2+}, –4.2;	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]

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Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Cr^{3+}, –3.3; Mn^{2+}, –3.8; Fe^{3+}, –2.6; Co^{2+}, –3.9; Cu^{2+}, –3.5; Zn^{2+}, –4.0; Cd^{2+}, –3.9; Hg^{2+}, +0.1; Pb^{2+}, –2.8							
Ag^+-46	**Ag^+-46** (w = 3 %), KTpClPB (x_i = 29 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –1.2; Na^+, –1.3; K^+, –0.9; Rb^+, –0.9; Cs^+, –0.7; NH_4^+, –0.9; Mg^{2+}, –3.6; Ca^{2+}, –3.5; Cr^{3+}, –2.8; Mn^{2+}, –3.3; Fe^{3+}, –2.1; Co^{2+}, –3.3; Cu^{2+}, –2.9; Zn^{2+}, –3.5; Cd^{2+}, –3.4; Hg^{2+}, –0.5; Pb^{2+}, –2.2	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-47	**Ag^+-47** (w = 3 %), KTpClPB (x_i = 22 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –2.1; Na^+, –2.3; K^+, –2.3; Rb^+, –2.3; Cs^+, –2.3; NH_4^+, –2.4; Mg^{2+}, –3.9; Ca^{2+}, –4.0; Cr^{3+}, –3.4; Mn^{2+}, –3.4; Fe^{3+}, –3.7; Co^{2+}, –3.6; Cu^{2+}, –3.4; Zn^{2+}, –3.6; Cd^{2+}, –3.6; Hg^{2+}, –2.1; Pb^{2+}, –3.4	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-48	**Ag^+-48** (w = 3 %), KTpClPB (x_i = 23 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –1.5; Na^+, –1.6; K^+, –1.3; Rb^+, –1.3; Cs^+, –1.3; NH_4^+, –1.3; Mg^{2+}, –3.7; Ca^{2+}, –3.7; Cr^{3+}, –2.9; Mn^{2+}, –3.3; Fe^{3+}, –2.3; Co^{2+}, –3.5; Cu^{2+}, –3.1; Zn^{2+}, –3.6; Cd^{2+}, –3.2; Hg^{2+}, +0.7; Pb^{2+}, –1.9	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-49	**Ag^+-49** (w = 3 %), KTpClPB (x_i = 24 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –0.8; Na^+, –0.8; K^+, –0.4; Rb^+, –0.4; Cs^+, –0.3; NH_4^+, –0.5; Mg^{2+}, –2.9; Ca^{2+}, –2.8; Cr^{3+}, –2.5; Mn^{2+}, –2.7; Fe^{3+}, –1.6; Co^{2+}, –2.8; Cu^{2+}, –2.4; Zn^{2+}, –2.8;	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]

Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Cd^{2+}, –2.7; Hg^{2+}, –0.8; Pb^{2+}, –1.7							
Ag^+-50	**Ag^+-50** (w = 3 %), KTpClPB (x_i = 17 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –2.7; Na^+, –3.0; K^+, –3.0; Rb^+, –3.1; Cs^+, –2.9; NH_4^+, –2.8; Mg^{2+}, –4.5; Ca^{2+}, –4.4; Cr^{3+}, –4.2; Mn^{2+}, –4.6; Fe^{3+}, –3.7; Co^{2+}, –4.6; Cu^{2+}, –3.6; Zn^{2+}, –4.1; Cd^{2+}, –3.6; Hg^{2+}, –0.2; Pb^{2+}, –2.4	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-51	**Ag^+-51** (w = 3 %), KTpClPB (x_i = 18 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –1.3; Na^+, –1.6; K^+, –1.6; Rb^+, –1.6; Cs^+, –1.6; NH_4^+, –1.2; Mg^{2+}, –3.3; Ca^{2+}, –3.0; Cr^{3+}, –2.5; Mn^{2+}, –3.3; Fe^{3+}, –1.6; Co^{2+}, –3.4; Cu^{2+}, –2.2; Zn^{2+}, –3.0; Cd^{2+}, –2.6; Hg^{2+}, 0.0; Pb^{2+}, –0.6	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-52	**Ag^+-52** (w = 3 %), KTpClPB (x_i = 20 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –1.1; Na^+, –1.1; K^+, –0.7; Rb^+, –0.7; Cs^+, –0.6; NH_4^+, –0.7; Mg^{2+}, –3.4; Ca^{2+}, –3.0; Cr^{3+}, –3.1; Mn^{2+}, –3.2; Fe^{3+}, –2.2; Co^{2+}, –3.1; Cu^{2+}, –2.7; Zn^{2+}, –3.1; Cd^{2+}, –2.9; Hg^{2+}, –0.5; Pb^{2+}, –1.9	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]
Ag^+-53	**Ag^+-53** (w = 3 %), KTpClPB (x_i = 28 %), BBPA (w = 67 %), PVC (w = 29 %)	Li^+, –2.6; Na^+, –2.6; K^+, –2.7; Rb^+, –2.7; Cs^+, –2.9; NH_4^+, –2.6; Mg^{2+}, –4.2; Ca^{2+}, –4.3; Cr^{3+}, –4.4; Mn^{2+}, –4.2; Fe^{3+}, –4.6; Co^{2+}, –4.2; Cu^{2+}, –3.9; Zn^{2+}, –4.0; Cd^{2+}, –3.6; Hg^{2+}, –1.9; Pb^{2+}, –3.8	SSM	0.001	0.001	–	–	25 ± 0.5 °C; r.o.o.g.	[17]

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Table 13: Ag^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Ag^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Ag^+-54	**Ag^+-54** (w = 1.5 %), KTpClPB (x_i = 40 %), oNPPE (w = 65 %), PVC (w = 33 %)	Na^+, –4.080; K^+, –4.080; H^+, –1.569; Mg^{2+}, –5.040; Ca^{2+}, –4.719; Fe^{3+}, –4.070; Co^{2+}, –5.140; La^{3+}, –3.220; Hg^{2+}, –1.879; Pb^{2+}, –5.125; UO_2^{2+}, –3.240	SSM	0.01	0.01	56.7	10^{-5}–10^{-2}	25 °C; t_{resp} = 30 s; $c_{dl} = 1.0 \times 10^{-5}$ M	[18]
	Ag^+-54 (w = 1.5 %), KTpClPB (x_i = 40 %), DOA (w = 65 %), PVC (w = 33 %)	Na^+, –3.340; K^+, –3.010; Mg^{2+}, –5.170; Ca^{2+}, –5.070; Fe^{3+}, –2.921; Co^{2+}, –5.150; Hg^{2+}, –0.710; Pb^{2+}, –4.200	SSM	0.01	0.01	54.0	10^{-5}–10^{-2}	25 °C; t_{resp} = 50 s; $c_{dl} = 1.0 \times 10^{-5}$ M	[18]

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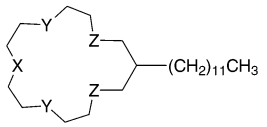
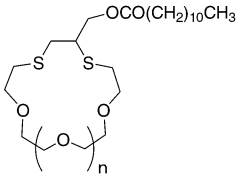
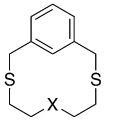


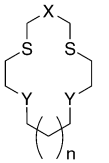
Ag^+- 1 (M_r = 418.67): X = S, Y = Z = O
Ag^+- 2 (M_r = 434.74): X = Z = O, Y = S
Ag^+- 3 (M_r = 434.74): X = Y = O, Z = S



Ag^+- 4 (M_r = 464.72): n = 1
Ag^+- 5 (M_r = 528.78): n = 2

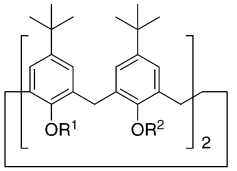


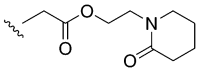
Ag^+- 6 (M_r = 240.39): X = O
Ag^+- 7 (M_r = 256.45): X = S
Ag^+- 8 (M_r = 238.41): X = CH_2



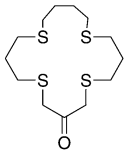
Ag^+- 13 (M_r = 282.51): n = 1, X = CO, Y = S
Ag^+- 14 (M_r = 268.53): n = 1, X = CH_2, Y = S
Ag^+- 15 (M_r = 280.54): n = 1, X = C CH_2, Y = S

Table 13: Ag^+-Selective Electrodes (*Continued*)



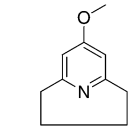
Ag⁺- 9 (M_r = 1381.77): $R^1 = R^2 =$ 

Ag⁺- 10 (M_r = 1165.82): $R^1 = R^2 = CH_2CSN(CH_2CH_3)_2$
Ag⁺- 11 (M_r = 1061.45): $R^1 = CH_2CO_2CH_2CH_2SCH_3$, $R^2 = CH_2CO_2CH_2CH_3$
Ag⁺- 12 (M_r = 1177.65): $R^1 = R^2 = CH_2CO_2CH_2CH_2SCH_3$
Ag⁺- 24 (M_r = 945.50): $R^1 = R^2 = CH_2CH_2SCH_3$
Ag⁺- 25 (M_r = 797.22): R^1 = H, $R^2 = CH_2CH_2SCH_3$

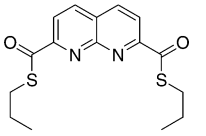


Ag⁺- 18 (M_r = 324.58)

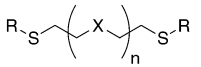
Ag⁺- 26 (M_r = 90.18): $R^1 = R^2$ = ethyl
Ag⁺- 27 (M_r = 138.23): R^1 = phenyl, R^2 = ethyl
Ag⁺- 28 (M_r = 186.27): $R^1 = R^2$ = phenyl

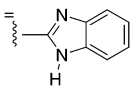


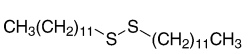
Ag⁺- 29 (M_r = 163.22)



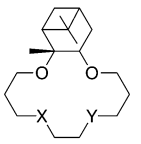
Ag⁺- 32 (M_r = 334.46)



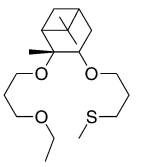
Ag⁺- 34 (M_r = 374.74): n = 0, R = decyl
Ag⁺- 35 (M_r = 434.85): n = 1, X = S, R = decyl
Ag⁺- 36 (M_r = 390.56): n = 1, X = O, R = 2-naphthyl
Ag⁺- 37 (M_r = 420.59): n = 1, X = O, R = 1-naphthyl-amino
Ag⁺- 38 (M_r = 370.49): n = 1, X = O, R = 



Ag⁺- 33 (M_r = 402.79)

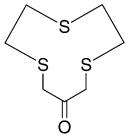


Ag⁺- 39 (M_r = 312.44): X = Y = O
Ag⁺- 40 (M_r = 328.51): X = O, Y = S
Ag⁺- 41 (M_r = 328.51): X = S, Y = O
Ag⁺- 42 (M_r = 344.58): X = Y = S

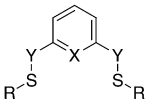


Ag⁺- 43 (M_r = 344.55)

Ag⁺- 16 (M_r = 268.47): n = 0, X = CO, Y = S
Ag⁺- 19 (M_r = 236.35): n = 0, X = CO, Y = O



Ag⁺- 17 (M_r = 208.37)



Ag⁺- 20 (M_r = 226.30): X = CH, Y = CH_2, R = ethyl
Ag⁺- 21 (M_r = 310.56): X = CH, Y = CH_2, R = pentyl
Ag⁺- 22 (M_r = 394.72): X = CH, Y = CH_2, R = octyl
Ag⁺- 23 (M_r = 506.93): X = CH, Y = CH_2, R = dodecyl
Ag⁺- 30 (M_r = 283.41): X = N, Y = CO, R = propyl
Ag⁺- 31 (M_r = 282.42): X = CH, Y = CO, R = propyl

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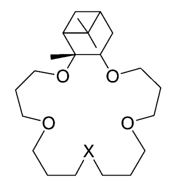
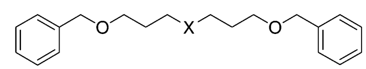
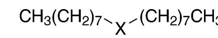
Table 13: Ag^+-Selective Electrodes (*Continued*)



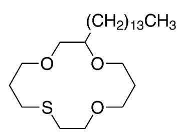
Ag⁺- 44 (M_r = 400.62): X = S
Ag⁺- 45 (M_r = 416.62): X = SO
Ag⁺- 46 (M_r = 432.62): X = SO_2



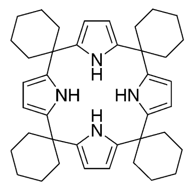
Ag⁺- 47 (M_r = 330.49): X = S
Ag⁺- 48 (M_r = 346.48): X = SO
Ag⁺- 49 (M_r = 362.48): X = SO_2



Ag⁺- 50 (M_r = 258.51): X = S
Ag⁺- 51 (M_r = 274.51): X = SO
Ag⁺- 52 (M_r = 290.51): X = SO_2



Ag⁺-53 (M_r = 416.70)



Ag⁺- 54 (M_r = 588.87)

Table 14: Zn^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Zn^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Zn^{2+}-1	**Zn^{2+}-1** (w = 2 %), NaTPB (x_i = 70 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.6; Na^+, –2.1; K^+, –1.7; NH_4^+, +0.3; H^+, +1.5; Mg^{2+}, –1.5; Ca^{2+}, –2.4; Cd^{2+}, –0.8; Cu^{2+}, +0.3; Pb^{2+}, 0.0	SSM	0.1	0.1	nN	–	lg P_{TLC} = 8; pH ≥ 6; r.o.o.g.	[1]
	Zn^{2+}-1 (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.0; Na^+, –0.5; K^+, –2.0; NH_4^+, –0.1; Mg^{2+}, –1.0; Ca^{2+}, –1.6	SSM	0.1	0.1	nN	–	pH ≥ 6; r.o.o.g.	[1]
	Zn^{2+}-1 (w = 2 %), KTpClPB (x_i = 30 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.4; Na^+, –2.1; K^+, –1.5; NH_4^+, +0.8; Mg^{2+}, –1.3; Ca^{2+}, –1.3	SSM	0.1	0.1	nN	–	pH ≥ 6; r.o.o.g.	[1]
	Zn^{2+}-1 (w = 2 %), KTpClPB (x_i = 45 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.2; Na^+, –2.3; K^+, –2.0; NH_4^+, –1.2; Mg^{2+}, –3.5; Ca^{2+}, –2.3	SSM	0.1	0.1	29.5	10^{-5}–10^{-1}	pH ≥ 6; $c_{dl} = 10^{-5.5}$ M; pH = 6.0; r.o.o.g.	[1]
	Zn^{2+}-1 (w = 2 %), KTpClPB (x_i = 70 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.6; Na^+, –2.7; K^+, –2.5; NH_4^+, +3.0; H^+, +0.6; Mg^{2+}, –3.5; Ca^{2+}, –2.9; Cd^{2+}, –3.6; Cu^{2+}, +0.2; Pb^{2+}, –2.0	SSM	0.1	0.1	nN	–	pH ≥ 6; r.o.o.g.	[1]
	Zn^{2+}-1 (w = 2 %), KTpClPB (x_i = 162 %), oNPOE (w = 65 %), PVC (w = 33 %)	Na^+, –0.9; K^+, –1.2; NH_4^+, –1.4; Mg^{2+}, –2.7; Ca^{2+}, –2.5	SSM	0.1	0.1	nN	–	pH ≥ 6;[1] r.o.o.g.	
Zn^{2+}-2	**Zn^{2+}-2** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %), KTpClPB (x_i = 70 %)	Li^+, –1.34; Na^+,–1.7; K^+, +0.05; NH_4^+, –0.05; H^+, +8; Mg^{2+}, –1.7; Ca^{2+}, +0.5; Cd^{2+}, –0.6; Cu^{2+}, +2.5; Pb^{2+}, +0.5	SSM	0.1	0.1	nN	–	pH ≥ 6; lg P_{TLC} = 3.0 r.o.o.g.	[1]
Zn^{2+}-3	**Zn^{2+}-3** (w = 2 %), KTpClPB (x_i = 70 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.2; Na^+, –1.7; K^+, –0.9; NH_4^+, –1.4; H^+, +6; Mg^{2+}, –2.6; Ca^{2+}, 0.0; Cd^{2+}, –0.5; Cu^{2+}, +2.3; Pb^{2+}, +2.3	SSM	0.1	0.1	nN	–	pH 6; [1] lg P_{TLC} = 4.6; r.o.o.g.	
Zn^{2+}-4	**Zn^{2+}-4** (w = 2 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –1.0; Na^+, –1.0; K^+, –0.4; NH_4^+, –1.7; H^+, +2.7; Mg^{2+}, –2.0;	SSM	0.1	0.1	nN	–	pH ≥ 6;[1] lg P_{TLC} = 7.0; r.o.o.g.	

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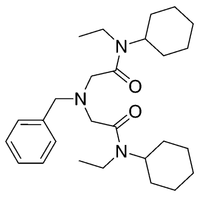
Table 14: Zn^{2+}-Selective Electrodes (*Continued*)

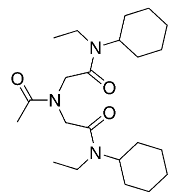
ionophore	membrane composition	$\lg K_{Zn^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ca^{2+}, –1.9							
	Zn^{2+}-4 (w = 2 %), KTpClPB (x_i = 30 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –2.4; Na^+, –2.8; K^+, –2.0; NH_4^+, –3.3; Mg^{2+}, –4.3; Ca^{2+}, –3.6	SSM	0.1	0.1	nN	–	pH ≥ 6; r.o.o.g.	[1]
	Zn^{2+}-4 (w = 2 %), KTpClPB (x_i = 70 %), oNPOE (w = 65 %), PVC (w = 33 %)	Li^+, –3.0; Na^+, –3.4; K^+, –3.2; NH_4^+, –3.6; H^+, +2.7; Mg^{2+}, –4.9; Ca^{2+}, –4.2; Cd^{2+}, –0.5; Cu^{2+}, +1.5; Pb^{2+}, 0.0	SSM	0.1	0.1	29.5	10^{-5}–10^{-1}	pH ≥ 6; $c_{dl} = 10^{-5.5}$ M; pH = 6.0; r.o.o.g.	[1]
Zn^{2+}-5	**Zn^{2+}-5** (w = 2 %), NaTPB (x_i = 31 %), oNPOE (w = 63.5 %), PVC (w = 34 %)	Li^+, –1.5; Na^+, –0.1 Cs^+, –0.6; NH_4^+, –0.6; Mg^{2+}, –2.8; Ca^{2+}, –1.1; Sr^{2+}, –0.4; Ba^{2+}, +1.3; Mn^{2+}, –0.3; Fe^{2+}, –0.2; Fe^{3+}, –0.7; Co^{2+}, +0.0; Ni^{2+}, –1.2; Cu^{2+}, +0.2; Zn^{2+}, –0.7	TSM	10^{-3}	10^{-1}	26	10^{-3}–10^{-1}	r.o.o.g.; K was obtained as $\lg K_{K^+,B^{n+}}$.	[2]
Zn^{2+}-6	**Zn^{2+}-6** (w = 5.4 %), KTpClPB (x_i = 12 %), oNPOE (w = 53.6 %), PVC (w = 40.2 %)	Na^+, –3.28; K^+, –3.77 NH_4^+, –3.27; Mg^{2+}, –3.14; Ca^{2+}, –2.82; Mn^{2+}, –2.08; Co^{2+}, –1.48; Ni^{2+}, –1.42; Cu^{2+}, +0.96; Pb^{2+}, +0.79; Fe^{3+}, –2.42; Hg^{2+}, Ag^+, interfere	SSM	–	–	28.0	10^{-6}–10^{-1}	25 ± 1 °C; $c_{dl} = 4.2 \times 10^{-7}$ M; t_{resp} = 2 s; 3.5 < pH < 6.5	[3]
Zn^{2+}-7	**Zn^{2+}-7** (w = 5.6%), DBP (w = 11.1 %), PVC (w = 83.3 %)	Li^+, +1.2; Na^+, +1.2; K^+, +1.3; NH_4^+, +1.3; Mg^{2+}, –0.8; Ca^{2+}, –0.65; Ba^{2+}, –0.9; Cr^{3+}, –1.3; Fe^{3+}, –1.25; Cu^{2+}, –0.75; Pb^{2+}, –0.75	FIM	–	0.01	22.0	1.58×10^{-4} –1.00 $\times 10^{-1}$	t_{resp} < 10 s; 2.8 < pH < 7.0; τ > 90 d	[3]
		Li^+, –0.75; Na^+, –0.75; K^+, –0.7; NH_4^+, –0.7; Mg^{2+}, –0.8; Ca^{2+}, –0.65; Ba^{2+}, –0.9; Cr^{3+}, –0.6; Fe^{3+}, –0.85; Cu^{2+}, –0.75; Pb^{2+}, –0.75	FIM	–	0.01			K was recalculated by omitting charge numbers of the ions.	

Table 14: Zn^{2+}-Selective Electrodes (*Continued*)

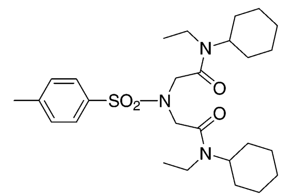
(1) E. Lindner, M. Horváth, K. Tóth, E. Pungor, *Anal. Lett.*, **25**, 453–470 (1992).
(2) J.E. Madden, T.J. Cardwell, R.W. Cattrall, LW. Deady, *Anal. Chim. Acta,* **319**, 129–134 (1996).
(3) R. Kojima, S. Kamata, *Anal. Sci.*, **10**, 409–412 (1994).
(4) S.S. Srivastava, V.K. Gupta, S. Jain, *Anal. Chem.*, **68**, 1272–1275 (1996).



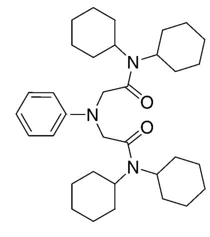
Zn^{2+}-1 (M_r = 441.66)



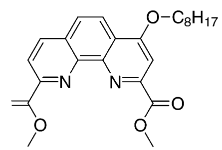
Zn^{2+}-2 (M_r = 393.57)



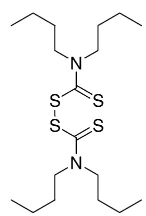
Zn^{2+}-3 (M_r = 505.72)



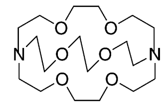
Zn^{2+}-4 (M_r = 535.82)



Zn^{2+}-5 (M_r = 424.50)



Zn^{2+}-6 (M_r = 408.74)



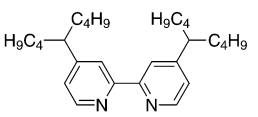
Zn^{2+}-7 (M_r = 376.50)

Table 15: Cd^{2+}-Selective Electrodes

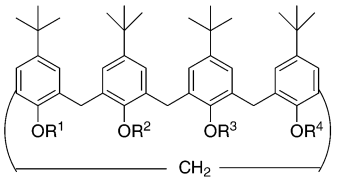
ionophore	membrane composition	$\lg K_{Cd^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Cd^{2+}-1	**Cd^{2+}-1** (w = 5 %), NaTPB (x_i = 63 %), DOP (w = 45 %), PVC (w = 47.5 %)	Co^{2+}, –0.97; Ni^{2+}, –2.40; Cu^{2+}, +5.77; Zn^{2+}, +0.85	SSM	0.1	0.1	30	$10^{-5.4}$–10^{-3}	CWE; $c_{dl} = 10^{-6}$ M	[1]
Cd^{2+}-2	**Cd^{2+}-2** (w = 2.1 %), KTpClPB (x_i = 63 %), DOP, PVC (weight ratio not given)	K^+, interferes; Ca^{2+}, –3.2; Cu^{2+}, –0.6; Pb^{2+}, interferes	FIM	–	0.1 0.01	30	–	ISFET	[2]
Cd^{2+}-3	**Cd^{2+}- 3** (w = 2.3 %), KTpClPB (x_i = 63 %), DOP, PVC (weight ratio not given)	K^+, interferes; Ca^{2+}, –2.3; Cu^{2+}, Pb^{2+}, interfere	FIM	–	0.1 0.01	30	–		[2]
Cd^{2+}-4	**Cd^{2+}-4** (w = 2.8 %), KTpClPB (x_i = 63 %), DOP, PVC (weight ratio not given)	K^+, –2.5; Ca^{2+}, –3.9; Cu^{2+}, Pb^{2+}, interfere	FIM	–	0.1 0.01	30	–		[2]
	Cd^{2+}-4 (w = 3 %), KTpClPB (x_i = 63 %), DOP, PVC (weight ratio not given)	K^+, ; –2.6, Ca^{2+}, –3.8; Cu^{2+}, Pb^{2+}, interfere	FIM	–	0.1 0.01	29	–		[2]
Cd^{2+}-5	**Cd^{2+}-5** (w = 2.1 %), KTpClPB (x_i = 63 %), DOP, PVC (weight ratio not given)	K^+, interferes; Ca^{2+}, –3.2; Cu^{2+}, Pb^{2+}, interfere	FIM	–	0.1 0.01	30	–		[2]
Cd^{2+}-6	**Cd^{2+}-6** (w = 5 %), BEHS (w = 62 %), PVC–PVA–PVAc (w = 33 %) PVA, poly(vinyl alcohol); PVAc, poly(vinyl acetate)	K^+, –3.11; Al^{3+}, –3.68; Hg^{2+}, +3.03; Fe^{2+}, –2.83; Cu^{2+}, +1.24; Pb^{2+}, –0.11;	FIM	–	0.1 0.01 0.001 5 x 10^{-5}	31.9	10^{-6} –8.4×10^{-3}	25 °C; ionic strength of 10^{-3} M $NaClO_4$; τ = 210 d; t_{resp} = 20 s	[3]
	Cd^{2+}-6 (w = 5 %), BEHS (w = 62 %), PVC–PVA–PVAc (w = 33 %) PVA, poly(vinyl alcohol); PVAc, poly(vinyl acetate)	K^+, –5.04; Al^{3+}, –4.19; Fe^{2+}, –2.36; Cu^{2+}, +1.60; Pb^{2+}, +0.45; Hg^{2+}, +3.47	FIM	–	1.0 0.02 0.01 0.001 10^{-4} 0.1	31.9	10^{-6} –8.4×10^{-3}	25 °C; ionic strength of 10^{-3} M $NaClO_4$; τ = 70 d; t_{resp} = 20 s; coated carbon elec.	[3]
Cd^{2+}-7	**Cd^{2+}-7** (w = 7 %), DBP (w = 13 %), PVC (w = 80 %)	Li^+, –1.10; Na^+, –0.9; K^+, –1.05; Rb^+, –1.05; NH_4^+, –1.10; Mg^{2+}, –0.75; Ca^{2+}, –0.65; Cr^{3+}, –0.63; Fe^{3+}, –0.70; Co^{2+}, –0.95; Cu^{2+}, –0.75; Pb^{2+}, –0.75; Hg^{2+}, –1.00; Zn^{2+}, –1.00	FIM	–	1.0 x 10^{-2}	20.0	5.00×10^{-3} –1.00 $\times 10^{-1}$	25 ± 1 °C; 3.8 < pH < 7.0; $c_{dl} = 3.16 \times 10^{-5}$ M; τ = 60 d; t_{resp} < 30 s	[4]

Table 15: Cd^{2+}-Selective Electrodes (*Continued*)

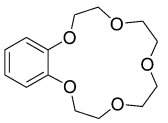
(1) A.C. Stevens, H. Freiser, *Anal. Chim. Acta*, **248**, 315–321 (1991).
(2) P.L.H.M. Cobben, R.J.M. Egberink, J.G. Bomer, P. Bergved, W. Verboom, D.N. Reinhoudt, *J. Am. Chem. Soc.*, **114**, 10573–10582 (1992).
(3) A. Borraccino, L. Campanella, M.P. Sammartino, M. Tomassetti, M. Battiilotti, *Sens. Actuators*, **B7**, 535–539 (1992).
(4) S.K. Srivasasta, V.K. Gupta, S. Jain, *Electroanalysis*, **8**, 938–940 (1996).



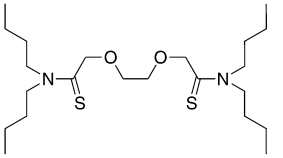
Cd^{2+}-1 (M_r = 408.68)



Cd^{2+} -2 (M_r = 851.27): R^1=R^3=H, R^2=R^4=$CH_2C(S)N(CH_3)_2$
Cd^{2+} -3 (M_r = 851.27): R^1=R^2=H, R^3=R^4=$CH_2C(S)N(CH_3)_2$
Cd^{2+} -4 (M_r = 1229.82): R^1= R^2=R^3=R^4=$CH_2CH_2OCH_2C(S)N(CH_3)_2$
Cd^{2+} -5 (M_r = 1023.54): R^1=R^3=n-propyl, R^2=R^4=
$CH_2CH_2OCH_2C(S)N(CH_3)_2$



Cd^{2+}-7 (M_r = 268.31)



Cd^{2+}-6 (M_r = 432.73)

Table 16: Hg^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Hg^{2+}-1	**Hg^{2+}-1** (w = 1–4 %), DDP (w = 66–69 %), PVC (w = 30 %)	Ca^{2+}, –1.8; Co^{2+}, –1.0; Ni^{2+}, –0.7; Zn^{2+}, –1.1; Cd^{2+}, –1.4; Pb^{2+}, –1.3; Hg^{2+}, +1.0	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned overnight in 10^{-3} M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, –1.6; Co^{2+}, –0.5; Ni^{2+}, –0.5; Zn^{2+}, –1.1; Cd^{2+}, –0.8; Pb^{2+}, 0.0; Hg^{2+}, +1.0	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 3 d in 10^{-3} M $Cu(NO_3)_2$; pH = 4; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	
		Ca^{2+}, –1.1; Co^{2+}, –0.7; Ni^{2+}, –0.3; Zn^{2+}, –1.1; Cd^{2+}, –0.7; Pb^{2+}, 0.0; Hg^{2+}, +3.6	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 2 weeks in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
	Hg^{2+}-1 (w = 1–4 %), DDP (w = 66–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Ca^{2+}, –0.2; Co^{2+}, –0.7; Ni^{2+}, –0.3; Zn^{2+}, –0.8; Cd^{2+}, +0.3; Pb^{2+}, +0.6; Hg^{2+}, +7.8	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned overnight in 10^{-3} M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, –0.3; Co^{2+}, –0.7; Ni^{2+}, –0.3; Cd^{2+}, –0.8; Pb^{2+}, +0.2; Hg^{2+}, +6.0	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 3 d in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	

Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ca^{2+}, –0.8; Co^{2+}, –0.3; Ni^{2+}, –0.1; Zn^{2+}, –0.5; Cd^{2+}, –0.3; Pb^{2+}, +0.1; Hg^{2+}, +4.0	FIM	–	0.01	–	–	*K* was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 2 weeks in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
	Hg^{2+}-1 (*w* = 1 %), oNPOE (*w* = 69 %), PVC (*w* = 30 %)	Na^+, –1.2; Ca^{2+}, –1.4; Co^{2+}, –1.0; Ni^{2+}, –1.2 Cu^{2+}, –0.9; Zn^{2+}, –2.4; Cd^{2+}, –2.0; Pb^{2+}, –1.8; Ag^+, +1.9	SSM	0.01	0.01	–	–	conditioned overnight in H_2O; internal electrolyte, 10^{-2} M $CuCl_2$ pH = 3	[2]
		Na^+, –4.3; Ca^{2+}, –2.9; Ni^{2+}, –2.6; Cu^{2+}, –2.4; Zn^{2+}, –2.7; Cd^{2+}, –2.9; Pb^{2+}, –2.7; Ag^+, +2.2	SSM	0.01	0.01	–	–	conditioned in 10^{-3} M $HgCl_2$ for 2 d, pH = 2; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 2	
		Na^+, –4.5; Ca^{2+}, –3.3; Ni^{2+}, –2.9; Cu^{2+}, –2.6; Zn^{2+}, –3.1; Cd^{2+}, –3.1; Pb^{2+}, –2.9; Ag^+, +2.3	SSM	0.01	0.01	–	–	conditioned in 10^{-3} M $HgCl_2$ for 6 d, pH = 2; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 2	
		Na^+, –4.0; Ca^{2+}, –3.1; Ni^{2+}, –2.9; Cu^{2+}, –2.7; Zn^{2+}, –2.6; Cd^{2+}, –2.6; Pb^{2+}, –2.9; Ag^+, +2.3	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $HgCl_2$ for 40 d, pH = 2; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 2	
		Na^+, –3.7; Ca^{2+}, –2.7; Ni^{2+}, –2.9; Cu^{2+}, –2.7; Zn^{2+}, –2.9; Cd^{2+}, –2.9; Pb^{2+}, –2.7; Ag^+, +1.8	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $HgCl_2$, pH = 3; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
		Na^+, –0.1; Ca^{2+}, –1.6; Ni^{2+}, –1.8; Cu^{2+}, –2.7; Zn^{2+}, –1.8; Cd^{2+}, –2.2; Pb^{2+}, –1.9; Ag^+, +3.0	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M KCl, pH = 3; internal electrolyte, 10^{-2} M KCl, pH = 3	

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Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Na^+, –1.3; Ca^{2+}, –1.7; Ni^{2+}, –2.4; Zn^{2+}, –2.4; Cd^{2+}, –2.0; Pb^{2+}, –1.7; Ag^+, +2.4	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
	Hg^{2+}-1 (*w* = 1 %), oNPOE (*w* = 66–69 %), KTpClPB (x_i = 70 %), PVC (*w* = 30 %)	Na^+, –4.4; Co^{2+}, –4.8; Ni^{2+}, –5.6; Zn^{2+}, –5.8; Pb^{2+}, –3.6; Ag^+, +1.6	SSM	0.01	0.01	41	10^{-5}–10^{-3}	conditioned overnight in H_2O; t_{resp} < 45 s; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[2]
		Na^+, –5.0; Ca^{2+}, –4.2; Ni^{2+}, –3.7; Cu^{2+}, –3.5; Zn^{2+}, –3.8; Cd^{2+}, –3.6; Pb^{2+}, –3.7; Ag^+, +2.4	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $HgCl_2$, for 2 d, pH = 2; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 2	
		Na^+, –5.2; Ca^{2+}, –4.5; Ni^{2+}, –4.2; Cu^{2+}, –3.5; Zn^{2+}, –4.0; Cd^{2+}, –3.9; Pb^{2+}, –3.9; Ag^+, +2.3	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $HgCl_2$, for 6 d, pH = 2; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 2	
		Na^+, –4.6; Ca^{2+}, –4.0; Ni^{2+}, –3.5; Cu^{2+}, –3.0; Zn^{2+}, –3.2; Cd^{2+}, –3.0; Pb^{2+}, –3.6; Ag^+, +2.2	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $HgCl_2$, for 40 d, pH = 2; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 2	
		Na^+, –5.4; Ca^{2+}, –2.7; Ni^{2+}, –3.9; Zn^{2+}, –3.9; Cd^{2+}, –3.9; Pb^{2+}, –3.7; Ag^+, +2.6	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $HgCl_2$, pH = 3; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
		Na^+, +1.3; Ca^{2+}, –0.8; Ni^{2+}, –0.9; Cu^{2+}, –0.6; Zn^{2+}, –0.9; Cd^{2+}, –1.3; Pb^{2+}, –1.0; Ag^+, +2.8	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M KCl, pH = 3; internal electrolyte, 10^{-2} M KCl, pH = 2	
		Na^+, –2.0; Ca^{2+}, –3.7; Ni^{2+}, –3.4; Zn^{2+}, –3.4 Cd^{2+}, –4.0; Pb^{2+}, –3.7; Ag^+, +1.3	SSM	0.01	0.01	–	–	conditioned in 10^{-3}M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 2	

Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Hg^{2+}-2	**Hg^{2+}-2** (w = 1–4 %), DDP (w = 66–69 %), PVC (w = 30 %)	Ca^{2+}, –1.1; Co^{2+}, –0.5; Ni^{2+}, –0.5; Zn^{2+}, –0.7; Cd^{2+}, +0.3; Pb^{2+}, –0.3; Hg^{2+}, +0.3	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned overnight in 10^{-3} M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 2	[1]
		Ca^{2+}, –1.6; Co^{2+}, –0.8; Ni^{2+}, –0.4; Zn^{2+}, –0.9; Cd^{2+}, –1.2; Pb^{2+}, –0.7; Hg^{2+}, +1.3	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 3 d in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	
		Ca^{2+}, –1.3; Co^{2+}, –0.7; Ni^{2+}, –0.2; Zn^{2+}, –1.2; Cd^{2+}, –0.5; Pb^{2+}, +0.3; Hg^{2+}, +4.4	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 2 weeks in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
	Hg^{2+}-2 (w = 1–4 %), DDP (w = 66–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Ca^{2+}, +0.5; Co^{2+}, +0.2; Ni^{2+}, +0.1; Zn^{2+}, +0.1; Cd^{2+}, +0.3; Pb^{2+}, +0.2; Hg^{2+}, +5.8	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned overnight in 10^{-3} M $CuCl_2$, pH = 3; internal electrolyte: 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, –0.4; Co^{2+}, –0.2; Ni^{2+}, –0.1; Zn^{2+}, –0.5; Cd^{2+}, +0.1; Pb^{2+}, +0.0; Hg^{2+}, +5.6	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 3 d in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	

continues on next page

Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ca^{2+}, –1.0; Co^{2+}, –0.6; Ni^{2+}, –0.4; Zn^{2+}, –1.3; Cd^{2+}, –0.8; Pb^{2+}, –0.4; Hg^{2+}, +3.8	FIM	–	0.01	–	–	*K* was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 2 weeks in 10^{-3} M $Cu(NO_3)_2$, pH 4; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	
	Hg^{2+}-2 (*w* = 1 %), oNPOE (*w* = 69 %), PVC (*w* = 30 %)	Na^+, –1.5; Ca^{2+}, –2.2; Ni^{2+}, –1.7; Zn^{2+}, –1.8 ; Cd^{2+}, –2.4; Pb^{2+}, –2.2; Ag^+, +1.3	SSM	0.01	0.01	–	–	conditioned overnight in H_2O; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[2]
	Hg^{2+}-2 (*w* = 1 %), oNPOE (*w* = 69 %), PVC (*w* = 30 %), KTpClPB (x_i = 70 %)	Na^+, –2.7; Ca^{2+}, –4.1; Ni^{2+}, –4.2; Co^{2+}, –4.0; Zn^{2+}, –4.5; Cd^{2+}, –4.8; Pb^{2+}, –4.2; Ag^+, +1.6	SSM	0.01	0.01	38	10^{-5}–10^{-3}	conditioned overnight in H_2O; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[2]
Hg^{2+}-3	**Hg^{2+}-3** (*w* = 1–4 %), DDP (*w* = 66–69 %), PVC (*w* = 30 %)	Ca^{2+}, –2.0; Co^{2+}, +0.3; Ni^{2+}, –1.1; Zn^{2+}, –1.0; Cd^{2+}, +1.3; Pb^{2+}, +0.3; Hg^{2+}, +1.2	FIM	–	0.01	–	–	*K* was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned overnight in 10^{-3} M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, –1.0; Co^{2+}, –0.3; Ni^{2+}, –0.2; Zn^{2+}, –0.4; Cd^{2+}, +0.1; Pb^{2+}, +0.4; Hg^{2+}, +0.6	FIM	–	0.01	–	–	*K* was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 3 d in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, –1.7; Co^{2+}, –0.7; Ni^{2+}, –0.4; Cd^{2+}, –0.5; Pb^{2+}, –0.3; Hg^{2+}, +2.0	FIM	–	0.01	–	–	*K* was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 2 weeks in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	[1]

Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Hg^{2+}-3 (w = 1–4 %), DDP (w = 66–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Ca^{2+}, –0.7; Co^{2+}, –0.3; Ni^{2+}, –0.1; Zn^{2+}, –0.1; Cd^{2+}, +0.6; Pb^{2+}, +0.5; Hg^{2+}, +3.3	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned overnight in 10^{-3} M $CuCl_2$, pH = 3; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, –1.0; Co^{2+}, –0.4; Ni^{2+}, –0.4; Zn^{2+}, –1.1; Cd^{2+}, –0.8; Pb^{2+}, –1.7; Hg^{2+}, +3.0	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 3 d in 10^{-3} M $Cu(NO_3)_2$, pH = 4; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[1]
		Ca^{2+}, +0.4; Co^{2+}, +1.3; Ni^{2+}, +0.2; Zn^{2+}, +1.1; Cd^{2+}, +1.4; Pb^{2+}, +1.5; Hg^{2+}, +4.4	FIM	–	0.01	–	–	K was obtained as $\lg K_{Cu^{2+},B^{n+}}$.; conditioned for 2 weeks in 10^{-3} M $CuNO_3$, pH = 4; internal electrolyte, 10^{-2} M $HgCl_2$, pH = 3	[1]
	Hg^{2+}-3 (w = 1 %), oNPOE (w = 69 %), PVC (w = 30 %)	Na^+, –1.0; Ca^{2+}, –1.8; Ni^{2+}, –1.1; Cu^{2+}, –1.3; Zn^{2+}, –0.9; Cd^{2+}, –2.1; Pb^{2+}, –1.8; Ag^+, +1.6	SSM	0.01	0.01	–	–	conditioned overnight in H_2O; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[2]
	Hg^{2+}-3 (w = 1 %), oNPOE (w = 69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Na^+, +0.4; Ca^{2+}, –1.7; Ni^{2+}, –1.1; Cu^{2+}, –1.4; Zn^{2+}, –1.9; Cd^{2+}, –2.1; Pb^{2+}, –1.7; Ag^+, +1.7	SSM	0.01	0.01	–	–	conditioned overnight in H_2O; internal electrolyte, 10^{-2} M $CuCl_2$, pH = 3	[2]
Hg^{2+}-4	**Hg^{2+}-4** (w = 1 %), DOP (w = 20–50 %), PVC (w = 80–49 %)	Co^{2+}, –2.06; Ni^{2+}, –2.60; Cu^{2+}, –1.15; Cd^{2+}, –2.35; Pb^{2+}, –0.77; Bi^{3+}, +0.11; Fe^{3+}, +0.70; Ce^{3+}, –1.66	MSM	0.01	0.01	27	10^{-5}–10^{-2}	coated graphite elec.; pH = 3.4	[3]
Hg^{2+}-5	**Hg^{2+}-5** (w = 2 %), oNPOE (w = 66 %),	Li^+, –3.0; Na^+, –2.9; K^+, –2.8; NH_4^+, –2.8;	SSM	10^{-3}	10^{-3}	–	–	pH = 4.5	[4]

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Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	PVC (w = 32 %), KTpClPB (x_i = 5 %)	Mg^{2+}, –6.0; Ca^{2+}, –5.9; Mn^{2+}, –6.0; Co^{2+}, –6.0; Ni^{2+}, –6.2; Cu^{2+}, –6.1; Zn^{2+}, –6.2; Cd^{2+}, –6.1; Pb^{2+}, –5.7; Cr^{3+}, –7.0; Fe^{3+}, –7.1; Ag^{+}, –0.7							
Hg^{2+}-6	**Hg^{2+}-6** (w = 2 %), oNPOE (w = 66 %), PVC (w = 32 %), KTpClPB (x_i = 5 %)	Li^{+}, –5.8; Na^{+}, –5.8; K^{+}, –5.6; NH_4^{+}, –5.6; Mg^{2+}, –8.7; Ca^{2+}, –8.5; Mn^{2+}, –9.1; Co^{2+}, –8.8; Ni^{2+}, –8.7; Cu^{2+}, –8.2; Zn^{2+}, –9.2; Cd^{2+}, –8.9; Pb^{2+}, –7.9; Cr^{3+}, –10.1; Fe^{3+}, –10.3; Ag^{+}, –2.2	SSM	10^{-3}	10^{-3}	–	–	pH = 4.5	[4]
Hg^{2+}-7	**Hg^{2+}-7** (w = 2 %), oNPOE (w = 66 %), PVC (w = 32 %), KTpClPB (x_i = 5 %)	Li^{+}, –3.7; Na^{+}, –4.1; K^{+}, –3.3; NH_4^{+}, –3.7; Mg^{2+}, –6.8; Ca^{2+}, –6.6; Mn^{2+}, –7.6; Co^{2+}, –7.2; Ni^{2+}, –8.0; Cu^{2+}, –8.2; Zn^{2+}, –7.9; Cd^{2+}, –7.9; Pb^{2+}, –2.3; Cr^{3+}, –8.0; Fe^{3+}, –8.3; Ag^{+}, +0.6	SSM	10^{-3}	10^{-3}	–	–	pH = 4.5	[4]
Hg^{2+}-8	**Hg^{2+}-8** (w = 2 %), oNPOE (w = 66 %), PVC (w = 32 %), KTpClPB (x_i = 5 %)	Li^{+}, –9.0; Na^{+}, –9.1; K^{+}, –8.1; NH_4^{+}, –8.6; Mg^{2+}, –12.2 ; Ca^{2+}, –12.0; Mn^{2+}, –12.0; Co^{2+}, –11.8; Ni^{2+}, –12.0; Cu^{2+}, –12.1; Zn^{2+}, –12.1; Cd^{2+}, –11.8; Pb^{2+}, –6.5; Cr^{3+}, –13.1; Fe^{3+}, –12.8; Ag^{+}, –4.7	SSM	10^{-3}	10^{-3}	ca. 70	10^{-5}–10^{-2}	pH = 4.5; $t_{95} \approx 10$ s	[4]
		Li^{+}, –6.0; Na^{+}, –6.1; K^{+}, –5.5; NH_4^{+}, –5.8; Mg^{2+}, –7.6; Ca^{2+}, –7.5; Mn^{2+}, –7.5; Co^{2+}, –7.4; Ni^{2+}, –7.5; Cu^{2+}, –7.6; Zn^{2+}, –7.6; Cd^{2+}, –7.4; Pb^{2+}, –4.8; Cr^{3+}, –8.1; Fe^{3+}, –7.9; Ag^{+}, –3.9	SSM	10^{-3}	10^{-3}			K values were recalculated using the observed slope value.	

Table 16: Hg^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Hg^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Hg^{2+}-9	**Hg^{2+}-9** (w = 2 %), oNPOE (w = 66 %), PVC (w = 32 %), KTpClPB (x_i = 5 %)	Li^+, –4.9; Na^+, –5.0; K^+, –3.3; NH_4^+, –4.0; Mg^{2+}, –8.0; Ca^{2+}, –8.6; Mn^{2+}, –8.3; Co^{2+}, –7.7; Ni^{2+}, –8.5; Cu^{2+}, –8.7; Zn^{2+}, –8.3; Cd^{2+}, –8.2; Pb^{2+}, –5.0; Cr^{3+}, –9.5; Fe^{3+}, –9.1; Ag^+, –1.6	SSM	10^{-3}	10^{-3}	–	–	pH, 4.5	[4]

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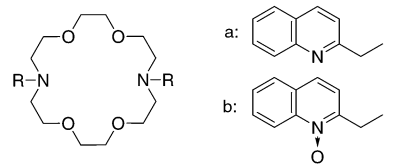
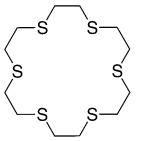
(4) D.S. Siswanta, M. Kin, H. Hisamoto, K. Suzuki, *Chem. Lett.*, 1011–1012 (1996).



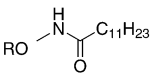
Hg^{2+}-1 (M_r = 572.75): R=a

Hg^{2+}-2 (M_r = 604.75): R=b

Hg^{2+}-3 (M_r = 599.00): R=c

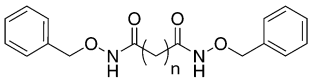


Hg^{2+}-4 (M_r = 360.69)



Hg^{2+}-5 (M_r = 229.37): R=-CH_3

Hg^{2+}-6 (M_r = 305.46): R=-$CH_2C_6H_5$



Hg^{2+}-7 (M_r = 356.43): n=4
Hg^{2+}-8 (M_r = 412.53): n=8
Hg^{2+}-9 (M_r = 482.67): n=13

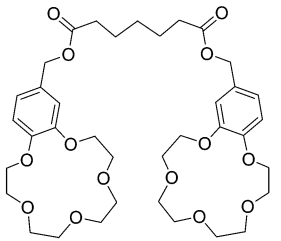
Table 17: Tl^+-Selective Electrodes

ionophore	membrane composition	$\lg K_{Tl^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Tl^+-1	**Tl^+-1** (w = 2.8 %), NaTFPB (x_i = 16 %), oNPOE (w = 69.0%), PVC (w = 27.6 %)	Na^+, –4.0; K^+, –0.5; Rb^+, –0.95; Cs^+, –1.95; NH_4^+, –2.05; Mg^{2+}, –5.3; Ca^{2+}, –5.0; Sr^{2+}, –5.2; Ba^{2+}, –4.6; Pb^{2+}, –4.7; Cd^{2+}, –5.4; Ag^+, –3.2; As^{3+}, –4.0	MSM	–	–	–	–	r.o.o.g.	[1]
Tl^+-2	**Tl^+-2** (w = 2.8 %), NaTFPB (x_i = 8 %), oNPOE (w = 69.0%), PVC (w = 27.6 %)	Li^+, –4.6; Na^+, –2.0; K^+, –0.15; Rb^+, –0.4; Cs^+, –0.45; NH_4^+, –1.9; H^+, –3.5; Mg^{2+}, –4.4; Ca^{2+}, –4.5; Sr^{2+}, –4.1; Ba^{2+}, –3.4; Co^{2+}, –4.3; Ni^{2+}, –4.4; Cu^{2+}, –4.15; Zn^{2+}, –4.7; Cd^{2+}, –4.15; Hg^{2+}, –3.4; Cr^{3+}, –4.23; Fe^{3+}, –3.7; Ag^+, –1.2	MSM	–	–	59	3.2×10^{-5}– 1.0×10^{-2}	3 < pH < 11; τ > 30 d; t_{resp} < 10 s; r.o.o.g.	[1]
Tl^+-3	**Tl^+-3** (w = 2.8 %), NaTFPB (x_i = 8 %), oNPOE (w = 69.0%), PVC (w = 27.6 %)	Li^+, –3.3; Na^+, –2.5; K^+, –1.26; Rb^+, –1.1; Cs^+, –1.35; NH_4^+, –2.1; H^+, –3.8; Mg^{2+}, –4.8; Ca^{2+}, –4.7; Sr^{2+}, –4.3; Ba^{2+}, –3.7; Co^{2+}, –4.5; Ni^{2+}, –4.3; Cu^{2+}, –4.2; Zn^{2+}, –4.9; Cd^{2+}, –4.4; Hg^{2+}, –4.1; Cr^{3+}, –4.7; Fe^{3+}, –4.6; Ag^+, –1.4	MSM	–	–	59	3.2×10^{-5}– 1.0×10^{-2}	3 < pH < 11; τ > 30 d; t_{resp} < 10 s; r.o.o.g.	[1]
Tl^+-4	**Tl^+-4** (w = 2.8 %), NaTFPB (x_i = 9 %), oNPOE (w = 69.0%), PVC (w = 27.6 %)	Li^+, –4.6; Na^+,–3.0; K^+, –1.73; Rb^+, –1.6; Cs^+, –1.5; NH_4^+, –2.2; H^+, –3.9; Mg^{2+}, –5.1; Ca^{2+}, –5.0; Sr^{2+}, –4.5; Ba^{2+}, –4.0; Co^{2+}, –4.8; Ni^{2+}, –4.5; Cu^{2+}, –4.9; Zn^{2+}, –5.0; Cd^{2+}, –4.8; Hg^{2+}, –3.5; Cr^{3+}, –4.9; Fe^{3+}, –3.9; Ag^+, –1.4	MSM	–	–	59	3.2×10^{-5}– 1.0×10^{-2}	3 < pH < 11; τ > 30 d; t_{resp} < 10 s; r.o.o.g.	[1]

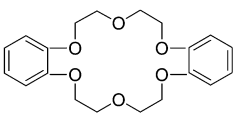
Table 17: Tl^+-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Tl^+,B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Tl^+-5	**Tl^+-5**, DOP, PVC (weight ratio not given)	Na^+, –2.3; Mg^{2+}, –3.4; Ca^{2+}, –2.9; Co^{2+}, –3.2; Ni^{2+}, –3.9; Cu^{2+}, –2.8; Zn^{2+}, –3.6; Fe^{3+}, –2.9	FIM	–	–	–	–	pH = 5.0; r.o.o.g.	[2]
	Tl^+-5 (w = 5.1 %), DOP (w = 61.5 %), PVC (w = 30.8 %), KTpClPB (x_i = 28 %)	Mg^{2+}, –3.4; Ca^{2+}, –3.3; Co^{2+}, –3.1; Ni^{2+}, –3.6; Cu^{2+}, –3.3; Zn^{2+}, –3.8; Fe^{3+}, –3.2	MSM	–	–	55	10^{-5}–10^{-1}	r.o.o.g.	[2]
	Tl^+-5 (w = 5.1 %), DOS (w = 61.5 %), PVC (w = 30.8 %), KTpClPB (x_i = 28 %)	Mg^{2+}, –3.2; Ca^{2+}, –3.1; Co^{2+}, –3.5; Zn^{2+}, –3.3	FIM	–	–	–	–	r.o.o.g.	[2]
	Tl^+-5 (w = 3.0 %), DOP (w = 51 %), PVC (w = 46 %)	Co^{2+}, –2.0; Ni^{2+}, –1.6; Cu^{2+}, –0.8; Fe^{2+}, –1.3	FIM	–	–	46	10^{-5}–10^{-1}	CWE; r.o.o.g.	[2]

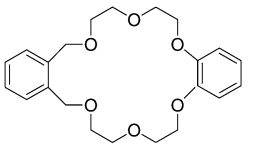
(1) Y. Yamashoji, M. Tanaka, S. Nagamune, M. Ouchi, T. Hakushi, T. Shono, *Anal. Sci.*, **7**, 485–486 (1991).
(2) Y. Masuda, K. Yakabe, Y. Shibutani, T. Shono, *Anal. Sci.*, **10**, 491–495 (1994).



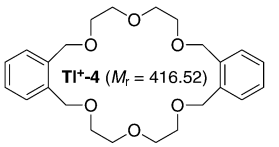
Tl^+-1 (M_r = 560.82)



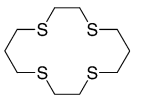
Tl^+-2 (M_r = 360.42)



Tl^+-3 (M_r = 388.46)



Tl^+-4 (M_r = 416.52)



Tl^+-5 (M_r = 268.51)

Table 18: Pb^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Pb^{2+}-1	**Pb^{2+}-1** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Ca^{2+}, –2.40; Sr^{2+}, –2.49; Co^{2+}, –2.60; Ni^{2+}, –2.40; Cu^{2+}, –1.80; Zn^{2+}, –2.10; Cd^{2+}, –2.49	SSM	0.001	0.001	31	4×10^{-6} – 3×10^{-3}	25.0 ± 0.1 °C	[1]
	Pb^{2+}-1 (w = 1 %), DOP (w = 66 %), PVC (w = 33 %)	Ca^{2+}, –2.10; Sr^{2+}, –2.41; Co^{2+}, –2.80; Ni^{2+}, –2.39; Cu^{2+}, –1.08; Zn^{2+}, –2.06; Cd^{2+}, –2.19	SSM	0.001	0.001	33	4×10^{-6} – 3×10^{-3}	25.0 ± 0.1 °C	[1]
	Pb^{2+}-1 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^{+}, –2.3; Na^{+}, –1.8; K^{+}, –0.5; NH_4^{+}, –1.4; Ca^{2+}, –1.9; Sr^{2+}, –2.0; Mn^{2+}, –2.1; Co^{2+}, –1.9; Ni^{2+}, –1.98; Cu^{2+}, –1.98; Zn^{2+}, –2.0; Cd^{2+}, –2.2; Ag^{+}, –1.35; Tl^{+}, –0.6	SSM	0.001	0.001	45 ± 2	–	22 ± 2 °C; pH = 6; r.o.o.g.; Charge numbers of the ions were omitted to calculate K.	[2]
	Pb^{2+}-1 (w = 1 %), DOP (w = 66 %), PVC (w = 33 %)	Li^{+}, –2.44; Na^{+}, –1.6; K^{+}, –0.55; NH_4^{+}, –2.2; Ca^{2+}, –2.46; Sr^{2+}, –2.44; Mn^{2+}, –2.55; Co^{2+}, –2.4; Ni^{2+}, –2.44; Cu^{2+}, –2.5; Zn^{2+}, –2.42; Cd^{2+}, –2.7; Ag^{+}, –1.98; Tl^{+}, –0.85	SSM	0.001	0.001	45 ± 2	–	22 ± 2 °C; pH = 6; r.o.o.g.; Charge numbers of the ions were omitted to calculate K.	[2]
Pb^{2+}-2	**Pb^{2+}-2** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Ca^{2+}, –2.40; Sr^{2+}, –2.40; Co^{2+}, –2.52; Ni^{2+}, –2.62; Cu^{2+}, –1.89; Zn^{2+}, –2.11; Cd^{2+}, –2.19	SSM	0.001	0.001	nN	4×10^{-6} – 3×10^{-3}	25.0 ± 0.1 °C	[1]
	Pb^{2+}-2 (w = 1 %), DOP (w = 66 %), PVC (w = 33 %)	Ca^{2+}, –2.10; Sr^{2+}, –2.41; Co^{2+}, –2.49; Ni^{2+}, –2.30; Cu^{2+}, –1.60; Zn^{2+}, –1.89; Cd^{2+}, –2.23	SSM	0.001	0.001	nN	4×10^{-6} – 3×10^{-3}	25 ± 2 °C	[1]
	Pb^{2+}-2 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^{+}, –2.75; Na^{+}, –2.25; K^{+}, –2.0; NH_4^{+}, –2.05; Ca^{2+}, –2.40; Sr^{2+}, –2.36; Mn^{2+}, –2.50; Co^{2+}, –2.0; Ni^{2+}, –1.95; Cu^{2+}, –1.7; Zn^{2+}, –2.3; Cd^{2+}, –2.4; Ag^{+}, –1.47; Tl^{+}, –1.4	SSM	0.001	0.001	45 ± 2	–	22 ± 2 °C; pH = 6; r.o.o.g.; Charge numbers of the ions were omitted to calculate K.	[2]

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Pb^{2+}-2 (w = 1 %), DOP (w = 66 %), PVC (w = 33 %)	Li^+, –2.8; Na^+, –2.35; K^+, –1.95; NH_4^+, –2.28; Ca^{2+}, –2.7; Sr^{2+}, –2.6; Mn^{2+}, –2.65; Co^{2+}, –2.3; Ni^{2+}, –2.3; Cu^{2+}, –2.0; Zn^{2+}, –2.45; Cd^{2+}, –2.4; Ag^+, –1.58; Tl^+, –1.55	SSM	0.001	0.001	45 ± 2	–	22 ± 2 °C; pH = 6; r.o.o.g.; Charge numbers of the ions were omitted to calculate K.	[2]
Pb^{2+}-3	**Pb^{2+}-3**, (several μL), reactive monomer solution (1.55 mL, mixture of 2,4-diisocyanate-tri-ethylene glycol-2,4-diisocyanate, 2-hydroxyethyl methacrylate and 2,2-diethoxyacetophenone)	Na^+, –5.0 K^+, –4.1; Mg^{2+}, –5.3; Ca^{2+}, –5.2; Fe^{3+}, –5.5	FIM SSM	– 10^{-3} 10^{-4}	0.01 10^{-3} 10^{-4}	63	10^{-6}–10^{-3}	ISFET; 25 °C; 10^{-2} M sodium acetate, pH = 5.5; t_{resp} < 2 min; τ > 60 d	[3]
	Pb^{2+}-3 (w = 5 %), BHES (w = 62 %), PVC–PVA–PVAc (w = 33 %) PVA, poly(vinyl alcohol); PVAc, poly(vinyl acetate)	K^+, –3.21; Al^{3+}, –2.12; Fe^{2+}, –4.26; Cu^{2+}, –3.01; Cd^{2+}, –2.82; Hg^{2+}, –1.81	FIM	– – 	0.1 0.005 10^{-5} 0.05 0.01	31.9	10^{-6} -8.4×10^{-3}	25 °C; ionic strength of 10^{-3} M $NaClO_4$; t_{resp} = 10 s; τ = 210 d	[4]
	Pb^{2+}-3 (w = 5 %), BHES (w = 62 %), PVC–PVA–PVAc (w = 33 %) PVA, poly(vinyl alcohol); PVAc, poly(vinyl acetate)	K^+, –2.12; Al^{3+}, –3.16; Fe^{2+}, –1.67; Cu^{2+}, –2.63; Cd^{2+}, –2.16; Hg^{2+}, –1.60	FIM	–	0.1 0.01 0.001 0.005	36.1	10^{-6} -3.1×10^{-3}	25 °C; coated carbon elec.; ionic strength of 10^{-3} M $NaClO_4$; t_{resp} = 20 s; τ = 150 d	[4]
Pb^{2+}-4	**Pb^{2+}-4** (w = 1 %), oNPOE (w = 69 %), PVC (w = 30 %)	Li^+, +0.3; Na^+, –0.5; K^+, –2.0; NH_4^+, –2.0; H^+, –0.3; Mg^{2+}, –2.6; Ca^{2+}, –0.3; Sr^{2+}, –2.2; Ba^{2+}, –2.4; Co^{2+}, –2.6; Ni^{2+}, –2.8; Cu^{2+}, –2.4; Zn^{2+}, –0.5; Cd^{2+}, –0.2; Ag^+, +1.9	SSM	0.1	0.1	23.0	$10^{-3.0}$ $-10^{-1.5}$	20–22 °C; 4.0 < pH < 6.0; r.o.o.g.; pH = 4	[5]
	Pb^{2+}-4 (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 40 %)	Li^+, –1.4; Na^+, –3.5; K^+, –3.9; NH_4^+, –4.0; H^+, –0.7; Mg^{2+}, –3.0; Ca^{2+}, +0.0; Sr^{2+}, –2.4; Ba^{2+}, –3.0; Co^{2+}, –3.5; Ni^{2+}, –4.5; Cu^{2+}, –2.5; Zn^{2+}, –1.4; Cd^{2+}, +0.2; Ag^+, +1.0	SSM	0.1	0.1	34.1	$10^{-4.0}$ $-10^{-1.5}$	20–22 °C; 3.0 < pH < 6.0; r.o.o.g.; pH = 4	[5]

continues on next page

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Pb^{2+}-5	**Pb^{2+}-5** (w = 1 %), oNPOE (w = 69 %), PVC (w = 30 %)	Li^+, –2.2; Na^+, –0.6; K^+, –2.7; NH_4^+, –1.8; H^+, –0.7; Mg^{2+}, –2.9; Ca^{2+}, –0.9; Sr^{2+}, –1.2; Ba^{2+}, –1.5; Co^{2+}, –1.8; Ni^{2+}, –2.0; Cu^{2+}, –1.3; Zn^{2+}, –2.5; Cd^{2+}, –0.6; Ag^+, +0.5	SSM	0.1	0.1	37.2	$10^{-5.0}$ $-10^{-2.0}$	20–22 °C; 4.0 < pH < 6.0; r.o.o.g.; pH = 4	[5]
	Pb^{2+}-5 (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 40 %)	Li^+, –3.5; Na^+, –1.9; K^+, –3.8; NH_4^+, –1.9; H^+, –1.3; Mg^{2+}, –3.2; Ca^{2+}, +0.5; Sr^{2+}, –1.1; Ba^{2+}, –1.3; Co^{2+}, –3.8; Ni^{2+}, –3.2; Cu^{2+}, –1.6; Zn^{2+}, –2.6; Cd^{2+}, +0.7; Ag^+, +1.4	SSM	0.1	0.1	40.2	$10^{-5.3}$ $-10^{-1.5}$	20–22 °C; 3.0 < pH < 6.0; r.o.o.g.; pH = 4	[5]
Pb^{2+}-6	**Pb^{2+}-6** (w = 1 %), oNPOE (w = 69 %), PVC (w = 30 %)	Li^+, –0.8; Na^+, –1.5; K^+, –1.2; NH_4^+, –1.2; H^+, +1.8; Mg^{2+}, –2.7; Ca^{2+}, –2.0; Sr^{2+}, –1.7; Ba^{2+}, –1.8; Co^{2+}, –3.2; Ni^{2+}, –2.9; Cu^{2+}, –2.2; Zn^{2+}, –3.2; Cd^{2+}, –3.5; Ag^+, +1.2	SSM	0.1	0.1	27.3	$10^{-5.5}$ $-10^{-2.0}$	20–22 °C; 3.0 < pH < 5.5 r.o.o.g.; pH = 4	[5]
	Pb^{2+}-6 (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 40 %)	Li^+, –2.9; Na^+, –3.7; K^+, –3.8; NH_4^+, –3.6; H^+, –0.2; Mg^{2+}, –4.6; Ca^{2+}, –2.2; Sr^{2+}, –1.6; Ba^{2+}, –2.3; Co^{2+}, –4.0; Ni^{2+}, –4.6; Cu^{2+}, –3.8; Zn^{2+}, –4.3; Cd^{2+}, –4.0; Ag^+, +0.1	SSM	0.1	0.1	35.3	$10^{-5.2}$ $-10^{-1.0}$	20–22 °C; 2.0 < pH < 6.0 r.o.o.g.; pH = 4	[5]
Pb^{2+}-7	**Pb^{2+}-7** (w = 1 %), oNPOE (w = 69 %), PVC (w = 30 %)	Li^+, +1.3; Na^+, +0.4; K^+, –2.0; NH_4^+, –2.5; H^+, –1.7; Mg^{2+}, –2.3; Ca^{2+}, –0.3; Sr^{2+}, –1.0; Ba^{2+}, –1.3; Co^{2+}, –2.7; Ni^{2+}, –3.0; Cu^{2+}, –2.1; Zn^{2+}, –1.7; Cd^{2+}, –0.5; Ag^+, +0.8	SSM	0.1	0.1	23.5	$10^{-5.0}$ $-10^{-1.0}$	20–22 °C; 3.0 < pH < 5.0; r.o.o.g.; pH = 4	[5]

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Pb^{2+}-7 (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 40 %)	Li^+, –0.3; Na^+, +0.4; K^+, –3.7; NH_4^+, –3.7; H^+, –4.2; Mg^{2+}, –3.3; Ca^{2+}, –0.3; Sr^{2+}, –1.1; Ba^{2+}, –1.6; Co^{2+}, –3.3; Ni^{2+}, –4.5; Cu^{2+}, –3.1; Zn^{2+}, –1.6; Cd^{2+}, –0.7; Ag^+, +0.1	SSM	0.1	0.1	26.89	$10^{-5.3}$ $-10^{-1.0}$	20–22 °C; 3.0 < pH < 6.0; r.o.o.g.; pH = 4	[5]
Pb^{2+}-8	**Pb^{2+}-8** (w = 11.2 %), oNPOE (w = 49.6%), PVC (w = 37.2 %), KTpClPB (x_i = 15 %)	Mg^{2+}, –5.26; Ca^{2+}, –5.44; Mn^{2+}, –5.21; Co^{2+}, –5.20; Ni^{2+}, –4.96; Cd^{2+}, –3.57	FIM	–	0.1	28	$10^{-6.0}$ $-10^{-2.0}$	25.0 ± 0.1 °C; 3.1 < pH < 5.4; $c_{dl} = 3.5 \times 10^{-7}$ M; t_{resp} = 16 s	[5, 6]
		Na^+, –2.23			0.01				
		Zn^{2+}, –3.48; Fe^{3+}, –2.54			0.001				
		Cu^{2+}, –3.48;			10^{-5}				
	Pb^{2+}-8 (w = 12.7 %), oNPOE (w = 52.9%), PVC (w = 32.4 %), KTpClPB (x_i = 13 %)	Na^+, –1.8; K^+, –2.0; Mg^{2+}, –5.2; Ca^{2+}, –5.43 Sr^{2+}, –4.8; Mn^{2+}, –4.8; Co^{2+}, –4.6; Ni^{2+}, –4.5; Cd^{2+}, –3.4	FIM	–	0.1	29	$10^{-5.0}$ $-10^{-1.0}$	25 ± 0.1 °C; 3.5 < pH < 5.4; $c_{dl} = 7.9 \times 10^{-6}$ M; t_{resp} = 11 s; coated carbon elec.; r.o.o.g.	[7]
		Cu^{2+}, +0.8			10^{-5}				
		Zn^{2+}, –3.0			0.001				
Pb^{2+}-9	**Pb^{2+}-9** (w = 12.4 %), oNPOE (w = 49.4%), PVC (w = 37.0 %), KTpClPB (x_i = 15 %)	Mg^{2+}, –2.51; Ca^{2+}, –2.39; Mn^{2+}, –2.16; Co^{2+}, –1.85; Ni^{2+}, –1.80; Cd^{2+}, –1.54	FIM	–	0.1	28	$10^{-6.0}$ $-10^{-2.0}$	25.0 ± 0.1 °C; 3.1 < pH < 5.4; $c_{dl} = 3.5 \times 10^{-7}$ M; t_{resp} = 8 s	[6, 7]
		Na^+, –1.31			0.01				
		Zn^{2+}, –1.51; Fe^{3+}, –2.54			0.001				
		Cu^{2+}, –1.11			10^{-5}				
	Pb^{2+}-9 (w = 11.0 %), oNPOE (w = 53.0 %), PVC (w = 33.9 %), KTpClPB(x_i = 18 %)	Na^+, –1.0; Mg^{2+}, –2.9; Ca^{2+}, –2.9; Sr^{2+}, –2.6; Mn^{2+}, –2.6; Co^{2+}, –2.4; Ni^{2+}, –2.3; Cd^{2+}, –2.0	FIM	–	0.1	29	$10^{-5.0}$ $-10^{-1.0}$	25.0 ± 0.1 °C; 3.5 < pH < 5.4; $c_{dl} = 7.9 \times 10^{-6}$ M; t_{resp} = 6 s; coated carbon elec.; r.o.o.g.	[7]
		Zn^{2+}, –1.8			0.001				
		Cu^{2+}, +1.1			10^{-5}				
Pb^{2+}-10	**Pb^{2+}-10** (w = 1 %), DBP (w = 66 %), PVC (w = 33 %)	Li^+, –3.07; Na^+, –3.00; K^+, –2.16 ; Rb^+, –2.68; Cs^+, –2.38; Mg^{2+}, –2.28; Ca^{2+}, –2.92; Sr^{2+}, –2.19;		–	–	nN	$10^{-6.0}$ $-10^{-2.0}$		[8]

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Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Ba^{2+}, –2.52; Co^{2+}, –2.82; Ni^{2+}, –2.92; Cu^{2+}, –0.44; Zn^{2+}, –2.51; Cd^{2+}, –2.16; Ag^{+}, +0.54							
Pb^{2+}-11	**Pb^{2+}-11** (*w* = 1 %), DBP (*w* = 66 %), PVC (*w* = 33 %)	Li^{+}, –3.00; Na^{+}, –2.96; K^{+}, –2.82; Rb^{+}, –3.00; Cs^{+}, –4.00; Mg^{2+}, –2.64; Ca^{2+}, –3.00; Sr^{2+}, –2.92; Ba^{2+}, –3.19; Co^{2+}, –2.30; Ni^{2+}, –2.15; Cu^{2+}, –0.44; Zn^{2+}, –2.51; Cd^{2+}, –2.51; Ag^{+}, –0.33		–	–	nN	$10^{-5.0}$ $-10^{-2.0}$		[8]
Pb^{2+}-12	**Pb^{2+}-12** (*w* = 1 %), DBP (*w* = 66 %), PVC (*w* = 33 %)	Li^{+}, –4.00; Na^{+}, –3.00; K^{+}, –2.17; Rb^{+}, –2.19; Cs^{+}, –2.96; Mg^{2+}, –3.70; Ca^{2+}, –4.00; Sr^{2+}, –4.00; Ba^{2+}, –3.52; Co^{2+}, –3.62; Ni^{2+}, –4.00; Cu^{2+}, –1.52; Zn^{2+}, –3.22; Cd^{2+}, –2.40; Ag^{+}, –0.35		–	–	nN	$10^{-5.0}$ $-10^{-2.0}$		[8]
Pb^{2+}-13	**Pb^{2+}-13** (*w* = 40 %), DBP (*w* = 20 %), PVC (*w* = 40 %)	Li^{+}, –4.97; Na^{+}, –1.81; K^{+}, –0.61; Mg^{2+}, –4.51; Ca^{2+}, –4.89; Sr^{2+}, –4.56; Ba^{2+}, –4.13; Co^{2+}, –4.70; Ni^{2+}, –3.93; Cu^{2+}, –3.09; Zn^{2+}, –4.86; Cd^{2+}, –5.11; Hg^{2+}, –0.83; Ag^{+}, –1.31; La^{3+}, –4.84; Fe^{3+}, –4.25	MSM	10^{-5}	–	30 ± 1	$10^{-6.0}$ $-10^{-2.0}$	t_{resp} < 1 min	[9]
Pb^{2+}-14	**Pb^{2+}-14** (*w* = 37 %), DBP (*w* = 18.5 %), PVC (*w* = 44.5 %)	Li^{+}, –2.31; Na^{+}, –0.61; K^{+}, –0.64; Mg^{2+}, –4.36; Ca^{2+}, –4.43; Sr^{2+}, –3.29; Ba^{2+}, –3.46; Co^{2+}, –3.68; Ni^{2+}, –3.63; Cu^{2+}, –3.68; Zn^{2+}, –4.76; Cd^{2+}, –4.00; Hg^{2+}, –4.24; Ag^{+}, –0.06; La^{3+}, –0.08 Fe^{3+}, –0.51	MSM	10^{-5}	–	30 ± 1	$10^{-6.0}$ $-10^{-1.0}$	t_{resp} < 1 min	[9]

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Pb^{2+}-15	**Pb^{2+}-15** (w = 40 %), DBP (w = 20 %), PVC (w = 40 %)	Li^+, –1.56; Na^+, –1.36; K^+, –1.28; Mg^{2+}, –4.77; Ca^{2+}, –5.11; Sr^{2+}, –3.41; Ba^{2+}, –3.75; Co^{2+}, –3.78; Ni^{2+}, –4.11; Cu^{2+}, –4.44; Zn^{2+}, –5.01; Cd^{2+}, –4.53; Hg^{2+}, –1.44; Ag^+, –0.61; La^{3+}, –2.58 Fe^{3+}, –2.19	MSM	10^{-5}	–	30 ± 1	$10^{-6.0}$ $-10^{-1.0}$	t_{resp} < 1 min	[9]
Pb^{2+}-16	**Pb^{2+}-16** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –3.8; Ca^{2+}, –2.4; Co^{2+}, –3.6; Ni^{2+}, –3.6; Cu^{2+}, –1.7; Zn^{2+}, –3.8; Cd^{2+}, –2.5	SSM	0.01	0.01	36.9	$10^{-5.4}$ $-10^{-1.5}$	t_{95} < 20 s; τ = 14 d; r.o.o.g.	[10]
		H^+, –0.4; Li^+, –2.2; Na^+, –2.0; K^+, –1.0 ; Rb^+, –0.4; NH_4^+, –0.4; Pb^{2+}, –0.9; Ag^+, +0.3	SSM	0.1	0.1			K was obtained as $\lg K_{Cs^+,B^{n+}}$; r.o.o.g.	
Pb^{2+}-17	**Pb^{2+}-17** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –2.9; Ca^{2+}, –2.2; Co^{2+}, –2.6; Ni^{2+}, –2.8; Cu^{2+}, –1.2; Zn^{2+}, –2.8; Cd^{2+}, –2.6	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –2.0; Li^+, –2.8; Na^+, –2.5; K^+, –1.2; Rb^+, –0.5 NH_4^+, –1.6; Pb^{2+}, –1.9; Ag^+, +2.0	SSM	0.1	0.1			K was obtained as $\lg K_{Cs^+,B^{n+}}$; r.o.o.g.	
Pb^{2+}-18	**Pb^{2+}-18** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –2.0; Ca^{2+}, –1.2; Co^{2+}, –1.8; Ni^{2+}, –1.8; Cu^{2+}, –0.6; Zn^{2+}, –2.0; Cd^{2+}, –1.5	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –3.4; Li^+, –3.3; Na^+, –2.8; K^+, –1.4; Rb^+, –0.5; NH_4^+, –1.7; Pb^{2+}, –2.6; Ag^+, +1.0	SSM	0.1	0.1			K was obtained as $\lg K_{Cs^+,B^{n+}}$; r.o.o.g.	
Pb^{2+}-19	**Pb^{2+}-19** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –2.3; Ca^{2+}, –3.4; Co^{2+}, –3.0; Ni^{2+}, –1.9; Cu^{2+}, –0.6; Zn^{2+}, –2.1; Cd^{2+}, –1.9	SSM	0.01	0.01	–	–	r.o.o.g.	[10]

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Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		H^+, –3.5; Li^+, –1.4; Na^+, –2.1; K^+, –1.4; Rb^+, –0.6; NH_4^+, –1.9; Pb^{2+}, –2.8; Ag^+, +0.8	SSM	0.1	0.1			*K* was obtained as $\lg K_{Cs^+,B^{n+}}$.; r.o.o.g.	
Pb^{2+}-20	**Pb^{2+}-20** (*w* = 1 %), oNPOE (*w* = 67–69 %), PVC (*w* = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –4.2; Ca^{2+}, –2.4; Co^{2+}, –3.9; Ni^{2+}, –3.9; Cu^{2+}, –1.4; Zn^{2+}, –4.2; Cd^{2+}, –2.7	SSM	0.01	0.01	35.2	$10^{-5.4}$ $-10^{-1.5}$	$t_{95} < 20$ s; $\tau > 14$ d; r.o.o.g.	[10]
		H^+, –1.6; Li^+, –2.4 Na^+, –2.2; K^+, –1.0; Rb^+, –0.4; NH_4^+, –1.3; Pb^{2+}, –0.7; Ag^+, +1.0	SSM	0.1	0.1			*K* was obtained as $\lg K_{Cs^+,B^{n+}}$.; r.o.o.g.	
Pb^{2+}-21	**Pb^{2+}-21** (*w* = 1 %), oNPOE (*w* = 67–69 %), PVC (*w* = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –3.5; Ca^{2+}, –2.3; Co^{2+}, –3.7; Ni^{2+}, –3.7; Cu^{2+}, –1.4; Zn^{2+}, –3.5; Cd^{2+}, –2.7	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –2.0; Li^+, –2.7; Na^+, –2.4; K^+, –1.2; Rb^+, –0.6; NH_4^+, –1.7; Pb^{2+}, –1.4; Ag^+, +1.4	SSM	0.1	0.1			*K* was obtained as $\lg K_{Cs^+,B^{n+}}$.; r.o.o.g.	
Pb^{2+}-22	**Pb^{2+}-22** (*w* = 1 %), oNPOE (*w* = 67–69 %), PVC (*w* = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –3.5; Ca^{2+}, –1.6; Co^{2+}, –2.3; Ni^{2+}, –2.3; Cu^{2+}, –0.3; Zn^{2+}, –3.5; Cd^{2+}, –2.0	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –2.5; Li^+, –3.4; Na^+, –3.0; K^+, –1.4; Rb^+, –0.6; NH_4^+, –1.9; Pb^{2+}, –2.7; Ag^+, +1.0	SSM	0.1	0.1			*K* was obtained as $\lg K_{Cs^+,B^{n+}}$.; r.o.o.g.	
Pb^{2+}-23	**Pb^{2+}-23** (*w* = 1 %), oNPOE (*w* = 67–69 %), PVC (*w* = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –3.4; Ca^{2+}, –2.0; Co^{2+}, –3.3; Ni^{2+}, –3.3; Cu^{2+}, –1.5; Zn^{2+}, –3.4; Cd^{2+}, –2.3	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –2.2; Li^+, –2.8; Na^+, –2.6; K^+, –1.3; Rb^+, –0.6; NH_4^+, –1.7; Pb^{2+}, –1.5; Ag^+, +1.3	SSM	0.1	0.1			*K* was obtained as $\lg K_{Cs^+,B^{n+}}$.; r.o.o.g.	

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Pb^{2+}-24	**Pb^{2+}-24** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –2.2; Ca^{2+}, –1.3; Co^{2+}, –2.0; Ni^{2+}, –2.2; Cu^{2+}, –0.7; Zn^{2+}, –2.0; Cd^{2+}, –1.8	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –1.5; Li^+, –2.7; Na^+, –2.6; K^+, –1.0; Rb^+, –0.5; NH_4^+, –1.5; Pb^{2+}, –2.4; Ag^+, +1.6	SSM	0.1	0.1			K was obtained as $\lg K_{Cs^+,B^{n+}}$; r.o.o.g.	
Pb^{2+}-25	**Pb^{2+}-25** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –1.8; Ca^{2+}, –1.0; Co^{2+}, –1.4; Ni^{2+}, –1.6; Cu^{2+}, –0.6; Zn^{2+}, –1.6; Cd^{2+}, –1.4	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –1.7; Li^+, –3.3; Na^+, –2.8; K^+, –1.2; Rb^+, –0.5; NH_4^+, –1.6; Pb^{2+}, –3.0; Ag^+, +1.0	SSM	0.1	0.1			K was obtained as $\lg K_{Cs^+,B^{n+}}$; r.o.o.g.	
Pb^{2+}-26	**Pb^{2+}-26** (w = 1 %), oNPOE (w = 67–69 %), PVC (w = 30 %), KTpClPB (x_i = 70 %)	Mg^{2+}, –1.4; Ca^{2+}, –1.0; Co^{2+}, –1.2; Ni^{2+}, –1.4; Cu^{2+}, –0.2; Zn^{2+}, –1.4; Cd^{2+}, –1.2	SSM	0.01	0.01	–	–	r.o.o.g.	[10]
		H^+, –2.2; Li^+, –3.6; Na^+, –3.0; K^+, –1.3; Rb^+, –0.5; NH_4^+, –2.2; Pb^{2+}, –3.4; Ag^+, +0.7	SSM	0.1	0.1			K was obtained as $\lg K_{Cs^+,B^{n+}}$; r.o.o.g.	
Pb^{2+}-27	**Pb^{2+}-27** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 75 %)	Li^+, –3.6; Na^+, –3.6; K^+, –4.2; NH_4^+, –4.0; Mg^{2+}, –5.0; Ca^{2+}, –4.8; Ba^{2+}, –4.8; Co^{2+}, –5.0; Ni^{2+}, –5.0; Cu^{2+}, –3.3; Zn^{2+}, –4.8; Cd^{2+}, –3.8; Hg^{2+}, +0.6, Ag^+, +1.5	SSM	0.01	0.01	28.7	$< 10^{-1.8}$	$t_{95} < 10$ s; $c_{dl} = 10^{-6.5}$ M; $3 < pH < 6$; r.o.o.g.	[11]
	Pb^{2+}-27 (w = 1 %), BBPA (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 75 %)	Li^+, –2.3; Na^+, +0.7; K^+, –1.9; NH_4^+, –2.8; Mg^{2+}, –3.6; Ca^{2+}, –2.6; Ba^{2+}, –4.0; Co^{2+}, –3.8; Ni^{2+}, –4.0; Cu^{2+}, –4.0; Zn^{2+}, –3.8; Cd^{2+}, –3.0; Hg^{2+}, strong interference	SSM	0.01	0.01	–	–	r.o.o.g.	[11]

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Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	Pb^{2+}-27 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Na^+, +0.5; K^+, –0.2 ; Ca^{2+}, –0.8; Cu^{2+}, –0.9; Cd^{2+}, –0.7	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M LiCl; pH = 4.5	[12]
		Na^+, +0.4; K^+, –0.3; Ca^{2+}, –1.1; Cu^{2+}, –0.3; Cd^{2+}, –0.3	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M KCl; pH = 4.5	
		Na^+, +0.3; K^+, +0.3; Ca^{2+}, –0.9; Cu^{2+}, –0.5; Cd^{2+}, –0.5	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M $CdCl_2$; pH = 4.5	
		Na^+, +0.3; K^+, +0.3; Ca^{2+}, –1.2; Cu^{2+}, –0.7; Cd^{2+}, –0.7	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M $PbCl_2$;	
		Na^+, +0.7: K^+, +0.1; Ca^{2+}, –0.7; Cu^{2+}, –1.0; Cd^{2+}, –0.8	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M $HgCl_2$; pH = 4.5	
	Pb^{2+}-27 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %), TDDMAC (x_i = 25 %)	Na^+, +0.5; K^+, +0.0 ; Ca^{2+}, –0.5; Cu^{2+}, –0.7; Cd^{2+}, –0.9	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M $HgCl_2$; pH = 4.5	[12]
	Pb^{2+}-27 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %), KFTPB (x_i = 25 %)	Na^+, +0.3; K^+, –0.2 ; Ca^{2+}, –0.8; Cu^{2+}, –2.5; Cd^{2+}, –0.9	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M $HgCl_2$; pH = 4.5	[12]
	Pb^{2+}-27 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %), KFTPB (x_i = 75 %)	Na^+, –1.1; K^+, –2.8; Ca^{2+}, –0.9; Cu^{2+}, –3.9; Cd^{2+}, –0.9	SSM	0.1	0.1	30.1	–	r.o.o.g.; internal electrolyte, 10^{-2} M $HgCl_2$; pH = 4.5	[12]
		Cu^{2+}, –4.4	FIM	–	–				
		Cu^{2+}, –3.8	SSM	0.1	0.1	–	–	internal electrolyte, 10^{-2} M $PbCl_2$; pH = 4.5	
		Cu^{2+}, –3.9	FIM	–	–				
		Cu^{2+}, –4.0	SSM	0.1	0.1	–	–	internal electrolyte, 10^{-2} M LiCl; pH = 4.5	
		Cu^{2+}, –4.1	FIM	–	–				
	Pb^{2+}-27 (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %),	Na^+, –3.7; K^+, –4.3; Ca^{2+}, –2.0; Cu^{2+}, –4.5; Cd^{2+}, –2.8	SSM	0.1	0.1	35.5	–	r.o.o.g.; internal electrolyte, 10^{-2} M $HgCl_2$;	[12]

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	KFTPB (x_i = 150 %)	Cu^{2+}, –4.4	FIM	–	–			pH = 4.5	
		Cu^{2+}, –4.2	SSM	0.1	0.1	–	–	internal electrolyte;	
		Cu^{2+}, –4.1	FIM	–	–			10^{-2} M $PbCl_2$; pH = 4.5	
		Cu^{2+}, –2.7	SSM	0.1	0.1	–	–	internal electrolyte, 10^{-2} M LiCl; pH = 4.5	
	Pb^{2+}-27 (w = 1 %), PVC (w = 33 %), oNPOE (w = 66 %), KFTPB (x_i = 300 %)	Na^+, –1.1; K^+, –0.6; Ca^{2+}, –0.3; Cu^{2+}, –1.2; Cd^{2+}, +0.1	SSM	0.1	0.1	–	–	r.o.o.g.; internal electrolyte, 10^{-2} M $HgCl_2$; pH = 4.5	[12]
	Pb^{2+}-27 (w = 2 %), oNPOE ($w \approx$ 65 %), PVC ($w \approx$ 32 %), KTpClPB (x_i = 85 %)	K^+, –5.2; Ca^{2+}, –4.3 Cu^{2+}, –3.4; Cd^{2+}, –4.2	FIM	–	1 0.1 0.01	30	–	ISFET; pH = 4	[13]
Pb^{2+}-28	**Pb^{2+}-28** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 75 %)	Li^+, –3.3; Na^+, –0.8; K^+, –3.1; NH_4^+, –3.6; Mg^{2+}, –4.2; Ca^{2+}, –4.8; Ba^{2+}, –4.2; Co^{2+}, –4.4; Ni^{2+}, –4.4 Cu^{2+}, –2.8; Zn^{2+}, –4.2; Cd^{2+}, –1.6; Hg^{2+}, strong interference	SSM	0.01	0.01	28.8	$< 10^{-1.8}$	t_{95} < 8 s; $c_{dl} = 10^{-5.5}$ M; 3 < pH < 6; r.o.o.g.	[11]
	Pb^{2+}-28 (w = 2 %), oNPOE ($w \approx$ 65 %), PVC ($w \approx$ 32 %), KTpClPB (x_i = 85 %)	K^+, –2.8; Ca^{2+}, –4.2; Cu^{2+}, –2.7; Cd^{2+}, –1.7	FIM	–	0.1 0.01	–	–	ISFET; pH = 4	[13]
Pb^{2+}-29	**Pb^{2+}-29** (w = 6.2 %), DBP (w = 15.6 %), PVC (w = 78.2 %)	Li^+, +1.50; Na^+, +1.50; K^+, +1.50; NH_4^+, +1.20; Mg^{2+}, –0.75; Ca^{2+}, –0.45; Sr^{2+}, –0.70; Ba^{2+}, –0.55; Co^{2+}, –0.51; Cu^{2+}, –0.55; Zn^{2+}, –0.66; Cd^{2+}, –0.55; Hg^{2+}, –0.55; Ag^+, +1.35; Fe^{3+}, –1.30	FIM	–	0.01	30	$10^{-5.3}$ –$10^{-1.0}$	25.0 ± 0.1 °C; 3 < pH < 6; t_{resp} = 30 s; τ > 120 d (stored in water); r.o.o.g.	[14]

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Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Li^+, –0.48; Na^+, –0.48; K^+, –0.48; NH_4^+, +1.20; Mg^{2+}, –0.75; Ca^{2+}, –0.45; Sr^{2+}, –0.70; Ba^{2+}, –0.55; Co^{2+}, –0.51; Cu^{2+}, –0.55; Zn^{2+}, –0.66; Cd^{2+}, –0.55; Hg^{2+}, –0.55; Ag^+, –0.65; Fe^{3+}, –0.61	FIM	–	0.01	–	–	r.o.o.g.; *K* values were calculated by omitting charge numbers of the ions, i.e., $K=a_A/a_B$.	
Pb^{2+}-30	**Pb^{2+}-30** (w = 3.2 %), oNPOE (w = 64 %), PVC (w = 32 %), KTpClPB(x_i = 28 %)	Li^+, –1.7; Na^+, +0.0; K^+, –0.6; Mg^{2+}, –4.5; Ca^{2+}, –3.2; Fe^{2+}, –3.9; Ni^{2+}, –3.6; Cu^{2+}, –4.3; Fe^{3+}, –3.4	FIM	–	–	28.5	10^{-6} –10^{-3}	r.o.o.g.	[15]
Pb^{2+}-31	**Pb^{2+}-31** (w = 3.2 %), oNPOE (w = 64 %), PVC (w = 32 %), KTpClPB(x_i = 43 %)	Li^+, –1.2; Na^+, +0.2; K^+, –0.5; Mg^{2+}, –4.5; Ca^{2+}, –3.0; Fe^{2+}, –3.0; Ni^{2+}, –3.2; Cu^{2+}, –3.2; Fe^{3+}, –3.4	FIM	–	–	–	–	r.o.o.g.	[15]
Pb^{2+}-32	**Pb^{2+}-32** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –2.35 Ca^{2+}, –1.1; Cu^{2+}, –1.9; Cd^{2+}, –2.10	FIM SSM	– 0.01	– 0.01	19.9	–	r.o.o.g.; $c_{dl} = 10^{-3.40}$ M	[16]
Pb^{2+}-33	**Pb^{2+}-33** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –2.60 Ca^{2+}, –1.4; Cu^{2+}, –2.4; Cd^{2+}, –2.60	FIM SSM	– 0.01	– 0.01	22.3	–	r.o.o.g.; $c_{dl} = 10^{-3.75}$ M	[16]
Pb^{2+}-34	**Pb^{2+}-34** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –2.35 Ca^{2+}, –1.2; Cu^{2+}, –2.4; Cd^{2+}, –2.45	FIM SSM	– 0.01	– 0.01	24.3	–	r.o.o.g.; $c_{dl} = 10^{-3.5}$ M	[16]
Pb^{2+}-35	**Pb^{2+}-35** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –1.65 Ca^{2+}, –0.3; Cu^{2+}, –1.0; Cd^{2+}, –1.60	FIM SSM	– 0.01	– 0.01	–	–	r.o.o.g.; $c_{dl} = 10^{-2.8}$ M	[16]
Pb^{2+}-36	**Pb^{2+}-36** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –2.10 Ca^{2+}, –1.5; Cu^{2+}, –1.8; Cd^{2+}, –1.95	FIM SSM	– 0.01	– 0.01	24.1	–	r.o.o.g. $c_{dl} = 10^{-3.25}$ M	[16]

Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{Pb^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Pb^{2+}-37	**Pb^{2+}-37** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –2.50 Ca^{2+}, –1.5; Cu^{2+}, –2.3; Cd^{2+}, –2.45	FIM SSM	– 0.01	– 0.01	22.2	–	r.o.o.g.; $c_{dl} = 10^{-3.65}$ M	[16]
Pb^{2+}-38	**Pb^{2+}-38** (w = 1 %), oNPOE (w = 65–66 %), PVC (w = 33 %), KTpClPB (x_i = 50 %)	Cd^{2+}, –1.40 Ca^{2+}, +0.2; Cu^{2+}, –0.3; Cd^{2+}, –1.45	FIM SSM	– 0.01	– 0.01	18.0	–	r.o.o.g.; $c_{dl} = 10^{-2.6}$ M	[16]
Pb^{2+}-39	**Pb^{2+}-39** (w = 1.1 %), DBP (w = 65.9 %), PVC (w = 33.0 %)	Na^+, +0.71; K^+, +0.98; Mg^{2+}, –2.32; Ca^{2+}, –2.56; Sr^{2+}, –2.67; Ba^{2+}, –2.56; Ni^{2+}, –2.24; Co^{2+}, –2.90; Cu^{2+}, –2.08; Zn^{2+}, –2.51; Cd^{2+}, –2.43	FIM	–	10^{-2}	30.9	2.8×10^{-6} -9.1×10^{-4}	unbuffered solution; $c_{dl} = 2.0 \times 10^{-6}$ M t_{resp} = 40 s	[17]
		Na^+, +0.79; Mg^{2+}, –2.62; Ca^{2+}, –2.46; Sr^{2+}, –2.57; Ba^{2+}, –2.62; Ni^{2+}, –2.48; Co^{2+}, –2.60; Cu^{2+}, –1.85; Zn^{2+}, –2.62; Cd^{2+}, –2.45	FIM	–	10^{-2}	29.4	3.8×10^{-6} -1.1×10^{-3}	2×10^{-2} M; Tris/HCl; pH = 6.0; $c_{dl} = 3.0 \times 10^{-6}$ M; t_{resp} = 40 s	[17]
	Pb^{2+}-39 (w = 1.1 %), oNPOE (w = 65.9 %), PVC (w = 33.0 %)	Na^+, +0.65; K^+, +0.87; Mg^{2+}, –2.74; Ca^{2+}, –2.57; Sr^{2+}, –2.84; Ba^{2+}, –2.77; Ni^{2+}, –2.87; Co^{2+}, –2.72; Cu^{2+}, –1.78; Zn^{2+}, –2.64	FIM	–	10^{-2}	30.4	2.8×10^{-6} -4.6×10^{-3}	2×10^{-2} M; Tris/HCl; pH = 6.0; $c_{dl} = 2.3 \times 10^{-6}$ M; t_{resp} = 15 s	[17]
Pb^{2+}-40	**Pb^{2+}-40** (w = 2 %), oNPOE ($w \approx 65$ %), PVC ($w \approx 32$ %), KTpClPB (x_i = 60 %)	K^+, –2.4; Ca^{2+}, –3.7; Cu^{2+}, –1.7; Cd^{2+}, –1.9	FIM	–	0.1 0.01	–	–	ISFET; pH = 4	[13]
Pb^{2+}-41	**Pb^{2+}-41** (w = 2.1 %), BBPA ($w \approx 65$ %), PVC ($w \approx 32$ %), KTpClPB (x_i = 76 %)	K^+, interferes; Ca^{2+}, –2.4; Cu^{2+}, –2.3; Cd^{2+}, –2.7	FIM	–	0.1	30	–	ISFET; pH = 4	[13]
Pb^{2+}-42	**Pb^{2+}-42** (w = 2 %), BBPA ($w \approx 65$ %), PVC ($w \approx 32$ %), KTpClPB (x_i = 73 %)	K^+, interferes; Ca^{2+}, –3.2; Cu^{2+}, –3.0; Cd^{2+}, –3.3	FIM	–	0.1	60	–	ISFET; pH = 4	[13]

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Table 18: Pb^{2+}-Selective Electrodes (*Continued*)

(1) L.K. Shpigun, E.A. Novikov, Yu. A. Zolotov, *J. Anal. Chem. USSR,* **41**, 482–486 (1986).
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(4) A. Borraccino, L. Campanella, M.P. Sammartino, M. Tomassetti, M. Battilotti, *Sens. Actuator*s, **B7**, 535–539 (1992).
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(12) W. Wróblewski, Z. Brzózka, *Anal. Chim. Acta*, **326**, 163–168 (1996).
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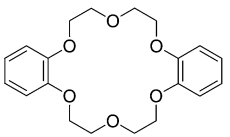
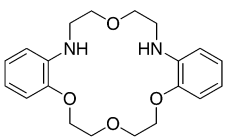
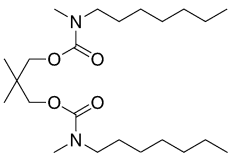
(15) J.S. Kim, A. Ohki, N. S. Cho, I.Y. Yu, T. Hayashita, S. Maeda, *Bull. Korean Chem. Soc.*, **17**, 953–955 (1996).
(16) W. Wróblewski, Z. Brzózka, R.G. Janssen, W. Verboom, D. Reinhoudt, *New. J. Chem.*, **20**, 419–426 (1996).
(17) N. Tavakkoli, M. Shamsipur, *Anal. Lett.*, **29**, 2269–2279 (1996).



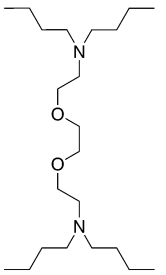
Pb^{2+}-1 (M_r = 360.41)

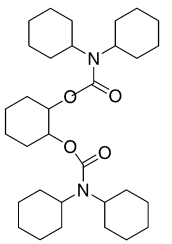


Pb^{2+}-2 (M_r = 358.33)

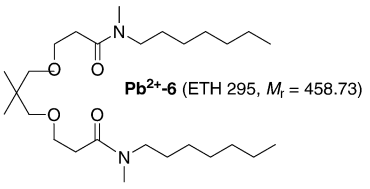


Pb^{2+}-4 (ETH 149, M_r = 402.62)

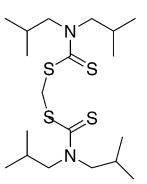




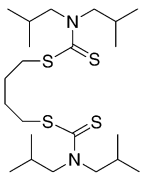
Pb^{2+}-3 (M_r = 372.64) **Pb^{2+}-5** (ETH 2120, M_r = 530.80)



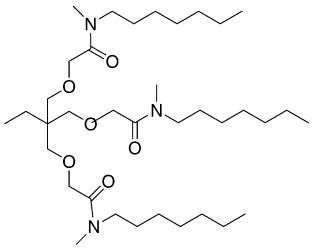
Pb^{2+}-6 (ETH 295, M_r = 458.73)



Pb^{2+}-8 (M_r = 422.77)

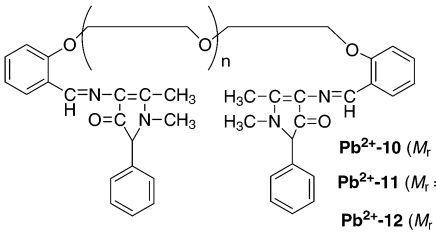


Pb^{2+}-9 (M_r = 464.85)

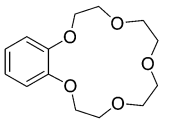


Pb^{2+}-7 (ETH 227, M_r = 641.98)

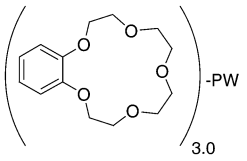
Table 18: Pb^{2+}-Selective Electrodes (*Continued*)



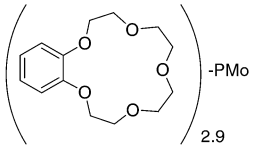
Pb^{2+}-10 (M_r = 682.82): n=1
Pb^{2+}-11 (M_r = 726.88): n=2
Pb^{2+}-12 (M_r = 770.09): n=3



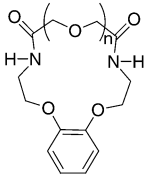
Pb^{2+}-13 (M_r = 268.31)



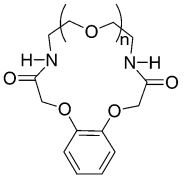
PW; Phosphotungstic acid
Pb^{2+}-14 (M_r = 3685.11)



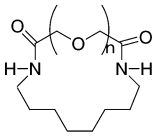
PMo; Phosphomolybdic acid
Pb^{2+}-15 (M_r = 2603.35)



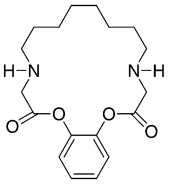
Pb^{2+}-16 (M_r = 382.42): n=3
Pb^{2+}-17 (M_r = 338.36): n=2
Pb^{2+}-18 (M_r = 294.31): n=1



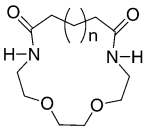
Pb^{2+}-19 (M_r = 382.42): n=3



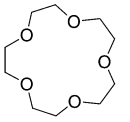
Pb^{2+}-20 (M_r = 330.43): n=3
Pb^{2+}-21 (M_r = 286.37): n=2
Pb^{2+}-22 (M_r = 242.32): n=1



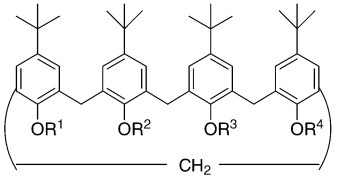
Pb^{2+}-23 (M_r = 334.42)



Pb^{2+}-24 (M_r = 240.35): n=3
Pb^{2+}-25 (M_r = 226.32): n=2
Pb^{2+}-26 (M_r = 212.29): n=1



Pb^{2+}-29 (M_r = 220.32)



Pb^{2+} -27 (M_r = 1053.61): R^1=R^2=R^3=R^4=$CH_2C(S)N(CH_3)_2$
Pb^{2+} -28 (M_r = 935.43): R^1=R^3=C_3H_7, R^2=R^4=$CH_2C(S)N(CH_3)_2$
Pb^{2+} -40 (M_r = 851.27): R^1=R^3=H, R^2=R^4=$CH_2C(S)N(CH_3)_2$
Pb^{2+} -41 (M_r = 991.42): R^1=R^3= C_3H_7, R^2=R^4= $CH_2CH_2OCH_2C(O)N(CH_3)_2$
Pb^{2+} -42 (M_r = 903.31): R^1=R^3=C_3H_7, R^2=R^4=$CH_2C(O)N(CH_3)_2$

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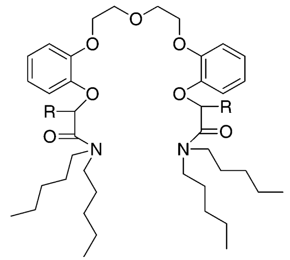
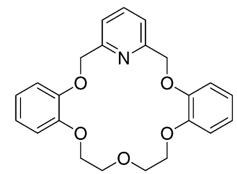
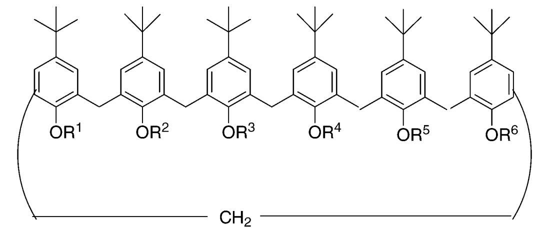
Table 18: Pb^{2+}-Selective Electrodes (*Continued*)



Pb^{2+}-30 (M_r = 684.97): R=H
Pb^{2+}-31 (M_r = 1077.72): R=$C_{14}H_{29}$



Pb^{2+}-39
(M_r = 393.44)



Pb^{2+}-32 (M_r = 1125.55): R^1=P(S)(OC_2H_5)$_2$, R^2=R^3=R^4=R^5=R^6=H
Pb^{2+}-33 (M_r = 1277.70): R^1= R^3= P(S)(OC_2H_5)$_2$, R^2=R^4=R^5=R^6=H
Pb^{2+}-34 (M_r = 1277.70): R^1= R^4= P(S)(OC_2H_5)$_2$, R^2=R^3=R^5=R^6=H
Pb^{2+}-35 (M_r = 1734.15): R^1= R^2= R^3=R^4= R^5= P(S)(OC_2H_5)$_2$, R^6=H
Pb^{2+}-36 (M_r = 1333.81): R^1= R^4= P(S)(OC_2H_5)$_2$, R^2=R^3= R^5= R^6=CH_3
Pb^{2+}-37 (M_r = 1471.93): R^1= R^3= R^5=P(S)(OC_2H_5)$_2$, R^2= R^4= R^6=CH_3
Pb^{2+}-38 (M_r = 1610.05): R^1= R^2= R^3= R^4=P(S)(OC_2H_5)$_2$, R^5= R^6=CH_3

Table 19: UO_2^{2+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{UO2^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
UO_2^{2+}-1	**UO_2^{2+}-1** (w = 3 %), DBP (w = 12 %), PVC (w = 83 %), NaTPB (x_i = 56 %)	Na^+, –1.77; Na^+, –2.46; Ba^{2+}, –2.01; Ni^{2+}, –1.44; Cu^{2+}, –2.82; Fe^{3+}, –2.08 (pH = 2.0); Al^{3+}, –2.24; Cl^-, –2.89; SO_4^{2-}, –2.60; $Cr_2O_7^{2-}$, –2.19	FPM	–	–	59	10^{-4}–10^{-1}	τ > 30 d; $c_{dl} = 1 \times 10^{-6}$ M; pH = 3.0	[1]
UO_2^{2+}-2	**UO_2^{2+}-2** (w = 1 %), oNPOE (w = 67 %), PVC (w = 32 %)	Li^+, –1.00; Na^+, –0.68; K^+, –0.85; NH_4^+, –0.92; Mg^{2+}, –0.80; Ca^{2+}, –0.92; Sr^{2+}, –0.89; Ba^{2+}, –1.05; Mn^{2+}, –1.05; Fe^{2+}, –1.00; Fe^{3+}, +0.52; Co^{2+}, –1.00; Ni^{2+}, –0.96; Cu^{2+}, –1.30; Zn^{2+}, –1.30; Cd^{2+}, –1.00	SSM	10^{-4}	10^{-4}	39.4	$10^{-5.4}$–10^{-3}	25.0 ± 0.1 °C; $c_{dl} = 2.5 \times 10^{-4}$ M; t_{resp} < 1 min	[2]
		Li^+, –2.44; Na^+, –2.11; K^+, –1.70; NH_4^+, –2.09; Mg^{2+}, –2.52; Ca^{2+}, –2.64; Sr^{2+}, –2.64; Ba^{2+}, –2.68; Mn^{2+}, –2.80; Fe^{2+}, –2.10; Fe^{3+}, –0.23; Co^{2+}, –2.77; Ni^{2+}, –2.04; Cu^{2+}, –2.02; Zn^{2+}, –2.46; Cd^{2+}, –2.77	SSM	10^{-2}	10^{-2}				
		K^+, –0.77; Mg^{2+}, –1.15; Fe^{2+}, –1.10; Fe^{3+}, +0.48	SSM	10^{-4}	10^{-4}	–	–	after 5 months dry storage	
		K^+, –1.70; Mg^{2+}, –2.49; Fe^{2+}, –2.00; Fe^{3+}, –0.19	SSM	10^{-2}	10^{-2}				
	UO_2^{2+}-2 (w = 1 %), DOPP (w = 67 %), PVC (w = 32 %)	Li^+, –5.17 Na^+, –1.42; K^+, –3.34; NH_4^+, –1.39; Mg^{2+}, –5.96; Ca^{2+}, –1.85; Sr^{2+}, –2.24; Ba^{2+}, –1.68; Mn^{2+}, –2.40; Fe^{2+}, –1.42; Fe^{3+}, +0.90; Co^{2+}, –2.40; Ni^{2+}, –1.54; Cu^{2+}, –1.39; Zn^{2+}, –1.45; Cd^{2+}, –1.89	SSM	10^{-4}	10^{-4}	13.2	$10^{-5.4}$–10^{-3}	25.0 ± 0.1 °C; $c_{dl} = 6.0 \times 10^{-4}$ M; t_{resp} < 1 min	[2]
		Li^+, –4.55; Na^+, –3.21; K^+, –4.71; NH_4^+, –2.66; Mg^{2+}, –6.88; Ca^{2+}, –3.84; Sr^{2+}, –4.24; Ba^{2+}, –2.87;	SSM	10^{-2}	10^{-2}				

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Table 19: UO_2^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{UO_2^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
		Mn^{2+}, –4.55; Fe^{2+}, –1.22 Fe^{3+}, +1.54; Co^{2+}, –4.54; Ni^{2+}, –1.74; Cu^{2+}, –2.64; Zn^{2+}, –2.81; Cd^{2+}, –3.96							
		K^+, –2.00; Fe^{2+}, –1.39; Fe^{3+}, +0.93	SSM	10^{-4}	10^{-4}	–	–	after 6 months in 0.1 M UO_2Cl_2	
		K^+, –2.02; Fe^{2+}, –1.30; Fe^{3+}, +1.57	SSM	10^{-2}	10^{-2}				
	UO_2^{2+}-2 (w = 1 %), DOPP (w = 67 %), PVC (w = 31 %), NaTPB (x_i = 119 %)	Li^+, –1.34; Na^+, –1.11; K^+, –0.93; NH_4^+, –1.62; Mg^{2+}, –1.80; Ca^{2+}, –1.60; Sr^{2+}, –1.66; Ba^{2+}, –1.92; Mn^{2+}, –1.31; Fe^{2+}, –1.28; Fe^{3+}, –1.05; Co^{2+}, –1.31; Ni^{2+}, –0.96; Cu^{2+}, –1.12; Zn^{2+}, –0.80; Cd^{2+}, –1.03	SSM	10^{-4}	10^{-4}	22.7	$10^{-5.4}$–10^{-3}	25.0 ± 0.1 °C; $c_{dl} = 3.0 \times 10^{-4}$ M; t_{resp} < 1 min	[2]
		Li^+, –2.44; Na^+, –2.14; K^+, –2.68; NH_4^+, –3.96; Mg^{2+}, –3.60; Ca^{2+}, –3.35; Sr^{2+}, –3.51; Ba^{2+}, –1.92; Mn^{2+}, –2.96; Fe^{2+}, –3.44; Fe^{3+}, –2.28; Co^{2+}, –2.96; Ni^{2+}, –2.51; Cu^{2+}, –2.60; Zn^{2+}, –2.46; Cd^{2+}, –2.70	SSM	10^{-2}	10^{-2}	–	–		
		K^+, –0.96; Mg^{2+}, –1.64; Fe^{2+}, –1.20; Fe^{3+}, –0.54	SSM	10^{-4}	10^{-4}	–	–	after 6 months in 0.1 M UO_2Cl_2	
		K^+, –2.92; Mg^{2+}, –2.45; Fe^{2+}, –1.52; Fe^{3+}, –1.27	SSM	10^{-2}	10^{-2}				
UO_2^{2+}-3	**UO_2^{2+}-3 ,** oNPOE, PVC, NaTPB (weight ratio not given)	Na^+, –4.4; K^+, –4.7; Mg^{2+}, –4.2; Ca^{2+}, –4.2; Ba^{2+}, –4.2; Co^{2+}, –4.1; Ni^{2+}, –3.9; Cu^{2+}, –4.2; Al^{3+}, –4.7; Fe^{3+}, –3.1	FIM	–	0.1	30	10^{-5}–10^{-3}	pH = 2.70 ± 0.05; $c_{dl} = 2.5 \times 10^{-4}$ M; t_{resp} < 1 min	[3]

Table 19: UO_2^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{UO2^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	UO_2^{2+}-3 (w = 1 %), oNPOE (w = 65.5 %), PVC (w = 33 %), NaTpClPB (x_i = 59 %)	Na^+, –0.60; K^+, –0.19 Mg^{2+}, –1.96; Ca^{2+}, –1.74	FIM	–	0.1	18 ± 1	10^{-4}–10^{-1}	pH = 3.0; $c_{dl} = 6.3 \times 10^{-5}$ M	[4]
UO_2^{2+}-4	**UO_2^{2+}-4** (w = 1 %), oNPOE (w = 66 %), PVC (w = 33 %)	Li^+, –1.24; Na^+, –1.27; K^+, –1.28; NH_4^+, –1.46; Mg^{2+}, –1.51; Ca^{2+}, –1.60; Sr^{2+}, –1.74; Ba^{2+}, –1.54; Mn^{2+}, –1.25; Co^{2+}, –1.32; Ni^{2+}, –1.20; Cu^{2+}, –1.74; Zn^{2+}, –1.15; Cd^{2+}, –1.58; Al^{3+}, –1.72	FIM	–	0.1	–	–	pH = 3.0; $c_{dl} = 2.8 \times 10^{-5}$ M	[4]
	UO_2^{2+}-4 (w = 1 %), oNPOE (w = 65.9 %), PVC (w = 33 %), NaTpClPB (x_i = 9 %)	Li^+, –2.14; Na^+, –2.19; K^+, –2.24; NH_4^+, –3.06; Mg^{2+}, –3.16; Ca^{2+}, –3.00; Sr^{2+}, –2.68; Ba^{2+}, –3.19; Mn^{2+}, –2.25; Co^{2+}, –2.28; Ni^{2+}, –2.48; Cu^{2+}, –2.49; Zn^{2+}, –2.32; Cd^{2+}, –3.42; Al^{3+}, –2.39	FIM	–	0.1	–	–	pH = 3.0;	[4]
	UO_2^{2+}-4 (w = 1 %), oNPOE (w = 65.5 %), PVC (w = 33 %), NaTpClPB (x_i = 44 %)	Li^+, –3.04; Na^+, –3.03; K^+, –3.00; NH_4^+, –3.26; Mg^{2+}, –3.14; Ca^{2+}, –3.12; Sr^{2+}, –3.70; Ba^{2+}, –3.74; Mn^{2+}, –2.92; Co^{2+}, –3.05; Ni^{2+}, –3.07; Cu^{2+}, –2.96; Zn^{2+}, –2.60; Cd^{2+}, –3.92; Al^{3+}, –2.92	FIM	–	0.1	29 ± 1	10^{-4}–10^{-1}	pH = 3.0; $c_{dl} = 2.8 \times 10^{-5}$ M	[4]
	UO_2^{2+}-4 (w = 1 %), oNPOE (w = 65 %), PVC (w = 33 %), NaTpClPB (x_i = 89 %)	Li^+, –1.07; Na^+, –1.13; K^+, –1.07; NH_4^+, –1.19; Mg^{2+}, –3.13; Ca^{2+}, –2.28; Sr^{2+}, –2.32; Ba^{2+}, –3.13; Mn^{2+}, –2.17; Co^{2+}, –2.18; Ni^{2+}, –2.28; Cu^{2+}, –2.21; Zn^{2+}, –2.27; Cd^{2+}, –3.33; Al^{3+}, –2.14	FIM	–	0.1	–	–	pH = 3.0	[4]

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Table 19: UO_2^{2+}-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{UO2^{2+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
	UO_2^{2+}-4 (w = 1 %), DBP (w = 65.5 %), PVC (w = 33 %), NaTpClPB (x_i = 44 %)	Na^+, –0.57; K^+, –0.09; Mg^{2+}, –1.68; Ca^{2+}, –1.49	FIM	–	0.1	–	–	pH = 3.0; $c_{dl} = 2.8 \times 10^{-5}$ M; $\tau \approx 120$ d	[4]
	UO_2^{2+}-4 (w = 1 %), DBS (w = 65.5 %), PVC (w = 33 %), NaTpClPB (x_i = 44 %)	Na^+, –0.13; K^+, +0.08; Mg^{2+}, –0.46; Ca^{2+}, –0.39	FIM	–	0.1	–	–	pH= 3.0	[4]
UO_2^{2+}-5	**UO_2^{2+}-5** (w = 1 %), oNPOE (w = 65.5 %), PVC (w = 33 %), NaTpClPB (x_i = 51 %)	Na^+, –0.17; K^+, –0.04; Mg^{2+}, –1.50; Ca^{2+}, –1.17	FIM	–	0.1	11 ± 1	10^{-3}–10^{-2}	pH = 3.0; $c_{dl} = 3.5 \times 10^{-4}$ M	[4]
UO_2^{2+}-6	**UO_2^{2+}-6** (w = 1 %), oNPOE (w = 65.5 %), PVC (33 %), NaTpClPB (x_i = 53 %)	Na^+, –0.38; K^+, –0.17; Mg^{2+}, –1.60; Ca^{2+}, –1.44	FIM	–	0.1	14 ± 1	10^{-3}–10^{-2}	pH = 3.0; $c_{dl} = 1.0 \times 10^{-4}$ M	[4]
UO_2^{2+}-7	**UO_2^{2+}-7** (0.1M), nitrobenzene, NaTPB (0.1 M)	Li^+, –3.4; Na^+, –4.5; Mg^{2+}, –2.4; Ca^{2+}, –1.6; Ba^{2+}, –1.4; Cu^{2+}, –2.9; Cd^{2+}, –2.2; Pb^{2+}, –3.6; Th^{2+}, –0.2	SSM biionic potential method	0.01	0.01	29.8 ± 1.5	10^{-5}–10^{-2}	20 ± 1 °C; pH = 3	[5]
UO_2^{2+}-8	**UO_2^{2+}-8** (0.1M), nitrobenzene, NaTPB (0.1 M)	Li^+, –2.9; Na^+, –3.6; Mg^{2+}, –2.8; Ca^{2+}, –2.3; Cu^{2+}, –3.5; Cd^{2+}, –2.3; Pb^{2+}, –3.4; Th^{2+}, –0.5	SSM biionic potential method	0.01	0.01	27.3 ± 0.6	10^{-5}–10^{-2}	20 ± 1 °C; pH = 3	[5]
UO_2^{2+}-9	**UO_2^{2+}-9** (0.1M), nitrobenzene, NaTPB (0.1 M)	Li^+, –3.6; Na^+, –3.4; Mg^{2+}, –2.9; Ca^{2+}, –2.2; Ba^{2+}, –0.8; Cu^{2+}, –3.0; Cd^{2+}, –2.6; Pb^{2+}, –3.5; Th^{2+}, –0.8; H^+, 3.1	SSM biionic potential method	0.01	0.01	27.4 ± 1.5	10^{-5}–10^{-2}	20 ± 1 °C; pH = 3	[5]
	UO_2^{2+}-9 (w = 4 %), oNPOE (w = 65 %), PVC (w = 30 %), NaTPB (x_i = 41 %)	Li^+, –3.8; Na^+, –2.8; Mg^{2+}, –1.9; Ca^{2+}, –1.3; Cu^{2+}, –2.0; Cd^{2+}, –1.9; Pb^{2+}, –1.9; Th^{2+}, –0.4	SSM	0.01	0.01	27.3 ± 1.0	10^{-5}–10^{-2}	20 ± 1 °C; pH = 3	[5]

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(2) A.C. Stevens, H. Freiser, *Anal. Chim. Acta*, **248**, 315–321 (1991).
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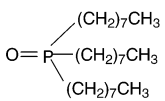
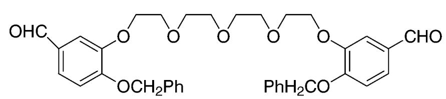
(5) A.N. Khramov, A.R. Garifzyanov, V.F. Toropova, *J. Anal. Chem. USSR*, **49**, 1010–1012 (1994).

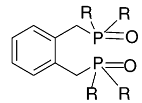
Table 19: UO_2^{2+}-Selective Electrodes (*Continued*)



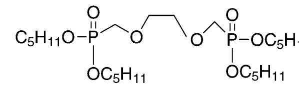
UO_2^{2+}-1 (M_r = 386.65)



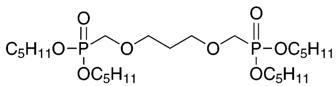
UO_2^{2+}-2 (M_r = 614.70)



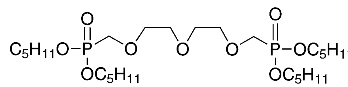
UO_2^{2+}-3 (M_r = 562.63): R =-$C_6H_4CH_3$
UO_2^{2+}-4 (M_r = 426.56): R=-C_4H_9
UO_2^{2+}-5 (M_r = 490.56): R= -OC_4H_9
UO_2^{2+}-6 (M_r = 506.53): R=-C_6H_5



UO_2^{2+}-7 (M_r = 530.62)



UO_2^{2+}-8 (M_r = 544.65)

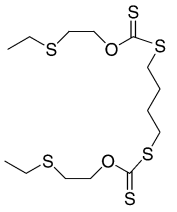


UO_2^{2+}-9 (M_r = 574.68)

Table 20: Sm^{3+}-Selective Electrodes

ionophore	membrane composition	$\lg K_{Sm^{3+},B^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/ decade)	linear range (M)	remarks	ref.
Sm^{3+}-1	**Sm^{3+}-1** (w = 10.2%), KTpClPB (x_i = 6 %), oNPOE (w = 60.4 %), PVC (w = 28.7 %)	Na^+, –3.2; K^+, –2.8; NH_4^+, –2.9; Mg^{2+}, –2.6; Ca^{2+}, –1.8; Ni^{2+}, –2.6; Cu^{2+}, +1.2; Zn^{2+}, –2.7; Pb^{2+}, –0.8; Al^{3+}, –2.8; Cr^{3+}, –2.5; Fe^{3+}, +0.1; La^{3+}, –2.3; Ce^{3+}, –1.6; Pr^{3+}, –1.5; Nd^{3+}, –1.8; Gd^{3+}, –1.2	MPM	10^{-5}	–	20.0	1×10^{-7} – 5×10^{-3}	coated carbon elec.; 25 ± 2 °C; 4.5 < pH < 6.7; t_{resp} = 5.0 s; τ = 14 d	[1,2]
	Sm^{3+}-1 (w = 10.2%), KTpClPB (x_i = 6 %), FNDPE (w = 60.4 %), PVC (w = 28.7 %)	Na^+, –3.3; K^+, –2.9; NH_4^+, –2.9; Mg^{2+}, –2.3; Ca^{2+}, –2.7; Ni^{2+}, –2.2; Cu^{2+}, +1.2; Zn^{2+}, –2.3; Pb^{2+}, –0.8; Al^{3+}, –2.9; Cr^{3+}, –3.1; Fe^{3+}, +0.3; La^{3+}, –2.05; Ce^{3+}, –1.3; Pr^{3+}, –1.0; Nd^{3+}, –1.5; Gd^{3+}, –1.4	MPM	10^{-5}	–	20.0	1×10^{-7} – 5×10^{-3}	coated carbon elec.; 25 ± 2 °C; 4.5 < pH < 6.7; t_{resp} = 5.0 s; τ = 14 d	[2]

(1) T. Ogata, D. A. Chowdhury, S. Kamata, Y. Usui, K. Ohashi, *Chem. Lett.*, 1041-1042 (1995).
(2) D.A. Chowdhury, T. Ogata, S. Kamata, K. Ohashi, *Anal. Chem..*, **68**, 366-377 (1996).



Sm^{3+}-1 (M_r = 418.71)